



785 Wonderland Road Ltd.

Transportation Impact Study

Mall Redevelopment

**Westmount Mall
785 Wonderland Road South,
City of London**

October 2022
23181

Disclaimer

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1 Introduction

LEA Consulting Ltd. (LEA) was retained by 785 Wonderland Road Ltd. to undertake a Transportation Impact Study (TIS) for the proposed redevelopment of the Westmount Shopping Centre (785 Wonderland Road South) in the City of London (herein referred to as the “subject site”). The TIS has been prepared in support of an Official Plan Amendment (OPA) / Rezoning (ZBA) application. A conceptual development framework has been prepared to illustrate how the subject site will be developed in a way that is compatible with the surrounding residential neighbourhood, while contributing to the establishment of a complete community through the introduction of residential and office land uses on-site. The applicant has not advanced detailed development plans for the subject site at this stage. The site location is shown in **Figure 1-1**.

Figure 1-1: Site Location



Source: Google Maps

The purpose of this study is to assess the proposed development from a transportation perspective, determine traffic impacts associated with the development concept and identify any required mitigation measures. The study was conducted in accordance with the City of London’s “Transportation Impact Assessment Guidelines (April 2012)”.

1.1 Redevelopment Proposal

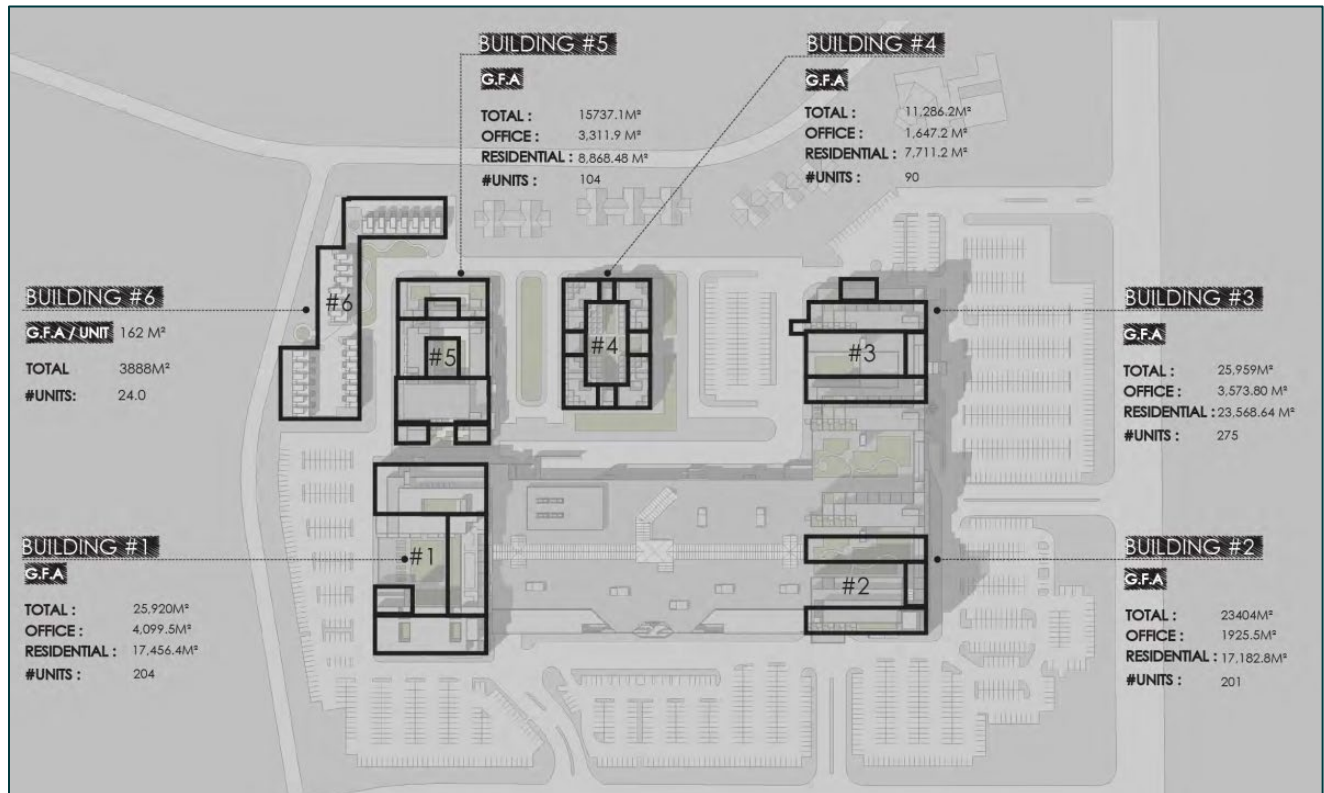
The conceptual development framework consists of six mixed-use buildings containing a total of 900 residential units. An additional 26,272 m² of commercial GFA will be added on-site, including the introduction of office uses. A portion of the existing mall space will be converted from retail to office as part of the redevelopment. A breakdown of the existing and proposed land uses is outlined in **Table 1-1**.

Table 1-1: Site Statistics

| Land Use | Existing | Future Development | Difference |
|------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| Residential – Apartment | N/A | 876 units | + 876 units |
| Residential - Townhouse | N/A | 24 units | + 24 units |
| Total Residential | N/A | 900 units | + 900 units |
| Commercial | 42,367 m ² | 40,000 m ² Office (20,000 m ² new, 20,000 m ² existing) and 18,639 m ² other commercial | + 26,272 m ² |
| Total Non-Residential | 42,367 m² | 68,639 m² | + 26,272 m² |

Access to the proposed development will be provided via the existing driveway connections on Wonderland Road South and Viscount Road. The conceptual site plan is illustrated in **Figure 1-2**.

Figure 1-2: Conceptual Site Plan



Source: 360 Architecture

2 Existing Transportation Conditions

This section identifies and assesses the existing transportation conditions present in the study area, including the road, transit, cyclist, and pedestrian networks. The study area was determined based on the size of the development and its anticipated transportation impacts. The study area includes the following existing intersections:

- ▶ Wonderland Road South and Commissioners Road West (Signalized);
- ▶ Wonderland Road South and Village Green Avenue (Signalized);
- ▶ Wonderland Road South and Existing Mall Access – North (Unsignalized);
- ▶ Wonderland Road South and Existing Mall Access – South (Signalized);
- ▶ Wonderland Road South and Viscount Road (Signalized);
- ▶ Wonderland Road South and Southdale Road West (Signalized);
- ▶ Viscount Road and Existing Mall Access – East (Unsignalized);
- ▶ Viscount Road and Existing Mall Access – West (Signalized);
- ▶ Viscount Road and Woodcrest Boulevard (PXO);

In addition, four major internal intersections within the existing mall parking lot were included as part of the analysis.

2.1 Existing Road Network

This subsection describes the road network within the study area. All of the existing roads are under the City of London’s jurisdiction. **Figure 2-1** illustrates the existing intersections and their lane configurations.

Wonderland Road South is a north-south *Urban Thoroughfare* that operates with a four-lane cross section (i.e. 2 lanes per direction). Within the vicinity of the site, the posted speed limit is 60km/h, except for between McMaster Drive and Commissioners Road West, where the posted speed limit is reduced to 50km/h. The London Plan designates Wonderland Road South as a Walking and Cycling Route. The roadway provides in-boulevard multi-use pathways on both sides north of Commissioners Road West and south of Southdale Road West.

Commissioners Road West is an east-west *Civic Boulevard* that operates with a two-lane cross section (i.e. 1 lane per direction) to the west of Wonderland Road South, and a four lane cross section (i.e. 2 lanes per direction) to the east of Wonderland Road South. The street has a posted speed limit of 60km/h. The London Plan designates Commissioners Road West as a Walking and Cycling Route. Within the vicinity of the subject site, sidewalks are provided on both sides of the street. To the east of Wonderland Road South, painted bike lanes are provided on the roadway. Parking is not permitted on either side of the street.

Viscount Road is an east-west *Neighbourhood Connector Road* that operates with a two-lane cross section (i.e. 1 lane per direction). The street is classified as a Community Safety Zone with a posted speed limit of 40km/h. The London Plan designates Viscount Road as a Walking and Cycling Route, providing sidewalks on both sides. The Cycling Master Plan indicates that the road is a signed bike route east of Wonderland Road South, with plans for future expansion to the west. There is no parking permitted on the south side of the street and portions of the north side of the street are restricted as well.

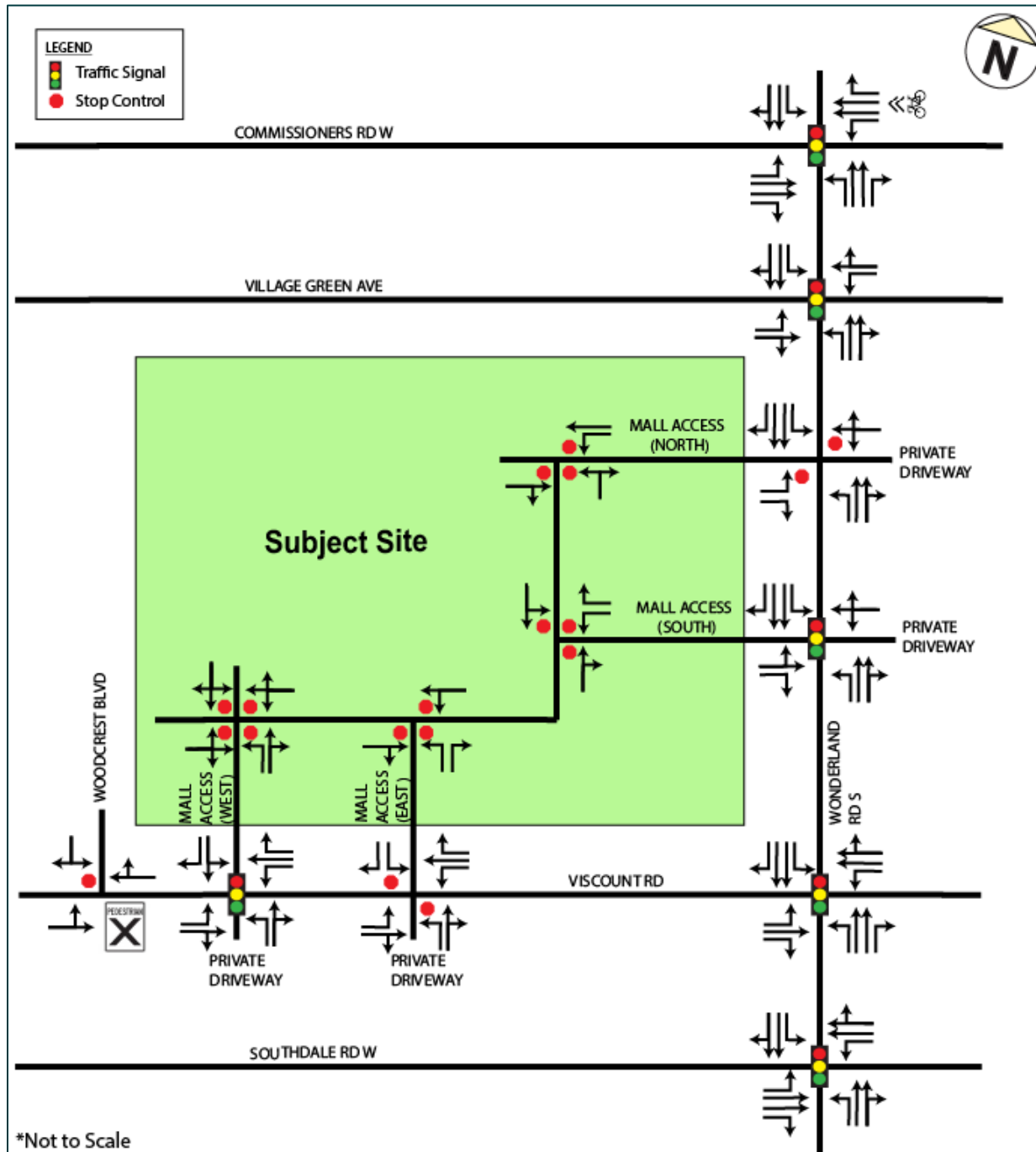
Southdale Road West is an east-west *Civic Boulevard* that operates with a two-lane cross section (i.e. 1 lane per direction) to the west of Pine Valley Boulevard, and a four lane cross section (i.e. 2 lanes per direction) to the east of Pine Valley Boulevard. The street has a posted speed limit of 60km/h. The London Plan designates Southdale Road West as a Walking and Cycling Route. There are sidewalks on both sides of the road except for west of Pine Valley Boulevard, where sidewalks are only provided on the north side of the road. There are no designated cycling facilities, although buffered bike lanes are proposed in the Cycling Master Plan. Parking is not permitted on either side of the street.

Village Green Avenue is a *Neighbourhood Connector Road* that runs north-south from Viscount Road, curving east-west to Wonderland Road South. Village Green Avenue operates with a two-lane cross section (i.e. 1 lane per direction). The street has a posted speed limit of 50km/h. There is no parking permitted on the east and south sides of the street, and portions of the north side of the street. Sidewalks are provided on both sides of the street.

Woodcrest Boulevard is a north-south *Neighbourhood Street* that runs from Village Green Avenue in the north to Viscount Road in the south. Woodcrest Boulevard operates with a two-lane cross section (i.e. 1 lane per direction). The street has a posted speed limit of 50km/h. Sidewalks are provided on both sides of the roadway.

The London Plan prioritizes vehicle and freight traffic on *Urban Thoroughfares* (Wonderland Road South), while prioritizing pedestrian, cycling, and transit movement on *Civic Boulevards* (Commissioners Road West and Southdale Road West), *Neighbourhood Connectors* (Viscount Road and Village Green Avenue) and *Neighbourhood Streets* (Woodcrest Boulevard)

Figure 2-1: Existing Intersection and Lane Configuration

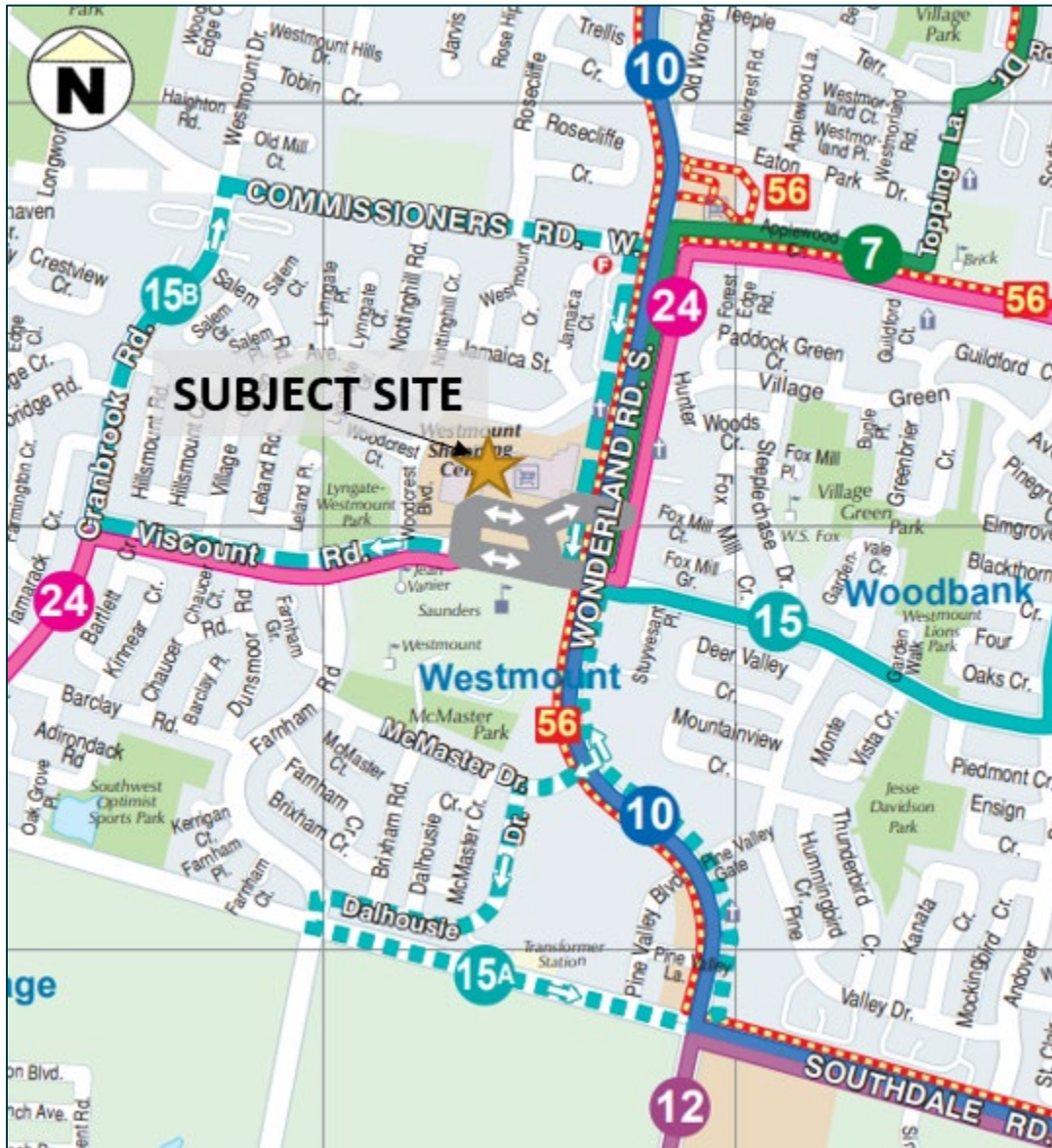


2.2 Existing Transit Network

The subject site is currently serviced by London Transit Commission (LTC) bus services. Bus stops are present within a short walking distance and directly on-site, providing good accessibility to

the LTC transit network. **Figure 2-2** illustrates the existing transit network in the area of the subject site. Service details for available transit routes are described below.

Figure 2-2: Existing Transit Network



Source: London Transit Commission

Bus Route 7 Westmount Shopping Centre – Argyle Mall is a route operating between Westmount Shopping Centre and Argyle Mall, providing connections to the London VIA Rail station and Downtown London. This route operates every 20 minutes throughout the weekday AM and PM peak periods, and every 30 minutes off-peak and on weekends.

Access Locations: Route 7 is accessible in the study area at the Westmount Shopping Centre bus terminal.

Bus Route 10 Barker at Huron – Natural Science / Masonville Place is a route operating between Western University, White Oaks Mall and Huron Heights, providing connections to Fanshawe College and multiple shopping centres. There is also a limited-service extension to Masonville Mall which operates during afternoons, evenings and weekends. This route operates every 20 minutes throughout the weekday AM and PM peak periods, and every 30 minutes off-peak and on weekends.

Access Locations: Route 10 is accessible in the study area at the Westmount Shopping Centre bus terminal.

Bus Route 15 Huron Heights – Westmount Shopping Centre is a route operating between Westmount and Huron Heights, providing connections to the London VIA Rail station and Downtown London. At the south end of the route two branches are provided – 15A and 15B. 15A branches west to Dalhousie and Brixham, while 15B branches southeast to Cranbrook and Commissioners. This route operates every 15-minutes during the weekday, every 30 minutes during weekday evenings (after 6pm) and every 20-30 minutes during weekends.

Access Locations: Route 15 is accessible in the study area at the Westmount Shopping Centre bus terminal.

Bus Route 24 Talbot Village - Summerside is a route operating between Talbot Village and Summerside, providing connections to Victoria Hospital, Westmount Shopping Centre, and multiple schools. This route operates every 45-minutes throughout the day on weekdays and every 40 minutes throughout the day on weekends (note that weekend service is only from approximately 9:30am – 5:00pm).

Access Locations: Route 24 is accessible in the study area at the Westmount Shopping Centre bus terminal.

Bus Route 56 Berkshire – White Oaks Mall is a “Community Bus” route operating between Berkshire Village and White Oaks Mall, providing connections to a number of shopping centres from residential areas. The Community Bus is designed specifically for seniors and persons with mobility challenges. This route operates on Wednesdays only and runs 4 trips per day, approximately 80 minutes apart.

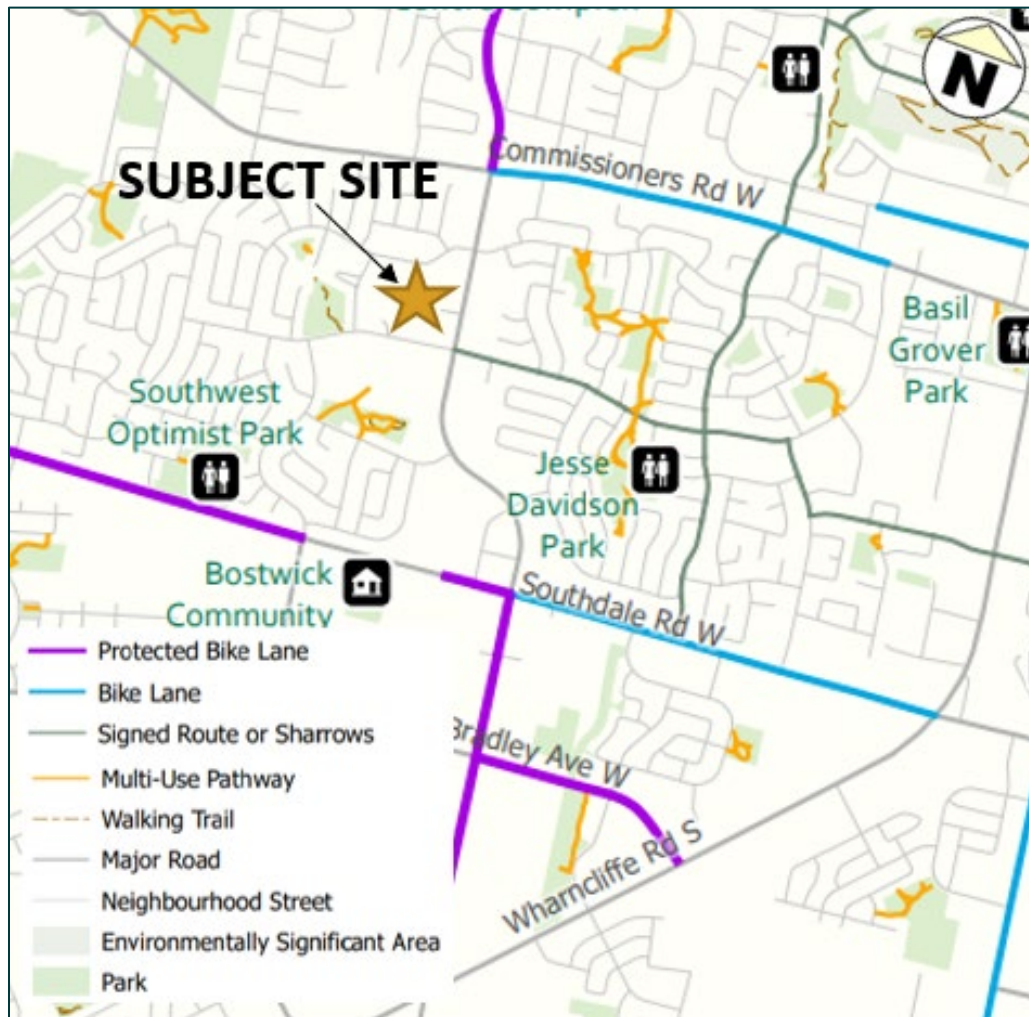
Access Locations: Route 56 is accessible in the study area at the intersection of Wonderland Road South & Commissioners Road West (600m north of subject site).

2.3 Existing Cycling Network

Although no cycling facilities are provided along Wonderland Road South and Viscount Road immediately adjacent to the subject site, bike facilities are available within the surrounding area. Protected bike lanes are provided along parts of Wonderland Road South and Southdale Road West to the north and south of the site, largely in the form of in-boulevard multi-use trails. On-street bike lanes are present along Commissioners Road, east of Wonderland Road South. There is also a signed bike route on Viscount Road, east of Wonderland Road South. Multi-use pathways

are present throughout the parks in the Westmount neighbourhood and surrounding areas. **Figure 2-3** displays the nearby cycling network.

Figure 2-3: Existing Cycling Network



Source: City of London

2.4 Existing Pedestrian Network

The subject site is located in a walkable area with continuous sidewalks available on both sides of all roadways in the study area. Crosswalks are provided at all signaled intersections. An additional pedestrian crossing (PXO) is provided along Viscount Road directly west of the existing mall.

Future residents and employees will have convenient access to a range of retail and service destinations within the existing Westmount Mall, including a grocery store, eating establishments, and a cinema. The site is also surrounded by several public facilities accessible within a convenient walk, including schools and a number of nearby parks. In addition, a large number of retail and service amenities can be accessed within a 10-minute walk of the site,

particularly at the intersections of Wonderland Road South with Commissioners Road West and Southdale Road West.

2.5 Traffic Data Collection

Turning movement counts (TMCs) were used as the source of traffic data in the intersection capacity analysis. LEA collected traffic counts for all the intersections within the study area during the weekday AM and PM peak periods. Signal timing plans were obtained from the City of London. **Table 2-1** below summarizes the traffic data used in this study. Detailed TMCs and signal timing plans are included in **Appendix A**.

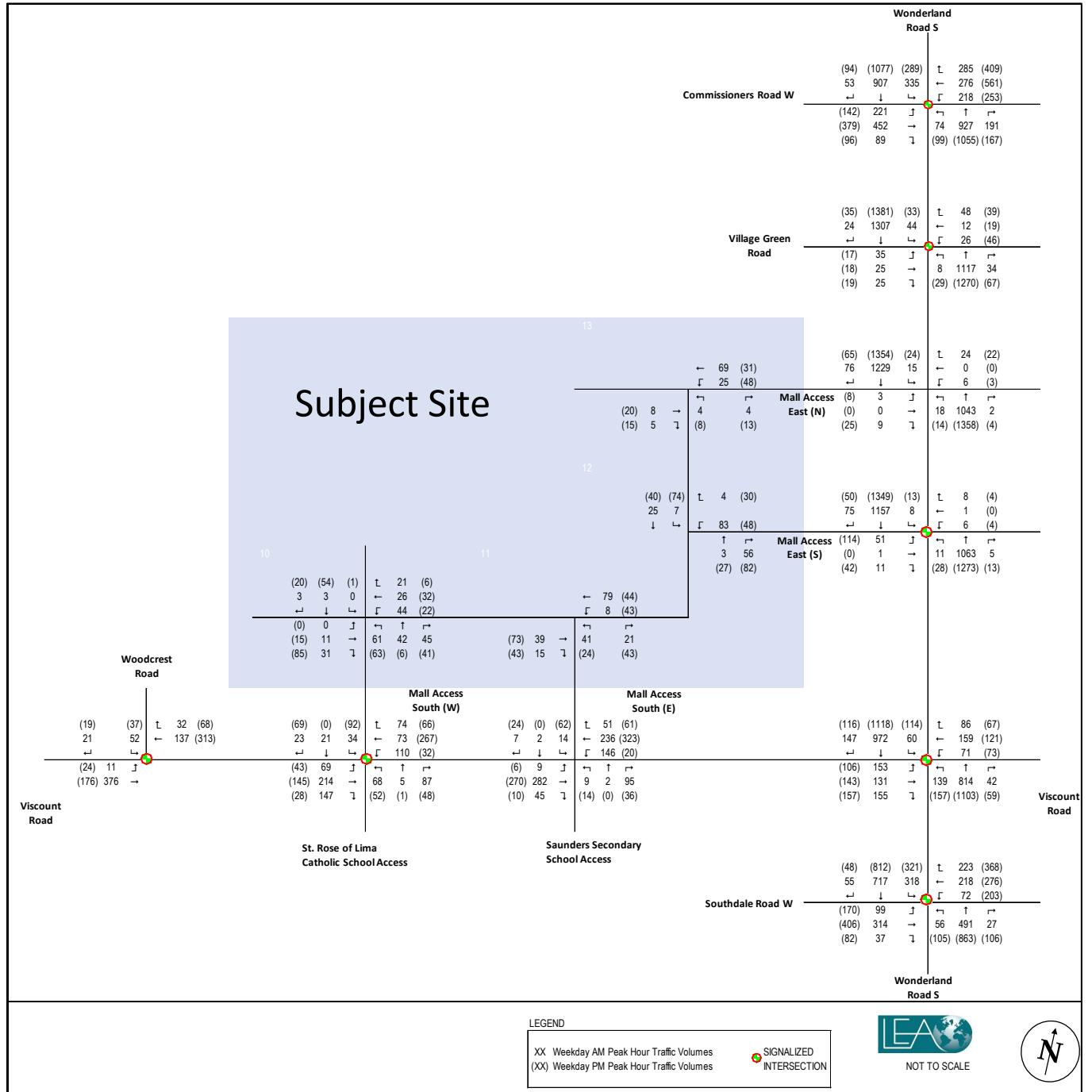
Table 2-1: Traffic Data Collection

| Intersection | Date | Source |
|-------------------------------------------------------------|-------------------------|-------------------|
| Wonderland Rd S & Commissioners Rd W | September 20th, 2022 | LEA Consulting |
| Wonderland Rd S & Village Green Ave | | |
| Wonderland Rd S & Westmount Shopping Centre Access (North) | | |
| Wonderland Rd S & Westmount Shopping Centre Access (South) | | |
| Wonderland Rd S & Viscount Rd | | |
| Wonderland Rd S & Southdale Rd W | | |
| Westmount Shopping Centre Access (East) & Viscount Rd | | |
| Westmount Shopping Centre Access (West) & Viscount Rd | | |
| Woodcrest Blvd & Viscount Rd | | |
| Westmount Shopping Centre Access (East) & Mall Frontage Rd | | |
| Westmount Shopping Centre Access (West) & Mall Frontage Rd | | |
| Westmount Shopping Centre Access (North) & Mall Frontage Rd | | |
| Westmount Shopping Centre Access (South) & Mall Frontage Rd | | |

2.6 Existing Traffic Volumes

Existing traffic volumes during the weekday AM and PM peak hours are illustrated in **Figure 2-4**. Traffic volumes were balanced at the four site accesses.

Figure 2-4: Existing Weekday Peak Hour Traffic Volumes



3 Future Background Transportation Conditions

For the analysis of future background traffic conditions, this study conservatively assumes that full buildout of the development concept will occur by the year 2027. The analysis considers a five-year horizon to determine whether the existing road network can support the development concept without the need for off-site infrastructure improvements such as road widenings or intersection modifications.

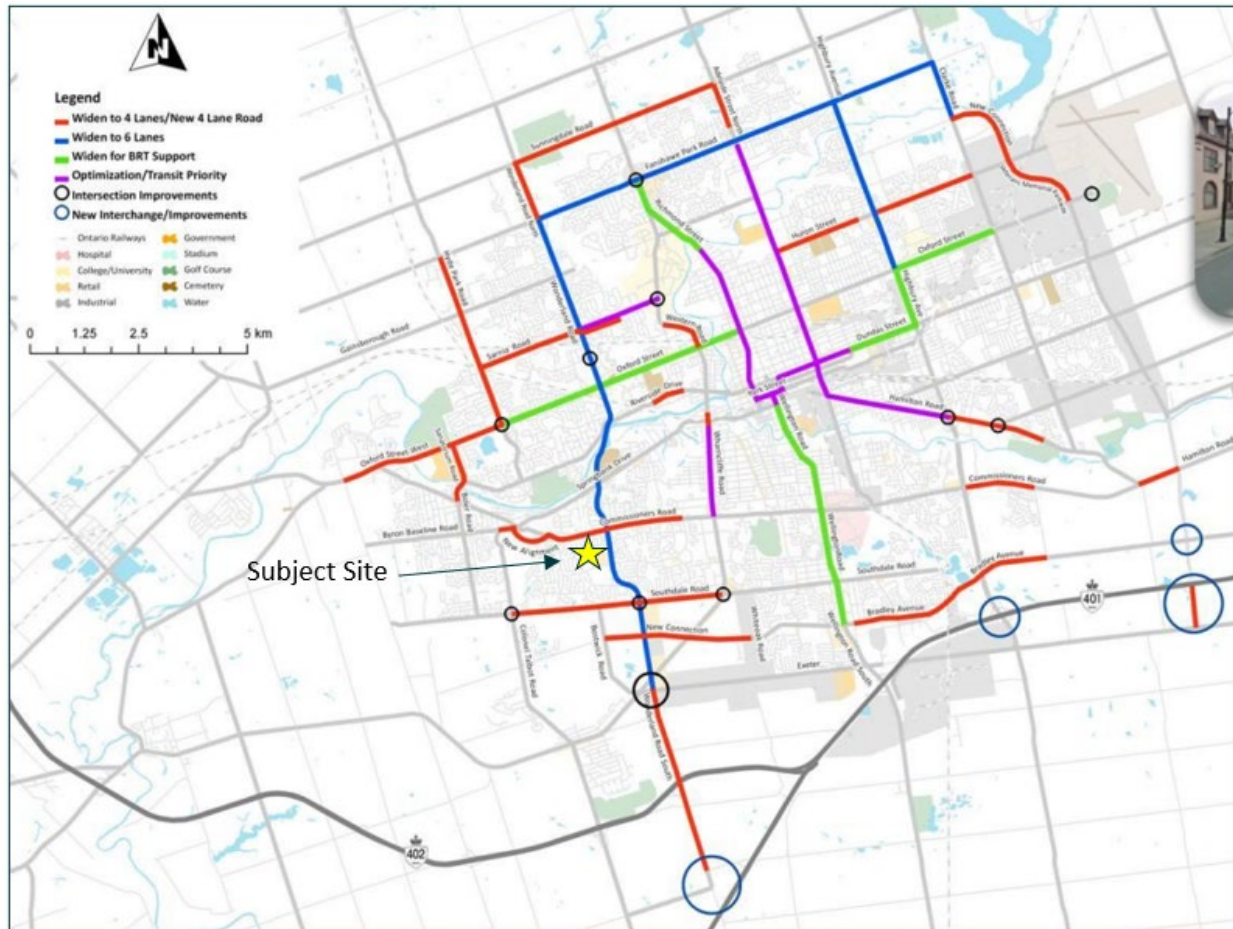
3.1 Corridor Growth

An annual growth rate of 0.7% per year was applied to corridor movements within the study area. The growth rate was calculated based on a comparison of historical TMC data with the traffic counts collected in September 2022. Full details are provided in **Appendix B**.

3.2 Future Transportation Network Improvements

The London Transportation Master Plan (TMP) identifies several improvements and recommendations to support future growth in the City. **Figure 3-1** illustrates the 2030 baseline road network improvements that were identified in the TMP.

Figure 3-1: London TMP 2030 Baseline Road Network Improvements



Source: City of London

Wonderland Road South: London’s TMP indicates that Wonderland Road South will be widened to six lanes (i.e. 3 lanes per direction) within the study area by the year 2030. However, it is understood that City Council voted to pause the supporting environmental assessment study in 2021 and that no further work has been undertaken.

Commissioners Road West: The TMP indicates that Commissioners Road West will be reconstructed and widened to four lanes (i.e. 2 lanes per direction) west of Wonderland Road South by the year 2030.

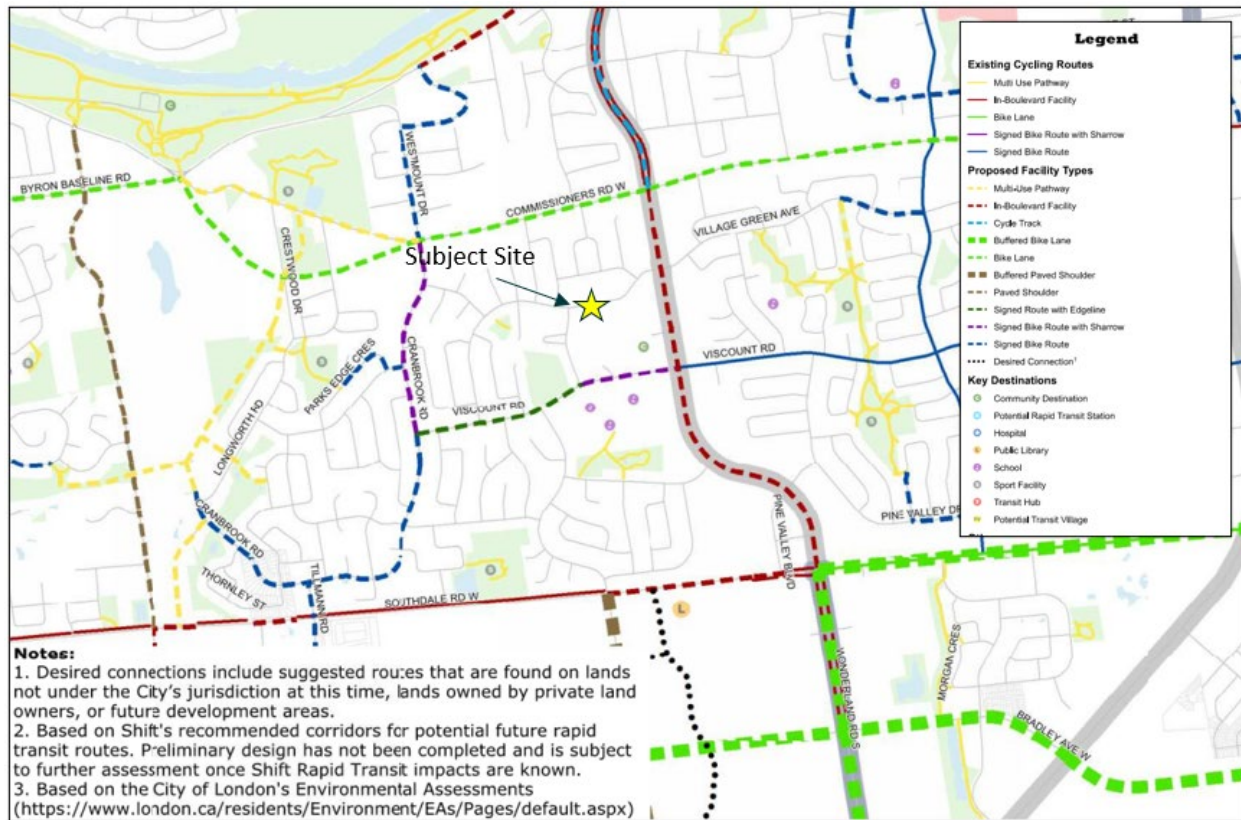
Southdale Road West: The TMP indicates that Southdale Road West will be reconstructed and widened to four lanes (i.e. 2 lanes per direction) west of Wonderland Road South by the year 2030. T

To be conservative, the analysis assumes that full buildout of the development concept will occur prior to completion of any roadway widening projects within the study area.

The City of London Cycling Master Plan was also reviewed to determine whether future active transportation improvements are planned within the study area. The plan indicates future in-

boulevard cycling facilities will be provided along Wonderland Road South adjacent to the subject site, along with an extension of the existing signed bike route on Viscount Road. Cycling improvements are also planned for Commissioners Road West and Southdale Road West within the study area. No associated timing has been provided and to be conservative they are not assumed to occur within the planning horizon of this study. **Figure 3-2** illustrates planned cycling infrastructure improvements within the study area.

Figure 3-2: City of London Cycling Master Plan

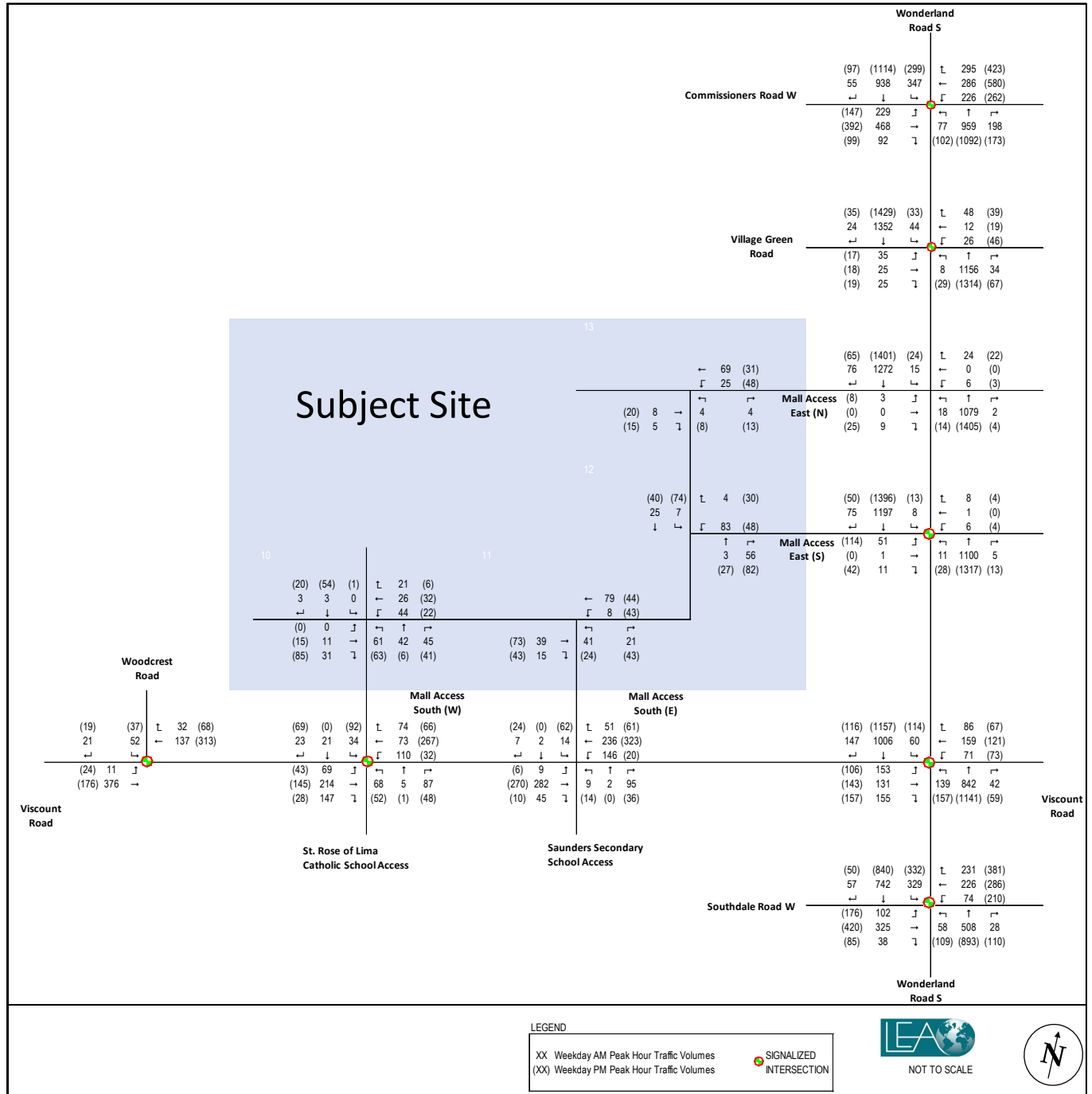


Source: City of London

3.3 Future Background Traffic Volumes

No background developments were identified within the immediate study area. Future background traffic conditions were determined by applying general corridor growth to existing traffic volumes. Future background traffic volumes during the weekday AM and PM peak hours are illustrated in **Figure 3-3**.

Figure 3-3: Future Background Weekday Peak Hour Traffic Volumes



LEGEND
 XX Weekday AM Peak Hour Traffic Volumes
 (XX) Weekday PM Peak Hour Traffic Volumes
 SIGNALIZED INTERSECTION



4 Site-Generated Traffic

The following sections discuss the calculation, distribution, and assignment of site-generated vehicle trips based on the proposed development concept.

4.1 Trip Generation

Vehicle trips associated with the existing retail were identified based on logical routing and removed from the surrounding road network.

Trip generation was estimated for the proposed residential and office components using baseline person trip rates from the ITE Trip Generation Manual 11th Edition. Internal trip capture was applied to reflect the mix of proposed land uses on-site. External person trips were converted to trips by mode using an assumed vehicle mode share of 60% for the residential component, consistent with the City of London TMP. The existing city-wide vehicle mode share of 73.5% was conservatively applied for the office and retail components.

Proposed retail trip generation was estimated using the existing trip generation survey data collected at the site accesses. Vehicle trips were converted to person trips using the assumed vehicle mode share of 73.5%. No pass-by trip adjustments were applied.

Site trip generation associated with the proposed development concept is provided in **Table 4-1**. Full details are provided in **Appendix C**.

Table 4-1: Trip Generation

| | Description | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|-------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------|------------|------------|----------------------|------------|------------|
| | | In | Out | Total | In | Out | Total |
| Residential <i>(ITE 222)</i> <i>Multifamily</i> <i>High-Rise</i> 875 Units | Person Trip Rate | 0.17 | 0.17 | 0.34 | 0.18 | 0.18 | 0.35 |
| | Person Trips | 149 | 149 | 298 | 153 | 153 | 306 |
| | Site Interaction | 3 | 5 | 8 | 82 | 76 | 158 |
| | Net Person Trips | 146 | 144 | 290 | 71 | 77 | 148 |
| | Vehicle Mode Share | 60% | 60% | 60% | 60% | 60% | 60% |
| | Total External Vehicle Trips | 88 | 86 | 174 | 43 | 46 | 89 |
| Residential <i>(ITE 220)</i> <i>Multifamily</i> <i>Low-Rise</i> 25 Units | Person Trip Rate | 0.39 | 0.47 | 0.86 | 0.53 | 0.47 | 1.00 |
| | Person Trips | 10 | 12 | 22 | 13 | 12 | 25 |
| | Net Person Trips | 10 | 12 | 22 | 13 | 12 | 25 |
| | Vehicle Mode Share | 60% | 60% | 60% | 60% | 60% | 60% |
| | Total External Vehicle Trips | 6 | 7 | 13 | 8 | 7 | 15 |
| Office <i>(ITE 710)</i> <i>General</i> <i>Office</i> 431,000 ft² | Person Trip Rate | 1.37 | 0.20 | 1.57 | 0.23 | 1.29 | 1.52 |
| | Person Trips | 589 | 88 | 677 | 98 | 557 | 655 |
| | Site Interaction | 27 | 25 | 51 | 14 | 29 | 43 |
| | Net Person Trips | 562 | 63 | 625 | 85 | 528 | 612 |
| | Vehicle Mode Share | 73.5% | 73.5% | 73.5% | 73.5% | 73.5% | 73.5% |
| | Total External Vehicle Trips | 413 | 47 | 460 | 62 | 388 | 450 |
| Proxy Commercial 201,000 ft² | Vehicle Trip Rate | 1.23 | 0.55 | 1.78 | 1.05 | 1.37 | 2.41 |
| | Person Trips | 335 | 151 | 486 | 286 | 374 | 660 |
| | Internal Reduction | 26 | 27 | 53 | 51 | 78 | 130 |
| | Net Person Trips | 309 | 124 | 433 | 235 | 296 | 530 |
| | Vehicle Mode Share | 73.5% | 73.5% | 73.5% | 73.5% | 73.5% | 73.5% |
| | Total External Vehicle Trips | 227 | 91 | 318 | 172 | 217 | 389 |
| Total Site Vehicle Trips | | 734 | 232 | 966 | 288 | 683 | 971 |
| Existing Site Vehicle Trips (Removed) | | 391 | 176 | 567 | 334 | 436 | 770 |
| Net Site Vehicle Trips | | 343 | 56 | 399 | -46 | 247 | 201 |

The development concept has a net vehicle trip generation of 399 two-way auto trips during the weekday AM peak hour, and 201 two-way auto trips during the weekday PM peak hour.

4.2 Trip Distribution and Assignment

The directional trip distribution of residential and office site traffic was estimated using a first principles approach based on the pattern of land uses in London and the surrounding arterial/highway network. Trip distribution estimates were compared and verified against existing observed turning movement patterns. Site traffic was assigned to the surrounding road network based on logical routing, turn restrictions and the location and configuration of the site

accesses. The assumed residential and office trip distribution is illustrated in **Table 4-2**. Detailed calculations are provided in **Appendix C**.

Table 4-2: Residential and Office Trip Distribution

| Gateways | Total | South | Downtown | North | East | West |
|---------------------|-------|-------|----------|-------|------|------|
| South (Wonderland) | 20% | 20% | | | | |
| East (Commissioner) | 10% | | | | 10% | |
| East (Southdale) | 5% | | | | 5% | |
| North (Wonderland) | 55% | | 30% | 20% | 5% | |
| West (Commissioner) | 5% | | | | | 5% |
| West (Southdale) | 5% | | | | | 5% |

The assumed trip distribution of retail trips was determined based on the observed vehicle distribution at the existing site accesses.

Figure 4-1 illustrates existing site traffic (to be removed) during the weekday AM and PM peak hours. **Figure 4-2** illustrates traffic associated with the proposed land uses. **Figure 4-3** illustrates net site traffic. Note: minor volume discrepancies are attributable to rounding.

Figure 4-1: Existing Site Traffic (Removed)

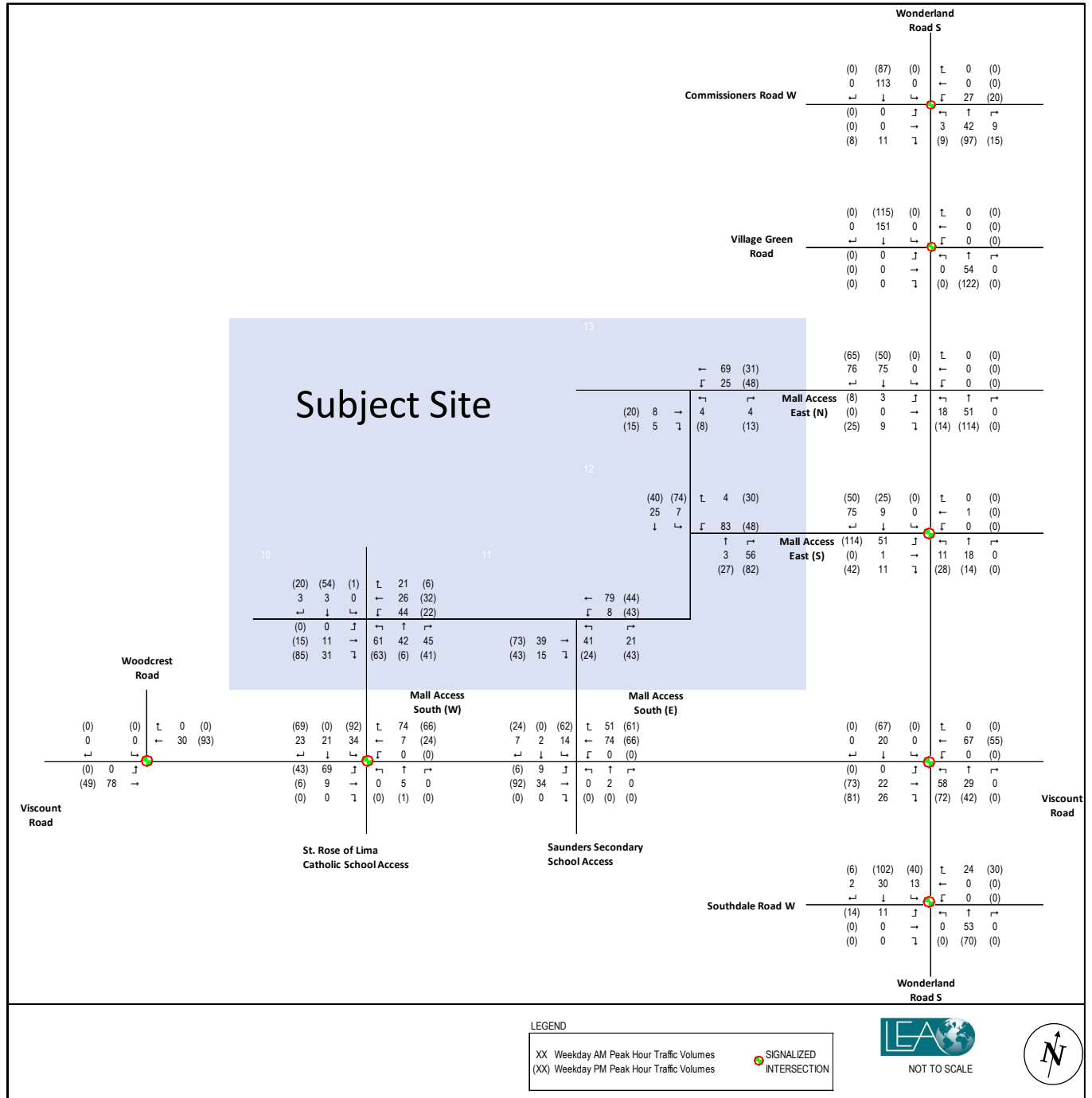


Figure 4-2: Proposed Site Traffic

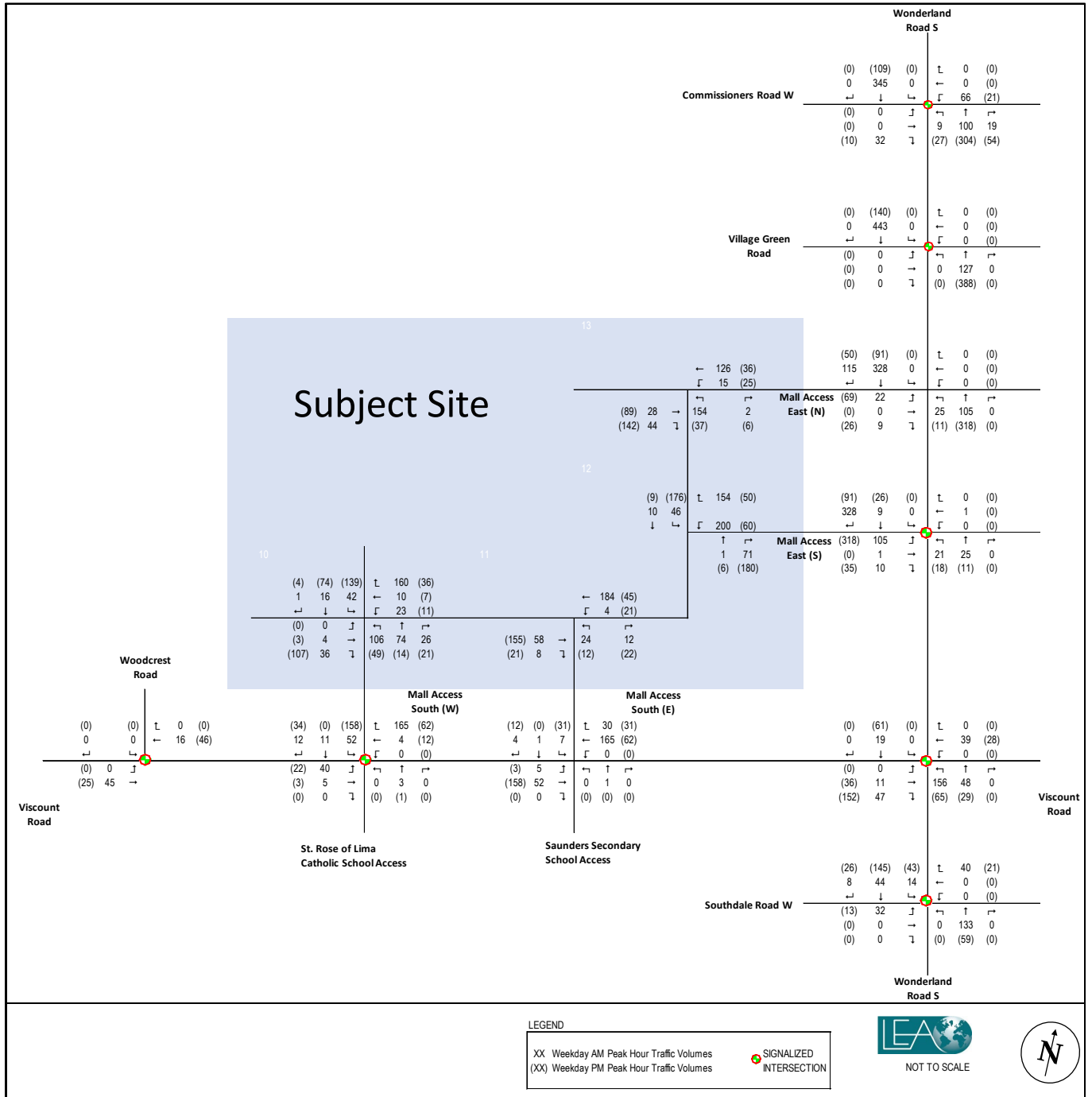
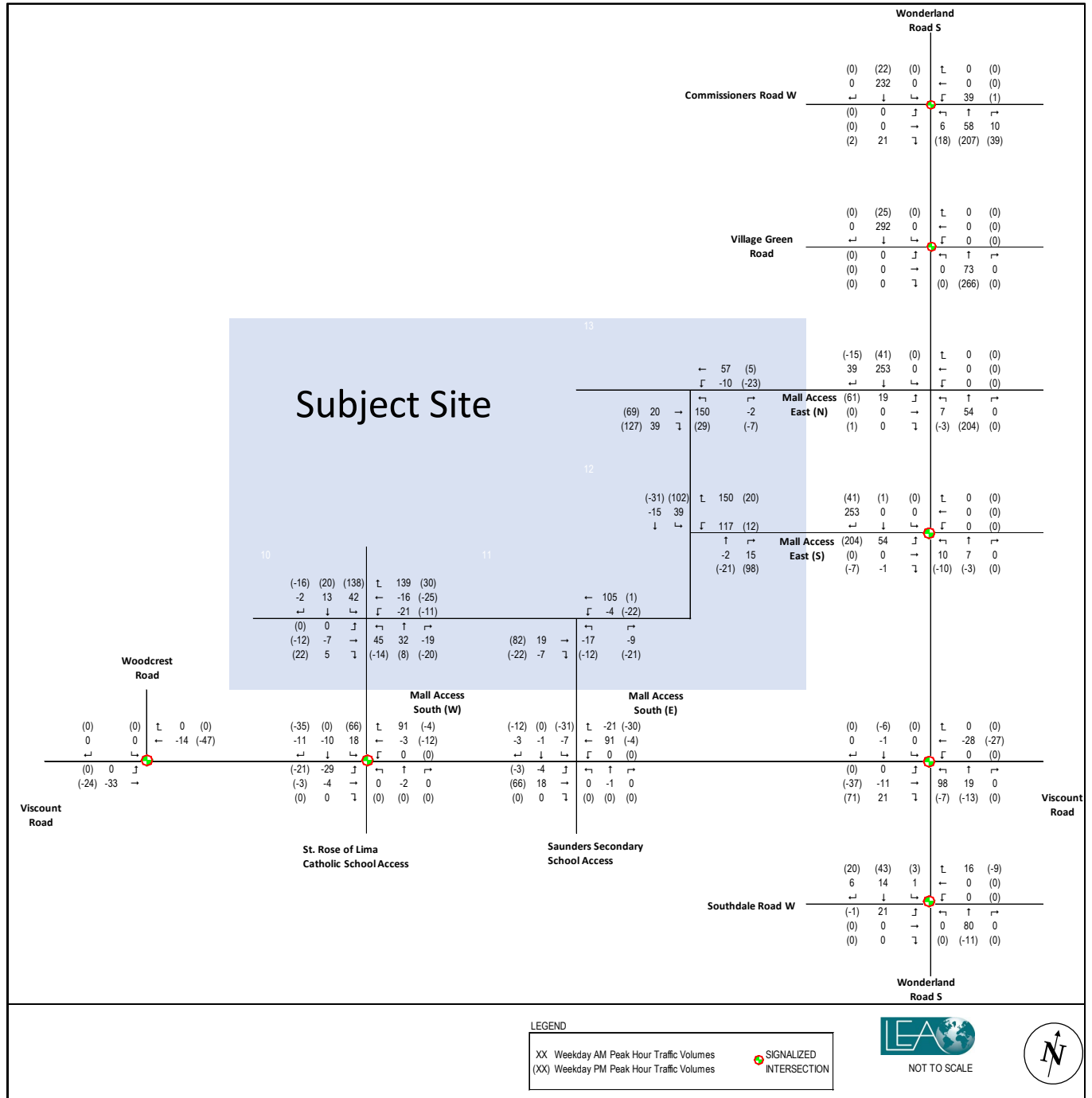


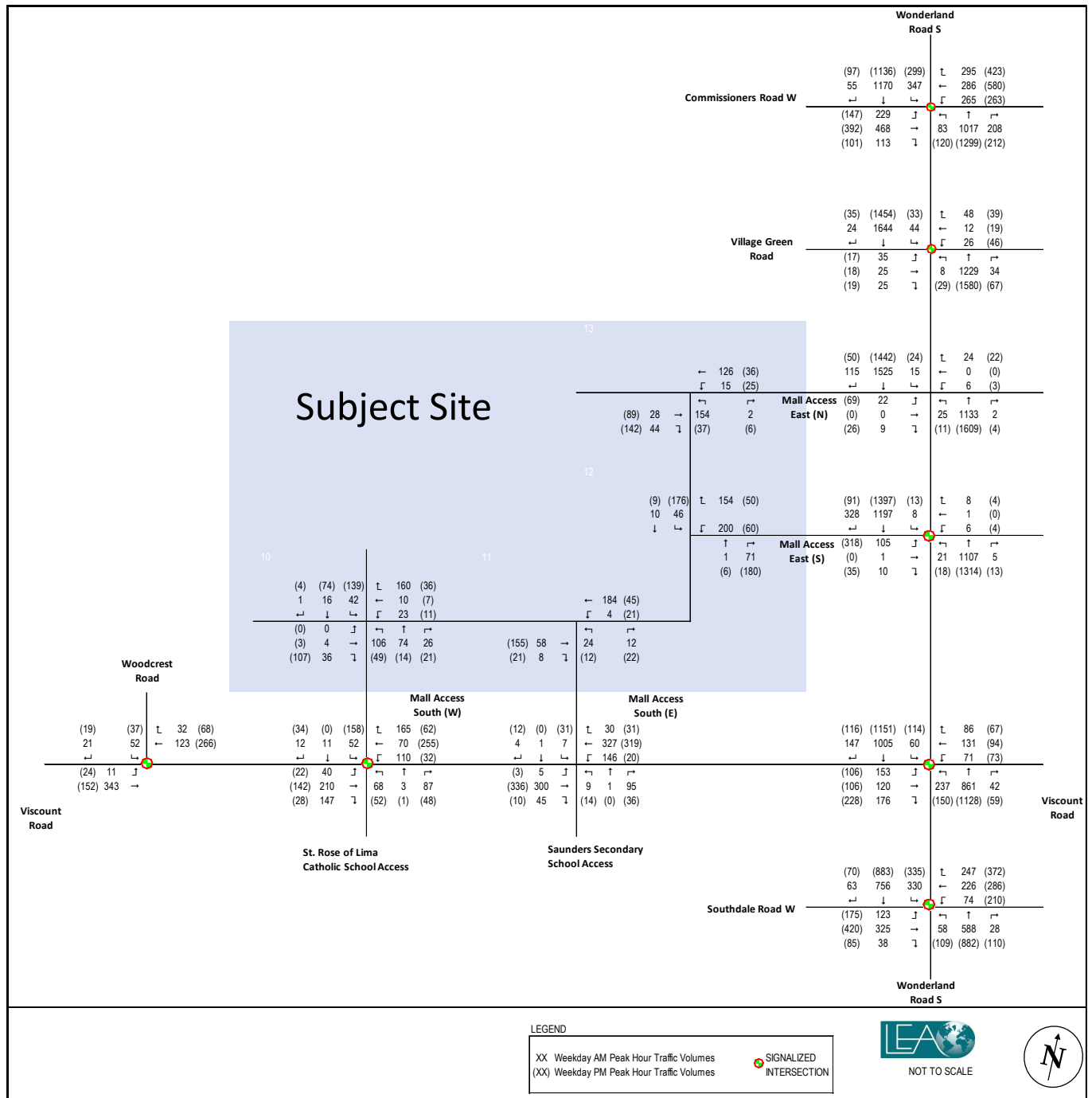
Figure 4-3: Net Site Traffic



5 Future Total Traffic Conditions

Future total traffic conditions include the addition of net site trips to future background volumes. Future total traffic volumes are illustrated in **Figure 5-1**.

Figure 5-1: Future Total Weekday Peak Hour Traffic Volumes



6 Intersection Capacity Analysis

The intersection capacity analysis was conducted using Synchro 11.0, which is based on the Highway Capacity Manual (HCM) 2000 and adhering to the *City of London Transportation Impact Assessment Guidelines (April 2012)*. The intersection capacity analysis has been conducted for the weekday AM and PM peak hours. Peak Hour Factors (PHF) under existing conditions have been calculated for each intersection based on observed traffic volumes.

Movements of interest were identified as those experiencing level of service (LOS) E or worse and/or a volume-to-capacity (V/C) ratio greater than 0.90. Detailed capacity results are provided in **Appendix D**.

6.1 Signalized Intersection Analysis

The following section discusses the intersection capacity analysis results for signalized intersections.

Table 6-1: Intersection Capacity Analysis – Wonderland Rd S & Commissioners Rd W (Signalized)

| AM | Existing | | | | | Future Background | | | | | Future Total | | | | |
|----------------|-------------|-------------|-----------|----------|------------|-------------------|-------------|-----------|----------|------------|--------------|-------------|------------|----------|------------|
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.87 | 38 | D | - | - | 0.90 | 40 | D | - | - | 0.97 | 44 | D | - |
| EBL | 221 | 0.70 | 44 | D | 63 | 229 | 0.72 | 45 | D | 65 | 229 | 0.72 | 45 | D | 65 |
| EBT | 452 | 0.75 | 52 | D | 74 | 468 | 0.75 | 51 | D | 76 | 468 | 0.75 | 51 | D | 76 |
| EBR | 89 | 0.07 | 41 | D | 4 | 92 | 0.07 | 41 | D | 5 | 113 | 0.08 | 41 | D | 10 |
| WBL | 218 | 0.93 | 79 | E | 65 | 226 | 0.97 | 89 | F | 71 | 265 | 1.13 | 138 | F | 94 |
| WBT | 276 | 0.49 | 45 | D | 46 | 286 | 0.49 | 45 | D | 47 | 286 | 0.49 | 45 | D | 47 |
| WBR | 285 | 0.19 | 42 | D | 24 | 295 | 0.20 | 42 | D | 24 | 295 | 0.20 | 42 | D | 24 |
| NBL | 74 | 0.30 | 21 | C | 9 | 77 | 0.33 | 22 | C | 9 | 83 | 0.47 | 32 | C | 14 |
| NBT | 927 | 0.79 | 35 | D | 158 | 959 | 0.85 | 39 | D | 167 | 1017 | 0.90 | 41 | D | 185 |
| NBR | 191 | 0.21 | 21 | C | 29 | 198 | 0.22 | 22 | C | 30 | 208 | 0.24 | 18 | B | 31 |
| SBL | 335 | 0.80 | 38 | D | 111 | 347 | 0.84 | 45 | D | 129 | 347 | 0.85 | 50 | D | 134 |
| SBTR | 960 | 0.58 | 23 | C | 124 | 993 | 0.61 | 23 | C | 129 | 1225 | 0.74 | 27 | C | 174 |
| PM | Existing | | | | | Future Background | | | | | Future Total | | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.86 | 38 | D | - | - | 0.90 | 40 | D | - | - | 0.93 | 44 | D | - |
| EBL | 142 | 0.59 | 37 | D | 43 | 147 | 0.62 | 38 | D | 44 | 147 | 0.62 | 38 | D | 44 |
| EBT | 379 | 0.48 | 44 | D | 62 | 392 | 0.49 | 44 | D | 64 | 392 | 0.49 | 44 | D | 64 |
| EBR | 96 | 0.06 | 40 | D | 7 | 99 | 0.07 | 39 | D | 8 | 101 | 0.07 | 39 | D | 8 |
| WBL | 253 | 0.87 | 65 | E | 83 | 262 | 0.90 | 72 | E | 91 | 263 | 0.91 | 73 | E | 92 |
| WBT | 561 | 0.80 | 56 | E | 97 | 580 | 0.81 | 57 | E | 101 | 580 | 0.81 | 57 | E | 101 |
| WBR | 409 | 0.57 | 50 | D | 71 | 423 | 0.63 | 51 | D | 79 | 423 | 0.64 | 52 | D | 80 |
| NBL | 99 | 0.48 | 27 | C | 16 | 102 | 0.53 | 32 | C | 20 | 120 | 0.63 | 41 | D | 34 |
| NBT | 1055 | 0.78 | 27 | C | 156 | 1092 | 0.82 | 28 | C | 170 | 1299 | 0.97 | 44 | D | 250 |
| NBR | 167 | 0.13 | 11 | B | 7 | 173 | 0.13 | 10 | B | 7 | 212 | 0.21 | 8 | A | 7 |
| SBL | 289 | 0.85 | 50 | D | 101 | 299 | 0.90 | 62 | E | 114 | 299 | 0.93 | 74 | E | 120 |
| SBTR | 1171 | 0.70 | 28 | C | 162 | 1211 | 0.72 | 29 | C | 170 | 1233 | 0.74 | 30 | C | 175 |

Under existing conditions, most movements at the intersection of Wonderland Road South and Commissioners Road West are operating well and experiencing an acceptable LOS D or better. The primary exception is the westbound left during the AM and PM peak hour, along with the westbound through during the PM peak hour, which experience LOS E while maintaining limited capacity.

Under future background conditions, movements are expected to experience reduced capacity and increased delay due to the growth in corridor traffic. The southbound left is added to the list of critical movements as it experiences LOS E and has limited capacity.

Under future total conditions, the intersection is expected to largely operate similar to future background conditions. The westbound left has a V/C above 1.0 during the AM peak hour; signal optimization is recommended and discussed below. The northbound through is deemed critical

during both peak hours but is expected to maintain capacity and experience an acceptable LOS D.

Signal optimization is recommended during the weekday AM peak hour to reallocate green time to the westbound left advanced phase. The existing and proposed signal timing is provided in **Figure 6-1** and **Figure 6-2**.

Figure 6-1: Existing AM Peak Hour Signal Timing



Figure 6-2: Proposed AM Peak Hour Signal Timing



As illustrated in **Table 6-2**, optimization is expected to improve overall intersection operations and the westbound left will maintain a V/C below 1.0. No further changes are recommended at this intersection.

Table 6-2: Optimized Intersection Capacity Analysis - Wonderland Rd S & Commissioners Rd W (AM)

| AM | Future Total | | | | Future Total (Optimized) | | | |
|----------------|--------------|-------------|------------|----------|--------------------------|-------------|-----------|----------|
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| Overall | - | 0.97 | 44 | D | - | 0.96 | 44 | D |
| EBL | 229 | 0.72 | 45 | D | 229 | 0.68 | 41 | D |
| EBT | 468 | 0.75 | 51 | D | 468 | 0.75 | 51 | D |
| EBR | 118 | 0.08 | 41 | D | 118 | 0.08 | 41 | D |
| WBL | 256 | 1.09 | 125 | F | 256 | 0.98 | 85 | F |
| WBT | 286 | 0.49 | 45 | D | 286 | 0.47 | 44 | D |
| WBR | 295 | 0.20 | 42 | D | 295 | 0.21 | 41 | D |
| NBL | 88 | 0.47 | 35 | D | 88 | 0.50 | 35 | D |
| NBT | 1057 | 0.93 | 45 | D | 1057 | 0.98 | 54 | D |
| NBR | 213 | 0.25 | 17 | B | 213 | 0.26 | 18 | B |
| SBL | 347 | 0.85 | 50 | D | 347 | 0.86 | 50 | D |
| SBTR | 1219 | 0.76 | 28 | C | 1219 | 0.78 | 30 | C |

Table 6-3: Intersection Capacity Analysis – Wonderland Rd S & Village Green Ave (Signalized)

| AM | Existing | | | | | Future Background | | | | | Future Total | | | | |
|----------------|-----------|-------------|-----------|----------|------------|-------------------|-------------|-----------|----------|------------|--------------|-------------|-----------|----------|------------|
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.48 | 5 | A | - | - | 0.50 | 5 | A | - | - | 0.59 | 7 | A | - |
| EBL | 35 | 0.45 | 58 | E | 20 | 35 | 0.45 | 58 | E | 20 | 35 | 0.45 | 58 | E | 20 |
| EBTR | 50 | 0.24 | 54 | D | 19 | 50 | 0.24 | 54 | D | 19 | 50 | 0.24 | 54 | D | 19 |
| WBL | 26 | 0.33 | 56 | E | 16 | 26 | 0.33 | 56 | E | 16 | 26 | 0.33 | 56 | E | 16 |
| WBTR | 60 | 0.15 | 54 | D | 16 | 60 | 0.15 | 54 | D | 16 | 60 | 0.15 | 54 | D | 16 |
| NBL | 8 | 0.03 | 1 | A | 1 | 8 | 0.03 | 1 | A | 1 | 8 | 0.05 | 2 | A | 1 |
| NBTR | 1151 | 0.42 | 1 | A | 21 | 1190 | 0.43 | 1 | A | 21 | 1263 | 0.45 | 3 | A | 39 |
| SBL | 44 | 0.14 | 2 | A | 3 | 44 | 0.14 | 2 | A | 3 | 44 | 0.16 | 3 | A | 4 |
| SBTR | 1331 | 0.48 | 2 | A | 43 | 1376 | 0.50 | 3 | A | 53 | 1668 | 0.60 | 4 | A | 102 |
| PM | Existing | | | | | Future Background | | | | | Future Total | | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.52 | 6 | A | - | - | 0.54 | 6 | A | - | - | 0.59 | 7 | A | - |
| EBL | 17 | 0.20 | 58 | E | 13 | 17 | 0.20 | 58 | E | 13 | 17 | 0.20 | 58 | E | 13 |
| EBTR | 37 | 0.17 | 57 | E | 16 | 37 | 0.17 | 57 | E | 16 | 37 | 0.17 | 57 | E | 16 |
| WBL | 46 | 0.55 | 65 | E | 25 | 46 | 0.55 | 65 | E | 25 | 46 | 0.55 | 65 | E | 25 |
| WBTR | 58 | 0.20 | 58 | E | 19 | 58 | 0.20 | 58 | E | 19 | 58 | 0.21 | 58 | E | 19 |
| NBL | 29 | 0.13 | 3 | A | 3 | 29 | 0.13 | 3 | A | 2 | 29 | 0.14 | 3 | A | 2 |
| NBTR | 1337 | 0.48 | 4 | A | 124 | 1381 | 0.49 | 4 | A | 129 | 1647 | 0.59 | 7 | A | 146 |
| SBL | 33 | 0.13 | 2 | A | 2 | 33 | 0.14 | 2 | A | 2 | 33 | 0.19 | 3 | A | 2 |
| SBTR | 1416 | 0.52 | 2 | A | 33 | 1464 | 0.54 | 2 | A | 35 | 1489 | 0.55 | 2 | A | 35 |

Under existing conditions, most movements at the intersection of Wonderland Road South and Village Green Avenue are operating well and experiencing an acceptable LOS D or better. The primary exception is the eastbound and westbound lefts during the AM and PM peak hour, along with the eastbound and westbound throughs during the PM peak hour, which experience LOS E while maintaining available capacity. These results are attributable to the existing signal timing plan, which allocates the majority of green time to the major north-south phases.

Under future background conditions, no significant changes are anticipated to intersection operations.

Under future total conditions, the intersection is expected to largely operate similar to future background conditions. No critical movements are added and all movements are expected to experience a similar V/C and LOS.

Table 6-4: Intersection Capacity Analysis – Wonderland Rd S & South Mall Access (Signalized)

| AM | Existing | | | | | Future Background | | | | | Future Total | | | | |
|----------------|----------|-------------|-----------|----------|------------|-------------------|-------------|-----------|----------|------------|--------------|-------------|-----------|----------|------------|
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.46 | 4 | A | - | - | 0.48 | 4 | A | - | - | 0.53 | 6 | A | - |
| EBLT | 52 | 0.59 | 63 | E | 27 | 52 | 0.60 | 63 | E | 27 | 106 | 0.68 | 60 | E | 46 |
| EBR | 11 | 0.01 | 51 | D | 3 | 11 | 0.01 | 51 | D | 3 | 10 | 0.01 | 45 | D | 2 |
| WBLTR | 15 | 0.07 | 51 | D | 9 | 15 | 0.07 | 51 | D | 9 | 15 | 0.04 | 45 | D | 8 |
| NBL | 11 | 0.04 | 2 | A | 1 | 11 | 0.04 | 2 | A | 1 | 21 | 0.09 | 3 | A | 2 |
| NBTR | 1068 | 0.42 | 2 | A | 27 | 1105 | 0.43 | 2 | A | 27 | 1112 | 0.47 | 4 | A | 37 |
| SBL | 8 | 0.03 | 1 | A | 1 | 8 | 0.03 | 1 | A | 1 | 8 | 0.03 | 3 | A | 1 |
| SBT | 1157 | 0.45 | 2 | A | 20 | 1197 | 0.47 | 2 | A | 21 | 1197 | 0.50 | 4 | A | 56 |
| SBR | 75 | 0.06 | 0 | A | 1 | 75 | 0.06 | 0 | A | 1 | 328 | 0.27 | 2 | A | 8 |
| PM | Existing | | | | | Future Background | | | | | Future Total | | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.55 | 7 | A | - | - | 0.57 | 7 | A | - | - | 0.73 | 19 | B | - |
| EBLT | 114 | 0.70 | 65 | E | 50 | 114 | 0.70 | 65 | E | 50 | 318 | 0.97 | 90 | F | 151 |
| EBR | 42 | 0.03 | 49 | D | 11 | 42 | 0.03 | 49 | D | 11 | 35 | 0.02 | 37 | D | 9 |
| WBLTR | 8 | 0.01 | 49 | D | 1 | 8 | 0.01 | 49 | D | 1 | 8 | 0.01 | 37 | D | 1 |
| NBL | 28 | 0.12 | 2 | A | 2 | 28 | 0.13 | 3 | A | 2 | 18 | 0.12 | 5 | A | 2 |
| NBTR | 1286 | 0.49 | 3 | A | 30 | 1330 | 0.50 | 3 | A | 31 | 1327 | 0.59 | 6 | A | 32 |
| SBL | 13 | 0.05 | 2 | A | 1 | 13 | 0.06 | 2 | A | 1 | 13 | 0.08 | 6 | A | 2 |
| SBT | 1349 | 0.53 | 5 | A | 126 | 1396 | 0.54 | 5 | A | 130 | 1397 | 0.64 | 15 | B | 185 |
| SBR | 50 | 0.04 | 1 | A | 1 | 50 | 0.04 | 1 | A | 1 | 91 | 0.08 | 4 | A | 6 |

Under existing conditions, most movements at the intersection of Wonderland Road South and the South Mall Access are operating well and experiencing an acceptable LOS D or better. The only exception is the eastbound left/through during the AM and PM peak hour, which experience LOS E while maintaining available capacity. These results are attributable to the existing signal timing plan, which allocates the majority of green time to the major north-south phases.

Under future background conditions, no significant changes are anticipated to intersection operations.

Under future total conditions, the intersection is expected to largely operate similar to future background conditions. No critical movements are added and most movements are expected to experience a similar V/C and LOS. The sole exception is the eastbound left/through movement, which experiences reduced capacity and LOS F during the PM peak hour due to the addition of site traffic. Signal timing optimization is recommended to improve intersection operations, as discussed below.

The reallocation of green time to the eastbound left/through is recommended to improve intersection operations. The existing and proposed signal timing is provided in **Figure 6-3** and **Figure 6-4**.

Figure 6-3: Existing AM Peak Hour Signal Timing



Figure 6-4: Existing AM Peak Hour Signal Timing



As detailed in **Table 6-5**, signal optimization is expected to improve operations without impacting north-south traffic.

Table 6-5: Optimized Intersection Capacity Analysis - Wonderland Rd S & South Mall Access (PM)

| PM | Future Total | | | | Future Total (Optimized) | | | | |
|---------|--------------|------------|-------------|-----------|--------------------------|------------|-------------|-----------|----------|
| | Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| Overall | - | - | 0.73 | 19 | B | - | 0.74 | 18 | B |
| EBLT | | 318 | 0.97 | 90 | F | 318 | 0.91 | 76 | E |
| EBR | | 35 | 0.02 | 37 | D | 35 | 0.08 | 11 | D |
| WBLTR | | 8 | 0.01 | 37 | D | 8 | 0.02 | 3 | D |
| NBL | | 18 | 0.12 | 5 | A | 18 | 0.13 | 8 | A |
| NBTR | | 1327 | 0.59 | 6 | A | 1327 | 0.61 | 8 | A |
| SBL | | 13 | 0.08 | 6 | A | 13 | 0.09 | 7 | A |
| SBT | | 1397 | 0.64 | 15 | B | 1397 | 0.66 | 15 | B |
| SBR | | 91 | 0.08 | 4 | A | 91 | 0.10 | 2 | A |

Table 6-6: Intersection Capacity Analysis – Wonderland Rd S & Viscount Rd (Signalized)

| AM | Existing | | | | | Future Background | | | | | Future Total | | | | |
|----------------|-----------------|-------------|-----------|----------|------------|--------------------------|-------------|-----------|----------|------------|---------------------|-------------|-----------|----------|------------|
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.67 | 27 | C | - | - | 0.69 | 27 | C | - | - | 0.78 | 33 | C | - |
| EBL | 153 | 0.79 | 59 | E | 60 | 153 | 0.79 | 59 | E | 60 | 153 | 0.78 | 59 | E | 59 |
| EBT | 131 | 0.38 | 39 | D | 44 | 131 | 0.38 | 39 | D | 44 | 120 | 0.36 | 39 | D | 40 |
| EBR | 155 | 0.13 | 48 | D | 8 | 155 | 0.13 | 48 | D | 8 | 176 | 0.17 | 45 | D | 10 |
| WBL | 71 | 0.28 | 33 | C | 22 | 71 | 0.28 | 33 | C | 22 | 71 | 0.28 | 33 | C | 23 |
| WBTR | 245 | 0.23 | 33 | C | 24 | 245 | 0.23 | 33 | C | 24 | 217 | 0.20 | 33 | C | 21 |
| NBL | 139 | 0.56 | 29 | C | 46 | 139 | 0.58 | 32 | C | 48 | 237 | 0.68 | 42 | D | 113 |
| NBT | 814 | 0.53 | 18 | B | 98 | 842 | 0.54 | 19 | B | 110 | 861 | 0.55 | 21 | C | 127 |
| NBR | 42 | 0.04 | 14 | B | 1 | 42 | 0.04 | 14 | B | 2 | 42 | 0.04 | 14 | B | 3 |
| SBL | 60 | 0.23 | 15 | B | 10 | 60 | 0.24 | 15 | B | 10 | 60 | 0.25 | 22 | C | 10 |
| SBT | 972 | 0.67 | 25 | C | 166 | 1006 | 0.69 | 25 | C | 173 | 1005 | 0.86 | 39 | D | 174 |
| SBR | 147 | 0.17 | 15 | B | 13 | 147 | 0.17 | 15 | B | 14 | 147 | 0.20 | 21 | C | 12 |
| PM | Existing | | | | | Future Background | | | | | Future Total | | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.56 | 23 | C | - | - | 0.57 | 23 | C | - | - | 0.56 | 21 | C | - |
| EBL | 106 | 0.69 | 67 | E | 48 | 106 | 0.69 | 67 | E | 48 | 106 | 0.68 | 64 | E | 48 |
| EBT | 143 | 0.57 | 56 | E | 59 | 143 | 0.57 | 56 | E | 59 | 106 | 0.43 | 53 | D | 42 |
| EBR | 157 | 0.11 | 72 | E | 20 | 157 | 0.11 | 72 | E | 20 | 228 | 0.27 | 61 | E | 28 |
| WBL | 73 | 0.37 | 45 | D | 28 | 73 | 0.37 | 45 | D | 28 | 73 | 0.32 | 44 | D | 27 |
| WBTR | 188 | 0.21 | 43 | D | 24 | 188 | 0.21 | 43 | D | 24 | 161 | 0.17 | 43 | D | 20 |
| NBL | 157 | 0.47 | 19 | B | 34 | 157 | 0.48 | 23 | C | 32 | 150 | 0.47 | 20 | C | 29 |
| NBT | 1103 | 0.52 | 16 | B | 114 | 1141 | 0.54 | 17 | B | 118 | 1128 | 0.53 | 16 | B | 117 |
| NBR | 59 | 0.04 | 38 | D | 2 | 59 | 0.04 | 39 | D | 1 | 59 | 0.04 | 37 | D | 1 |
| SBL | 114 | 0.35 | 11 | B | 12 | 114 | 0.36 | 12 | B | 12 | 114 | 0.36 | 9 | A | 11 |
| SBT | 1118 | 0.55 | 12 | B | 178 | 1157 | 0.57 | 13 | B | 193 | 1151 | 0.56 | 9 | A | 96 |
| SBR | 116 | 0.09 | 5 | A | 6 | 116 | 0.09 | 5 | A | 6 | 116 | 0.09 | 5 | A | 6 |

Under existing conditions, most movements at the intersection of Wonderland Road South and Viscount Road are operating well and experiencing an acceptable LOS D or better. The primary exception is the eastbound left during the AM and PM peak hour, along with the eastbound through and right movements during the PM peak hour, which experience LOS E while maintaining available capacity. These results are attributable to the existing signal timing plan, which allocates the majority of green time to the major north-south phases.

Under future background conditions, no significant changes are anticipated to intersection operations.

Under future total conditions, the intersection is expected to largely operate similar to future background conditions. No intersection modifications are recommended.

Table 6-7: Intersection Capacity Analysis – Wonderland Rd S & Southdale Rd W (Signalized)

| AM | Existing | | | | | Future Background | | | | | Future Total | | | | |
|----------------|------------|-------------|-----------|----------|------------|-------------------|-------------|-----------|----------|------------|--------------|-------------|-----------|----------|------------|
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.66 | 28 | C | - | - | 0.69 | 29 | C | - | - | 0.74 | 33 | C | - |
| EBL | 99 | 0.75 | 60 | E | 41 | 102 | 0.77 | 63 | E | 43 | 123 | 0.93 | 96 | F | 47 |
| EBT | 314 | 0.63 | 50 | D | 58 | 325 | 0.63 | 49 | D | 59 | 325 | 0.63 | 49 | D | 59 |
| EBR | 37 | 0.03 | 43 | D | 0 | 38 | 0.03 | 43 | D | 0 | 38 | 0.03 | 43 | D | 0 |
| WBL | 72 | 0.41 | 42 | D | 28 | 74 | 0.42 | 42 | D | 28 | 74 | 0.42 | 42 | D | 28 |
| WBTR | 441 | 0.64 | 51 | D | 51 | 457 | 0.65 | 51 | D | 53 | 473 | 0.66 | 51 | D | 54 |
| NBL | 56 | 0.18 | 14 | B | 11 | 58 | 0.20 | 15 | B | 11 | 58 | 0.21 | 17 | B | 11 |
| NBTR | 518 | 0.38 | 21 | C | 74 | 536 | 0.40 | 22 | C | 80 | 616 | 0.49 | 26 | C | 99 |
| SBL | 318 | 0.60 | 22 | C | 68 | 329 | 0.63 | 26 | C | 74 | 330 | 0.65 | 38 | D | 72 |
| SBTR | 772 | 0.43 | 8 | A | 46 | 799 | 0.45 | 8 | A | 47 | 819 | 0.46 | 9 | A | 50 |
| PM | Existing | | | | | Future Background | | | | | Future Total | | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.82 | 39 | D | - | - | 0.87 | 41 | D | - | - | 0.86 | 41 | D | - |
| EBL | 170 | 0.82 | 59 | E | 55 | 176 | 0.85 | 62 | E | 61 | 175 | 0.84 | 62 | E | 61 |
| EBT | 406 | 0.55 | 47 | D | 65 | 420 | 0.55 | 46 | D | 66 | 420 | 0.55 | 46 | D | 66 |
| EBR | 82 | 0.06 | 41 | D | 11 | 85 | 0.06 | 40 | D | 12 | 85 | 0.06 | 40 | D | 12 |
| WBL | 203 | 0.81 | 61 | E | 59 | 210 | 0.83 | 63 | E | 60 | 210 | 0.83 | 64 | E | 60 |
| WBTR | 644 | 0.78 | 58 | E | 76 | 667 | 0.79 | 57 | E | 79 | 658 | 0.79 | 57 | E | 78 |
| NBL | 105 | 0.31 | 22 | C | 23 | 109 | 0.34 | 23 | C | 24 | 109 | 0.36 | 23 | C | 24 |
| NBTR | 969 | 0.74 | 39 | D | 160 | 1003 | 0.80 | 42 | D | 177 | 992 | 0.79 | 42 | D | 173 |
| SBL | 321 | 0.77 | 58 | E | 106 | 332 | 0.82 | 64 | E | 127 | 335 | 0.81 | 67 | E | 126 |
| SBTR | 860 | 0.51 | 9 | A | 25 | 890 | 0.54 | 10 | A | 32 | 953 | 0.58 | 11 | B | 38 |

Under existing conditions, most movements at the intersection of Wonderland Road South and Southdale Road West are operating well and experiencing an acceptable LOS D or better. The primary exception is the eastbound left during the AM and PM peak hour, along with the westbound left/through/right and southbound left movements during the PM peak hour, which experience LOS E while maintaining available capacity.

Under future background conditions, movements are expected to experience reduced capacity and increased delay due to the growth in corridor traffic. No additional critical movements are expected to be added.

Under future total conditions, the intersection is expected to largely operate similar to future background conditions. The eastbound left experiences increased delay during the AM peak hour but maintains available capacity. No intersection modifications are recommended.

Table 6-8: Intersection Capacity Analysis – School Access/West Mall Access & Viscount Rd (Signalized)

| AM | Existing | | | | | Future Background | | | | | Future Total | | | | |
|----------------|----------|-------------|-----------|----------|------------|-------------------|-------------|-----------|----------|------------|--------------|-------------|-----------|----------|------------|
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.38 | 18 | B | - | - | 0.38 | 18 | B | - | - | 0.38 | 22 | C | - |
| EBL | 69 | 0.19 | 15 | B | 14 | 69 | 0.19 | 15 | B | 14 | 40 | 0.11 | 14 | B | 10 |
| EBTR | 361 | 0.68 | 23 | C | 59 | 361 | 0.68 | 23 | C | 59 | 357 | 0.67 | 23 | C | 58 |
| WBL | 110 | 0.60 | 30 | C | 29 | 110 | 0.60 | 30 | C | 29 | 110 | 0.59 | 32 | C | 34 |
| WBT | 73 | 0.14 | 14 | B | 13 | 73 | 0.14 | 14 | B | 13 | 70 | 0.14 | 15 | B | 16 |
| WBR | 74 | 0.06 | 18 | B | 3 | 74 | 0.06 | 18 | B | 3 | 165 | 0.13 | 42 | D | 24 |
| NBL | 68 | 0.17 | 10 | A | 10 | 68 | 0.17 | 10 | A | 10 | 68 | 0.17 | 10 | A | 10 |
| NBTR | 92 | 0.11 | 9 | A | 4 | 92 | 0.11 | 9 | A | 4 | 90 | 0.11 | 9 | A | 3 |
| SBLT | 55 | 0.11 | 9 | A | 9 | 55 | 0.11 | 9 | A | 9 | 63 | 0.13 | 10 | A | 10 |
| SBR | 23 | 0.02 | 9 | A | 2 | 23 | 0.02 | 9 | A | 2 | 12 | 0.01 | 9 | A | 0 |
| PM | Existing | | | | | Future Background | | | | | Future Total | | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue | Vol | V/C | Delay (s) | LOS | 95th Queue |
| Overall | - | 0.27 | 14 | B | - | - | 0.27 | 14 | B | - | - | 0.32 | 15 | B | - |
| EBL | 43 | 0.12 | 15 | B | 10 | 43 | 0.12 | 15 | B | 10 | 22 | 0.06 | 14 | B | 6 |
| EBTR | 173 | 0.26 | 16 | B | 27 | 173 | 0.26 | 16 | B | 27 | 170 | 0.25 | 16 | B | 27 |
| WBL | 32 | 0.08 | 13 | B | 8 | 32 | 0.08 | 13 | B | 8 | 32 | 0.08 | 14 | B | 8 |
| WBT | 267 | 0.41 | 17 | B | 44 | 267 | 0.41 | 17 | B | 45 | 255 | 0.39 | 18 | B | 40 |
| WBR | 66 | 0.05 | 14 | B | 7 | 66 | 0.05 | 14 | B | 7 | 62 | 0.04 | 18 | B | 7 |
| NBL | 52 | 0.09 | 10 | B | 9 | 52 | 0.09 | 10 | B | 9 | 52 | 0.09 | 10 | B | 9 |
| NBTR | 49 | 0.03 | 10 | A | 5 | 49 | 0.03 | 10 | A | 5 | 49 | 0.03 | 10 | A | 5 |
| SBLT | 92 | 0.16 | 11 | B | 15 | 92 | 0.16 | 11 | B | 15 | 158 | 0.27 | 12 | B | 24 |
| SBR | 69 | 0.05 | 10 | A | 6 | 69 | 0.05 | 10 | A | 6 | 34 | 0.02 | 10 | A | 3 |

Under existing and future conditions, all movements at the School/West Mall Access and Viscount Road are operating well and experiencing an acceptable LOS C or better. No capacity constraints are identified. The results indicate that site access and egress movements are expected to continue functioning well at this location.

6.2 Unsignalized Intersection Analysis

The following section discusses the intersection capacity analysis results for unsignalized intersections.

Table 6-9: Intersection Capacity Analysis – Wonderland Rd S & North Mall Access (Unsignalized)

| AM | Existing | | | | Future Background | | | | Future Total | | | |
|-------|----------|------|-----------|-----|-------------------|------|-----------|-----|--------------|------|-----------|-----|
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBL | 3 | 0.04 | 60 | F | 3 | 0.05 | 64 | F | 37 | 0.65 | 149 | F |
| EBR | 10 | 0.02 | 13 | B | 10 | 0.02 | 13 | B | 25 | 0.05 | 13 | B |
| WBLTR | 33 | 0.13 | 21 | C | 33 | 0.13 | 22 | C | 33 | 0.15 | 24 | C |
| NBL | 20 | 0.04 | 13 | B | 20 | 0.04 | 13 | B | 52 | 0.14 | 17 | C |
| SBL | 16 | 0.03 | 11 | B | 16 | 0.03 | 11 | B | 16 | 0.03 | 11 | B |
| PM | Existing | | | | Future Background | | | | Future Total | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBL | 8 | 0.12 | 69 | F | 8 | 0.13 | 73 | F | 71 | 1.30 | 348 | F |
| EBR | 26 | 0.05 | 13 | B | 26 | 0.05 | 13 | B | 27 | 0.06 | 13 | B |
| WBLTR | 26 | 0.09 | 18 | C | 26 | 0.09 | 19 | C | 26 | 0.10 | 21 | C |
| NBL | 14 | 0.03 | 14 | B | 14 | 0.03 | 14 | B | 11 | 0.03 | 15 | B |
| SBL | 25 | 0.05 | 12 | B | 25 | 0.05 | 13 | B | 25 | 0.06 | 14 | B |

Under existing and future conditions, most movements at the North Mall Access on Wonderland Road South are operating well and experiencing an acceptable LOS C or better. The sole exception is the eastbound left, which experiences LOS F during both peak hours due to the limited gaps in north-south traffic along Wonderland Road South. The addition of site traffic is expected to result in increased delay and reduced capacity for this movement.

Given the available routing alternatives, it is expected that some site traffic will divert to the signalized south site access on Wonderland Road. The analysis results therefore represent a conservative estimate that assumes no change to site traffic distribution.

As part of the development submission process, intersection modifications will be evaluated to ensure safe and effective operations at this location, including restricting the left-out movement through the extension of the existing centre median or converting the intersection to right-in/right-out. This evaluation will need to consider impacts to the existing residential access on the east side of Wonderland Road, where all movements are currently permitted.

Table 6-10: Intersection Capacity Analysis – School Access/East Mall Access & Viscount Rd (Unsignalized)

| AM | Existing | | | | Future Background | | | | Future Total | | | |
|------------|-----------|-------------|-----------|----------|-------------------|-------------|-----------|----------|--------------|-------------|------------|----------|
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBL | 10 | 0.01 | 8 | A | 10 | 0.01 | 8 | A | 21 | 0.02 | 9 | A |
| WBL | 170 | 0.15 | 9 | A | 170 | 0.15 | 9 | A | 170 | 0.16 | 9 | A |
| NBL | 13 | 0.08 | 30 | D | 13 | 0.08 | 30 | D | 13 | 0.13 | 47 | E |
| NBTR | 145 | 0.24 | 13 | B | 145 | 0.24 | 13 | B | 152 | 0.34 | 17 | C |
| SBL | 16 | 0.15 | 44 | E | 16 | 0.15 | 44 | E | 29 | 0.45 | 100 | F |
| SBR | 10 | 0.02 | 13 | B | 10 | 0.02 | 13 | B | 10 | 0.03 | 16 | C |
| PM | Existing | | | | Future Background | | | | Future Total | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBL | 6 | 0.01 | 8 | A | 6 | 0.01 | 8 | A | 3 | 0.00 | 8 | A |
| WBL | 21 | 0.02 | 8 | A | 21 | 0.02 | 8 | A | 21 | 0.02 | 8 | A |
| NBL | 15 | 0.05 | 17 | C | 15 | 0.05 | 17 | C | 15 | 0.05 | 18 | C |
| NBTR | 38 | 0.05 | 10 | B | 38 | 0.05 | 10 | B | 38 | 0.06 | 11 | B |
| SBL | 66 | 0.21 | 20 | C | 66 | 0.21 | 20 | C | 33 | 0.12 | 20 | C |
| SBR | 26 | 0.04 | 11 | B | 26 | 0.04 | 11 | B | 13 | 0.02 | 11 | B |

Under existing and future conditions, most movements at the School/East Mall Access on Viscount Road are operating well and experiencing an acceptable LOS C or better. The sole exception is the southbound left, which experiences LOS F during the AM peak hour due to the limited gaps in east-west traffic along Viscount Road. The addition of site traffic is expected to result in increased delay and reduced capacity for this movement.

Given the available routing alternatives, it is expected that some site traffic will divert to the signalized site access on Viscount Road. The analysis results therefore represent a conservative estimate that assumes no change to site traffic distribution. No intersection modifications are recommended.

Table 6-11: Intersection Capacity Analysis – Viscount Rd & Woodcrest Blvd (Unsignalized)

| AM | Existing | | | | Future Background | | | | Future Total | | | |
|------|----------|------|-----------|-----|-------------------|------|-----------|-----|--------------|------|-----------|-----|
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBLT | 14 | 0.01 | 0 | A | 14 | 0.01 | 0 | A | 14 | 0.01 | 0 | A |
| SBLR | 95 | 0.16 | 12 | B | 95 | 0.16 | 12 | B | 95 | 0.16 | 12 | B |
| PM | Existing | | | | Future Background | | | | Future Total | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBLT | 25 | 0.02 | 1 | A | 25 | 0.02 | 1 | A | 25 | 0.02 | 1 | A |
| SBLR | 58 | 0.09 | 11 | B | 58 | 0.09 | 11 | B | 58 | 0.08 | 11 | B |

Under existing and future conditions, all movements at the intersection of Viscount Road and Woodcrest are operating well and experiencing an acceptable LOS B or better. No capacity constraints are identified.

Table 6-12: Intersection Capacity Analysis – West Mall Access & Internal Mall Road (Unsignalized)

| AM | Existing | | | | Future Total | | | |
|-------|----------|------|-----------|-----|--------------|------|-----------|-----|
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBLTR | 42 | 0.06 | 8 | A | 40 | 0.06 | 8 | A |
| WBLTR | 91 | 0.13 | 9 | A | 193 | 0.27 | 9 | A |
| NBL | 61 | 0.11 | 8 | A | 106 | 0.20 | 9 | A |
| NBTR | 86 | 0.13 | 8 | | 100 | 0.17 | 8 | |
| SBLTR | 6 | 0.01 | 8 | A | 59 | 0.10 | 9 | A |
| PM | Existing | | | | Future Total | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBLTR | 100 | 0.13 | 8 | A | 110 | 0.15 | 8 | A |
| WBLTR | 60 | 0.09 | 8 | A | 54 | 0.08 | 8 | A |
| NBL | 63 | 0.11 | 8 | A | 49 | 0.09 | 8 | A |
| NBTR | 47 | 0.07 | 7 | | 35 | 0.12 | 7 | |
| SBLTR | 75 | 0.10 | 8 | A | 217 | 0.32 | 10 | A |

Table 6-13: Intersection Capacity Analysis – East Mall Access & Internal Mall Road (Unsignalized)

| AM | Existing | | | | Future Total | | | |
|------|----------|------|-----------|-----|--------------|------|-----------|-----|
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBTR | 54 | 0.13 | 8 | A | 66 | 0.09 | 8 | A |
| WBLT | 87 | 0.19 | 8 | A | 188 | 0.25 | 9 | A |
| NBL | 41 | 0.13 | 9 | A | 24 | 0.05 | 8 | A |
| NBR | 21 | 0.05 | 6 | | 12 | 0.02 | 6 | |
| PM | Existing | | | | Future Total | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBTR | 116 | 0.14 | 8 | A | 176 | 0.21 | 8 | A |
| WBLT | 87 | 0.11 | 8 | A | 66 | 0.08 | 8 | A |
| NBL | 24 | 0.04 | 8 | A | 12 | 0.02 | 9 | A |
| NBR | 43 | 0.05 | 6 | | 22 | 0.03 | 6 | |

Table 6-14: Intersection Capacity Analysis – South Mall Access & Internal Mall Road (Unsignalized)

| AM | Existing | | | | Future Total | | | |
|------|----------|------|-----------|-----|--------------|------|-----------|-----|
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| WBL | 83 | 0.13 | 9 | A | 200 | 0.33 | 10 | A |
| WBR | 4 | - | 6 | | 154 | 0.20 | 7 | |
| NBTR | 59 | 0.07 | 8 | A | 72 | 0.10 | 8 | A |
| SBLT | 32 | 0.04 | 8 | A | 56 | 0.09 | 9 | A |
| PM | Existing | | | | Future Total | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| WBL | 48 | 0.10 | 8 | A | 60 | 0.13 | 9 | A |
| WBR | 30 | 0.05 | 7 | | 50 | 0.09 | 7 | |
| NBTR | 109 | 0.16 | 8 | A | 189 | 0.28 | 9 | A |
| SBLT | 114 | 0.19 | 9 | A | 185 | 0.32 | 10 | B |

Table 6-15: Intersection Capacity Analysis – North Mall Access & Internal Mall Road (Unsignalized)

| AM | Existing | | | | Future Total | | | |
|------|----------|------|-----------|-----|--------------|------|-----------|-----|
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBTR | 13 | 0.02 | 7 | A | 72 | 0.11 | 8 | A |
| WBL | 25 | 0.05 | 7 | A | 15 | 0.03 | 8 | A |
| WBT | 69 | 0.11 | 7 | | 126 | 0.23 | 8 | |
| NBLR | 8 | 0.01 | 7 | A | 156 | 0.26 | 9 | A |
| PM | Existing | | | | Future Total | | | |
| Mvmt | Vol | V/C | Delay (s) | LOS | Vol | V/C | Delay (s) | LOS |
| EBTR | 35 | 0.05 | 7 | A | 231 | 0.32 | 8 | A |
| WBL | 48 | 0.09 | 7 | A | 25 | 0.05 | 8 | A |
| WBT | 31 | 0.05 | 7 | | 36 | 0.06 | 7 | |
| NBLR | 21 | 0.03 | 7 | A | 43 | 0.05 | 8 | A |

As detailed in the tables above, the internal site intersections are expected to operate well under future conditions. No internal capacity constraints are identified. Internal site circulation and intersection design will be detailed and refined through future development submissions.

6.3 Conclusions

The analysis results indicate that traffic associated with the development concept can be accommodated by the surrounding road network. Signal optimization is recommended at the intersection of Wonderland Road South and Commissioners Road West during the AM peak hour and the south site access on Wonderland Road South during the PM peak hour to improve intersection operations; no further signal timing changes or infrastructure modifications are required.

Additional evaluation of the configuration of the site accesses on Wonderland Road South and Viscount Road will be provided through the development submission process to ensure effective and safe operations.

7 Vehicular Parking Review

This section reviews the proposed parking supply for the redevelopment and compares it to the parking requirements specified in the City’s Zoning By-law. The vehicle parking requirements for the proposed development have been determined based on the parking rates prescribed by City of London Zoning By-law Z.-1 for Parking Standards Area 3. The parking requirements for the development concept are summarized in **Table 7-1**.

Table 7-1: Zoning By-law Z.-1 Vehicular Parking Requirements

| Land Use | Units/GFA | Minimum Parking Rate (ZBL Z.-1) | Required Parking Supply |
|----------------------------------|-----------------------|---------------------------------|-------------------------|
| Residential – Apartment | 876 | 0.5 sp./unit | 438 |
| Residential - Townhouse | 24 | 1 sp./unit | 24 |
| Residential Sub-Total | | | 462 |
| Shopping Centre | 68,639 m ² | 1 sp./50m ² GFA | 1,373 |
| Non-Residential Sub-Total | | | 1,373 |
| Grand Total | | | 1,835 |

The applicant is proposing to provide parking at the following rates:

- ▶ Residential – Apartment: 0.75 sp./unit
- ▶ Residential – Townhouse: 1.25 sp./unit
- ▶ Shopping Centre: 1 sp./40 m²/unit

Residential visitors and office employees will be permitted to use the proposed commercial parking supply.

The existing mall surface and underground parking lot has a total of parking supply of 2,556 spaces, exceeding the by-law requirement associated with the development concept. The allocation of parking between the on-site land uses will be addressed at the SPA stage, considering development phasing and the replacement of surface parking with additional underground parking.

8 Transportation Demand Management (TDM) Plan

Transportation Demand Management (TDM) is a set of strategies that strive towards a more efficient transportation network by influencing travel behavior. Effective TDM measures can reduce vehicle usage and encourage people to engage in more sustainable methods of travel. The London Plan recognizes that TDM strategies can create a more efficient transportation system by promoting active modes of transport and introducing land-use policies supportive of transit-oriented development and intensification. Several strategies should be considered for the subject site to encourage the use of sustainable transportation modes and reduce vehicular travel demand.

The proposed TDM measures will be detailed and refined as part of the development submission process.

8.1 Pedestrian-Based Strategies

Implement a pedestrian-oriented land use strategy

The proposed development will ensure comfortable and convenient pedestrian connections to the external pedestrian network, with walkways leading to the surrounding sidewalks along Viscount Road, Woodcrest Boulevard and Wonderland Road South. Sidewalk connectivity to the public road network will provide convenient linkages for pedestrians, transit users, and cyclists to access the existing and proposed on-site land uses. The connected pedestrian network will encourage future residents to accomplish their daily trips by walking, biking or taking transit, thereby reducing automobile dependency. To further enhance the pedestrian realm and consider persons with mobility difficulties, internal pathways will be well lit with enhanced landscaping and minimal barriers to provide a permeable pedestrian corridor. These design interventions will help create a pleasant and safe pedestrian experience for all users.

8.2 Cycling-Based Strategies

Connection to existing bike facilities and provision of bicycle parking

The City of London Cycling Master Plan proposes new cycling facilities on all major roads surrounding the subject site, which will provide excellent connectivity to major destinations throughout the city. The proposed development will ensure convenient connections to the surrounding cycling network. In addition, short-term bicycle parking facilities will be located at-grade in highly visible and convenient areas close to building entrances for residents and visitors. Long-term bicycle parking will be provided in secured and weather-protected locations, such as storage rooms or bicycle locker rooms. The number and location of bicycle parking spaces will be delineated at the SPA stage.

Provide bicycle repair stand, tools, and maintenance information on-site

A significant barrier for some people considering cycling as their day-to-day mode of travel is cycling repair and maintenance. As such, a bicycle repair stand, tools, and basic information will

be provided on site to alleviate the stress of technical issues and promote cycling as a convenient travel option for residents.

Promote and increase cycling awareness

Information packages and communications will be provided in the building lobbies to increase cycling and multi-modal transport by encouraging active transportation and different travel demand management programs. These packages will also include educational material on the health and environmental benefits of cycling and walking, and will include maps of pedestrian, cycling and transit facilities in the surrounding area.

8.3 Transit-Based Strategies

Connection to the transit network

As previously noted, the study area is serviced by several London Transit routes that connect it to key destinations throughout the city including Downtown London, Western University, Fanshawe College, and the London VIA/GO train station. Bus stops are present within a short walking distance and directly on-site. The availability of transit within the area will allow future residents and visitors to experience convenient and reliable transit services and engage in non-auto modes of travel. Improvements to the existing on-site bus facilities to enhance transit operations will be considered as part of the development submission process.

8.4 Parking-Based Strategies

Provide unbundled parking for the subject site

Typically, the purchase of a residential unit is bundled with the provision of an on-site vehicle parking space. When parking is offered for free, commuters are encouraged to drive alone and rely less on public and active transportation. As such, the proposed development will provide unbundled parking whereby parking spaces will be sold separately from the purchase of each unit.

9 Conclusions and Recommendations

- ▶ The conceptual development framework consists of six mixed-use buildings containing a total of 900 residential units. An additional 26,272 m² of commercial GFA will be added on-site, including the introduction of office uses. A portion of the existing mall space will be converted from retail to office as part of the redevelopment.
- ▶ The purpose of this study is to assess the proposed development from a transportation perspective, determine traffic impacts associated with the development concept and identify any required mitigation measures. The study was conducted in accordance with the *City of London Transportation Impact Assessment Guidelines (April 2012)*.
- ▶ The subject site is currently serviced by London Transit Commission (LTC) bus services. Bus stops are present within a short walking distance and directly on-site, providing good accessibility to the LTC transit network.
- ▶ Although no cycling facilities are provided along Wonderland Road South and Viscount Road immediately adjacent to the subject site, bike facilities are available within the surrounding area. The City of London Cycling Master Plan indicates future in-boulevard cycling facilities will be provided along Wonderland Road South adjacent to the subject site, along with an extension of the existing signed bike route on Viscount Road. Cycling improvements are also planned for Commissioners Road West and Southdale Road West within the study area.
- ▶ The subject site is located in a walkable area with continuous sidewalks available on both sides of all roadways in the study area. Future residents and employees will have convenient access to a range of retail and service destinations within the existing Westmount Mall. The site is also surrounded by several public facilities accessible within a convenient walk, including schools and a number of nearby parks. In addition, a large number of retail and service amenities can be accessed within a 10-minute walk of the site.
- ▶ For the analysis of future traffic conditions, this study conservatively assumes that full buildout of the development concept will occur by the year 2027. The analysis considers a five-year horizon to determine whether the existing road network can support the development concept without the need for off-site infrastructure improvements such as road widenings or intersection modifications.
- ▶ The development concept has a net vehicle trip generation of 399 two-way auto trips during the weekday AM peak hour, and 201 two-way auto trips during the weekday PM peak hour.
- ▶ The analysis results indicate that traffic associated with the development concept can be accommodated by the surrounding road network. Signal optimization is recommended at the intersection of Wonderland Road South and Commissioners Road West during the AM peak hour and the south site access on Wonderland Road South during the PM peak hour to improve intersection operations. Additional evaluation of the configuration of the site accesses on Wonderland Road South and Viscount Road will be provided through the development submission process to ensure effective and safe operations.

- ▶ The existing mall surface and underground parking lot has a total parking supply that exceeds the by-law requirement associated with the development concept. The allocation of parking between the on-site land uses will be addressed at the SPA stage, considering development phasing and the replacement of surface parking with additional underground parking.
- ▶ A robust set of TDM measures is recommended for the subject site in order to promote sustainable travel alternatives and reduce the number of single-occupant vehicle trips generated by the proposed development.



LEA 

APPENDIX A

Existing Traffic Data & Signal Timing Plans





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Count Name: 23181_Wonderland Rd S &
Commissioners Rd W-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

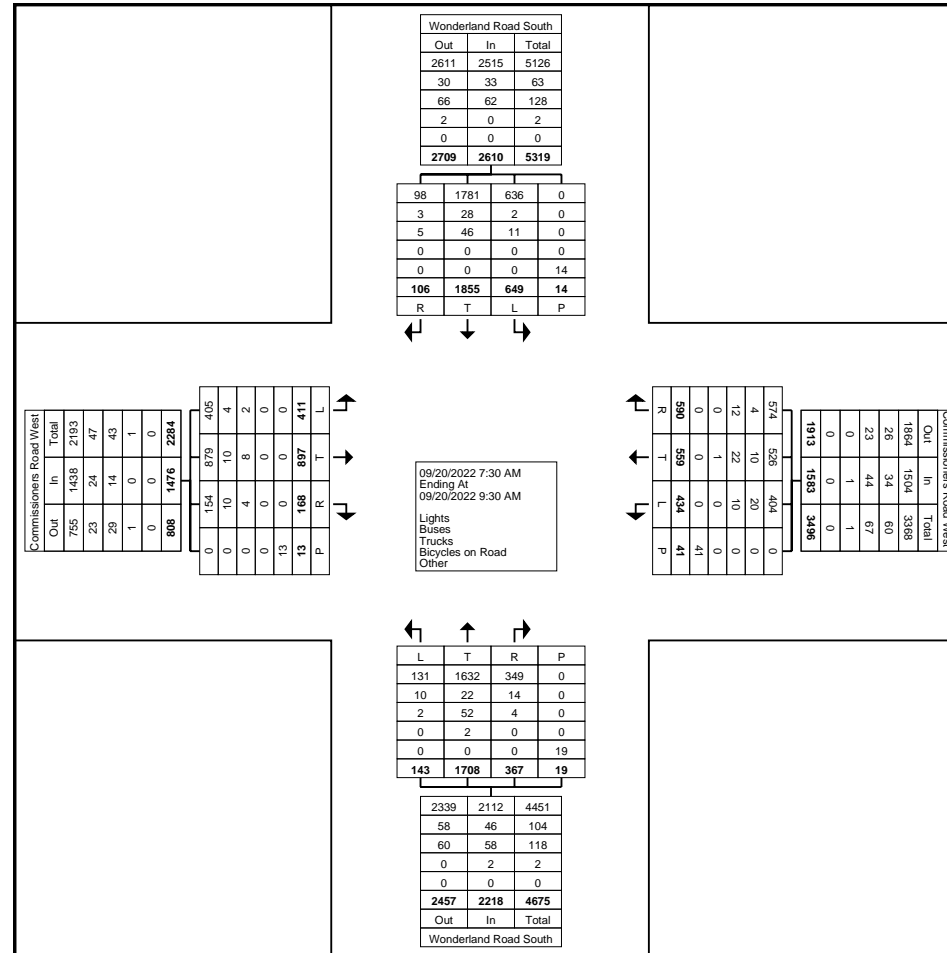
| Start Time | Wonderland Road South Southbound | | | | | Commissioners Road West Westbound | | | | | Wonderland Road South Northbound | | | | | Commissioners Road West Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|------|-------|------|------------|-----------------------------------|------|-------|------|------------|----------------------------------|------|-------|------|------------|-----------------------------------|------|-------|-------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 88 | 236 | 14 | 1 | 338 | 41 | 72 | 71 | 2 | 184 | 14 | 184 | 39 | 4 | 237 | 69 | 134 | 18 | 2 | 221 | 980 |
| 7:45 AM | 80 | 252 | 9 | 3 | 341 | 54 | 59 | 58 | 5 | 171 | 16 | 257 | 49 | 1 | 322 | 67 | 105 | 16 | 5 | 188 | 1022 |
| Hourly Total | 168 | 488 | 23 | 4 | 679 | 95 | 131 | 129 | 7 | 355 | 30 | 441 | 88 | 5 | 559 | 136 | 239 | 34 | 7 | 409 | 2002 |
| 8:00 AM | 82 | 194 | 13 | 0 | 289 | 63 | 68 | 77 | 7 | 208 | 24 | 206 | 49 | 5 | 279 | 59 | 115 | 27 | 1 | 201 | 977 |
| 8:15 AM | 89 | 233 | 19 | 2 | 341 | 47 | 75 | 63 | 4 | 185 | 15 | 249 | 38 | 2 | 302 | 37 | 100 | 22 | 0 | 159 | 987 |
| 8:30 AM | 84 | 228 | 12 | 4 | 324 | 54 | 74 | 87 | 9 | 215 | 19 | 215 | 55 | 1 | 289 | 58 | 132 | 24 | 3 | 214 | 1042 |
| 8:45 AM | 92 | 279 | 17 | 1 | 388 | 66 | 70 | 72 | 5 | 208 | 25 | 200 | 60 | 2 | 285 | 41 | 108 | 25 | 1 | 174 | 1055 |
| Hourly Total | 347 | 934 | 61 | 7 | 1342 | 230 | 287 | 299 | 25 | 816 | 83 | 870 | 202 | 10 | 1155 | 195 | 455 | 98 | 5 | 748 | 4061 |
| 9:00 AM | 67 | 179 | 9 | 2 | 255 | 56 | 71 | 92 | 1 | 219 | 19 | 180 | 47 | 3 | 246 | 50 | 123 | 17 | 0 | 190 | 910 |
| 9:15 AM | 67 | 254 | 13 | 1 | 334 | 53 | 70 | 70 | 8 | 193 | 11 | 217 | 30 | 1 | 258 | 30 | 80 | 19 | 1 | 129 | 914 |
| Grand Total | 649 | 1855 | 106 | 14 | 2610 | 434 | 559 | 590 | 41 | 1583 | 143 | 1708 | 367 | 19 | 2218 | 411 | 897 | 168 | 13 | 1476 | 7887 |
| Approach % | 24.9 | 71.1 | 4.1 | - | - | 27.4 | 35.3 | 37.3 | - | - | 6.4 | 77.0 | 16.5 | - | - | 27.8 | 60.8 | 11.4 | - | - | - |
| Total % | 8.2 | 23.5 | 1.3 | - | 33.1 | 5.5 | 7.1 | 7.5 | - | 20.1 | 1.8 | 21.7 | 4.7 | - | 28.1 | 5.2 | 11.4 | 2.1 | - | 18.7 | - |
| Lights | 636 | 1781 | 98 | - | 2515 | 404 | 526 | 574 | - | 1504 | 131 | 1632 | 349 | - | 2112 | 405 | 879 | 154 | - | 1438 | 7569 |
| % Lights | 98.0 | 96.0 | 92.5 | - | 96.4 | 93.1 | 94.1 | 97.3 | - | 95.0 | 91.6 | 95.6 | 95.1 | - | 95.2 | 98.5 | 98.0 | 91.7 | - | 97.4 | 96.0 |
| Buses | 2 | 28 | 3 | - | 33 | 20 | 10 | 4 | - | 34 | 10 | 22 | 14 | - | 46 | 4 | 10 | 10 | - | 24 | 137 |
| % Buses | 0.3 | 1.5 | 2.8 | - | 1.3 | 4.6 | 1.8 | 0.7 | - | 2.1 | 7.0 | 1.3 | 3.8 | - | 2.1 | 1.0 | 1.1 | 6.0 | - | 1.6 | 1.7 |
| Trucks | 11 | 46 | 5 | - | 62 | 10 | 22 | 12 | - | 44 | 2 | 52 | 4 | - | 58 | 2 | 8 | 4 | - | 14 | 178 |
| % Trucks | 1.7 | 2.5 | 4.7 | - | 2.4 | 2.3 | 3.9 | 2.0 | - | 2.8 | 1.4 | 3.0 | 1.1 | - | 2.6 | 0.5 | 0.9 | 2.4 | - | 0.9 | 2.3 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 3 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.2 | 0.0 | - | 0.1 | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 1 | - | - | - | - | 5 | - | - | - | - | 1 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 7.1 | - | - | - | - | 12.2 | - | - | - | - | 5.3 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 13 | - | - | - | - | 36 | - | - | - | - | 18 | - | - | - | - | 13 | - | - |
| % Pedestrians | - | - | - | 92.9 | - | - | - | - | 87.8 | - | - | - | - | 94.7 | - | - | - | - | 100.0 | - | - |



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Count Name: 23181_Wonderland Rd S &
Commissioners Rd W-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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905-470-0015 x240 KIo@LEA.ca

Count Name: 23181_Wonderland Rd S &
Commissioners Rd W-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (8:00 AM)

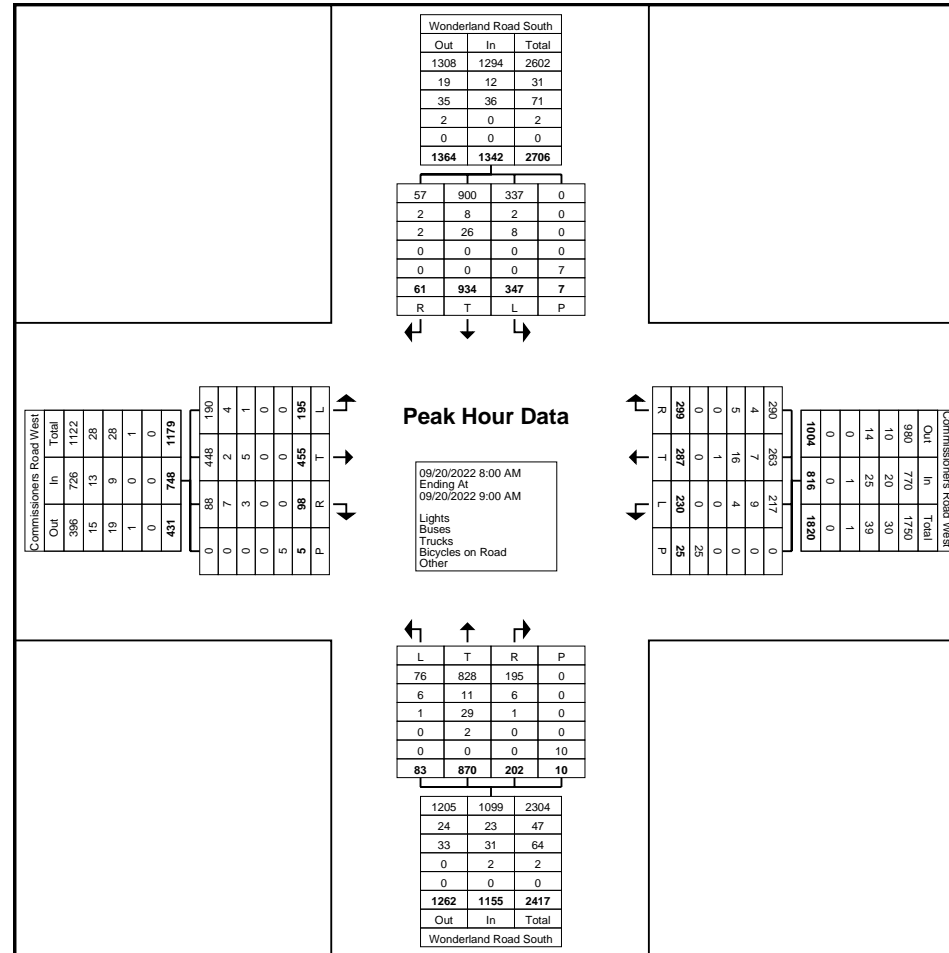
| Start Time | Wonderland Road South Southbound | | | | | Commissioners Road West Westbound | | | | | Wonderland Road South Northbound | | | | | Commissioners Road West Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|-------|-------|------|------------|-----------------------------------|-------|-------|------|------------|----------------------------------|-------|-------|-------|------------|-----------------------------------|-------|-------|-------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 8:00 AM | 82 | 194 | 13 | 0 | 289 | 63 | 68 | 77 | 7 | 208 | 24 | 206 | 49 | 5 | 279 | 59 | 115 | 27 | 1 | 201 | 977 |
| 8:15 AM | 89 | 233 | 19 | 2 | 341 | 47 | 75 | 63 | 4 | 185 | 15 | 249 | 38 | 2 | 302 | 37 | 100 | 22 | 0 | 159 | 987 |
| 8:30 AM | 84 | 228 | 12 | 4 | 324 | 54 | 74 | 87 | 9 | 215 | 19 | 215 | 55 | 1 | 289 | 58 | 132 | 24 | 3 | 214 | 1042 |
| 8:45 AM | 92 | 279 | 17 | 1 | 388 | 66 | 70 | 72 | 5 | 208 | 25 | 200 | 60 | 2 | 285 | 41 | 108 | 25 | 1 | 174 | 1055 |
| Total | 347 | 934 | 61 | 7 | 1342 | 230 | 287 | 299 | 25 | 816 | 83 | 870 | 202 | 10 | 1155 | 195 | 455 | 98 | 5 | 748 | 4061 |
| Approach % | 25.9 | 69.6 | 4.5 | - | - | 28.2 | 35.2 | 36.6 | - | - | 7.2 | 75.3 | 17.5 | - | - | 26.1 | 60.8 | 13.1 | - | - | - |
| Total % | 8.5 | 23.0 | 1.5 | - | 33.0 | 5.7 | 7.1 | 7.4 | - | 20.1 | 2.0 | 21.4 | 5.0 | - | 28.4 | 4.8 | 11.2 | 2.4 | - | 18.4 | - |
| PHF | 0.943 | 0.837 | 0.803 | - | 0.865 | 0.871 | 0.957 | 0.859 | - | 0.949 | 0.830 | 0.873 | 0.842 | - | 0.956 | 0.826 | 0.862 | 0.907 | - | 0.874 | 0.962 |
| Lights | 337 | 900 | 57 | - | 1294 | 217 | 263 | 290 | - | 770 | 76 | 828 | 195 | - | 1099 | 190 | 448 | 88 | - | 726 | 3889 |
| % Lights | 97.1 | 96.4 | 93.4 | - | 96.4 | 94.3 | 91.6 | 97.0 | - | 94.4 | 91.6 | 95.2 | 96.5 | - | 95.2 | 97.4 | 98.5 | 89.8 | - | 97.1 | 95.8 |
| Buses | 2 | 8 | 2 | - | 12 | 9 | 7 | 4 | - | 20 | 6 | 11 | 6 | - | 23 | 4 | 2 | 7 | - | 13 | 68 |
| % Buses | 0.6 | 0.9 | 3.3 | - | 0.9 | 3.9 | 2.4 | 1.3 | - | 2.5 | 7.2 | 1.3 | 3.0 | - | 2.0 | 2.1 | 0.4 | 7.1 | - | 1.7 | 1.7 |
| Trucks | 8 | 26 | 2 | - | 36 | 4 | 16 | 5 | - | 25 | 1 | 29 | 1 | - | 31 | 1 | 5 | 3 | - | 9 | 101 |
| % Trucks | 2.3 | 2.8 | 3.3 | - | 2.7 | 1.7 | 5.6 | 1.7 | - | 3.1 | 1.2 | 3.3 | 0.5 | - | 2.7 | 0.5 | 1.1 | 3.1 | - | 1.2 | 2.5 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 3 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.3 | 0.0 | - | 0.1 | 0.0 | 0.2 | 0.0 | - | 0.2 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Bicycles on Crosswalk | - | - | - | 1 | - | - | - | - | 4 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 14.3 | - | - | - | - | 16.0 | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 6 | - | - | - | - | 21 | - | - | - | - | 10 | - | - | - | - | 5 | - | - |
| % Pedestrians | - | - | - | 85.7 | - | - | - | - | 84.0 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |



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Count Name: 23181_Wonderland Rd S &
Commissioners Rd W-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 4



Turning Movement Peak Hour Data Plot (8:00 AM)



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Count Name: 23181_Wonderland Rd S &
Commissioners Rd W-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

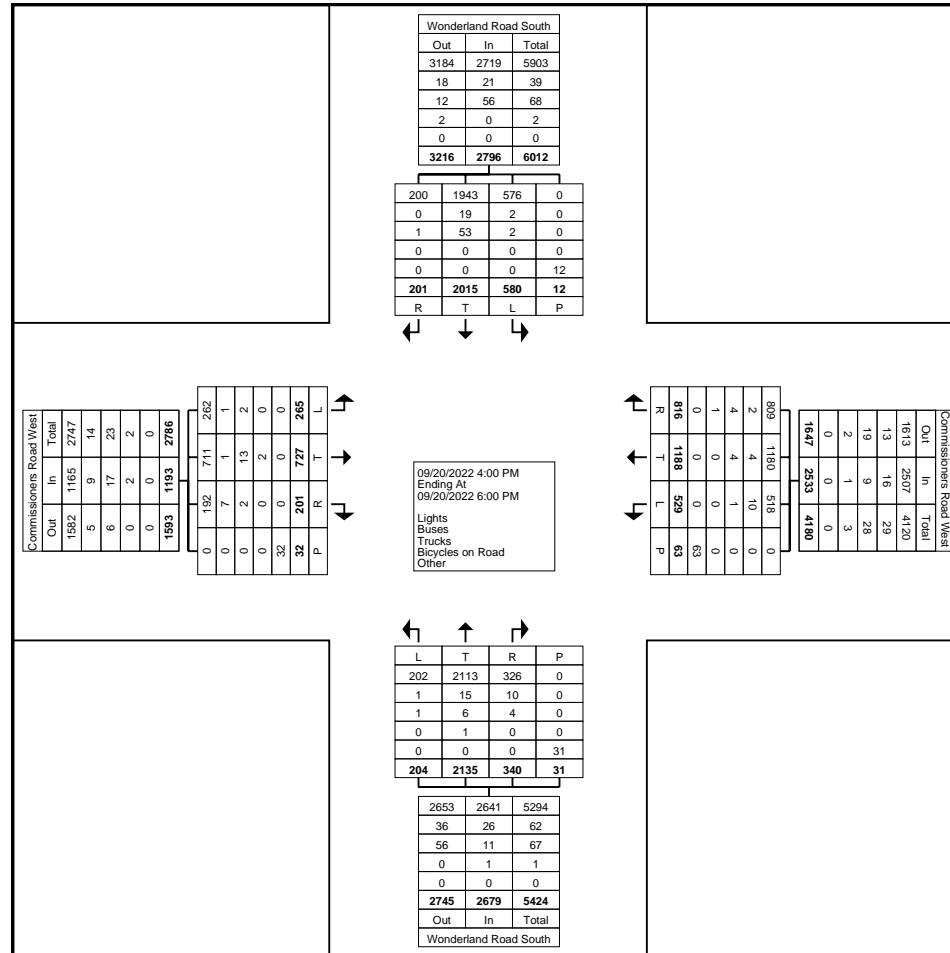
| Start Time | Wonderland Road South Southbound | | | | | Commissioners Road West Westbound | | | | | Wonderland Road South Northbound | | | | | Commissioners Road West Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|------|-------|-------|------------|-----------------------------------|------|-------|------|------------|----------------------------------|------|-------|------|------------|-----------------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 67 | 267 | 17 | 3 | 351 | 65 | 130 | 100 | 11 | 295 | 27 | 251 | 39 | 6 | 317 | 40 | 79 | 28 | 4 | 147 | 1110 |
| 4:15 PM | 70 | 273 | 15 | 0 | 358 | 62 | 152 | 112 | 6 | 326 | 22 | 268 | 44 | 2 | 334 | 34 | 113 | 23 | 4 | 170 | 1188 |
| 4:30 PM | 76 | 268 | 36 | 3 | 380 | 65 | 144 | 91 | 7 | 300 | 25 | 263 | 39 | 1 | 327 | 28 | 81 | 24 | 7 | 133 | 1140 |
| 4:45 PM | 76 | 269 | 26 | 1 | 371 | 61 | 135 | 106 | 4 | 302 | 25 | 273 | 45 | 1 | 343 | 40 | 106 | 21 | 2 | 167 | 1183 |
| Hourly Total | 289 | 1077 | 94 | 7 | 1460 | 253 | 561 | 409 | 28 | 1223 | 99 | 1055 | 167 | 10 | 1321 | 142 | 379 | 96 | 17 | 617 | 4621 |
| 5:00 PM | 76 | 244 | 18 | 0 | 338 | 68 | 127 | 107 | 8 | 302 | 29 | 259 | 35 | 6 | 323 | 32 | 103 | 27 | 3 | 162 | 1125 |
| 5:15 PM | 76 | 235 | 34 | 2 | 345 | 71 | 158 | 113 | 3 | 342 | 20 | 289 | 43 | 5 | 352 | 30 | 87 | 32 | 2 | 149 | 1188 |
| 5:30 PM | 72 | 250 | 27 | 3 | 349 | 80 | 182 | 91 | 8 | 353 | 24 | 286 | 43 | 2 | 353 | 28 | 63 | 24 | 5 | 115 | 1170 |
| 5:45 PM | 67 | 209 | 28 | 0 | 304 | 57 | 160 | 96 | 16 | 313 | 32 | 246 | 52 | 8 | 330 | 33 | 95 | 22 | 5 | 150 | 1097 |
| Hourly Total | 291 | 938 | 107 | 5 | 1336 | 276 | 627 | 407 | 35 | 1310 | 105 | 1080 | 173 | 21 | 1358 | 123 | 348 | 105 | 15 | 576 | 4580 |
| Grand Total | 580 | 2015 | 201 | 12 | 2796 | 529 | 1188 | 816 | 63 | 2533 | 204 | 2135 | 340 | 31 | 2679 | 265 | 727 | 201 | 32 | 1193 | 9201 |
| Approach % | 20.7 | 72.1 | 7.2 | - | - | 20.9 | 46.9 | 32.2 | - | - | 7.6 | 79.7 | 12.7 | - | - | 22.2 | 60.9 | 16.8 | - | - | - |
| Total % | 6.3 | 21.9 | 2.2 | - | 30.4 | 5.7 | 12.9 | 8.9 | - | 27.5 | 2.2 | 23.2 | 3.7 | - | 29.1 | 2.9 | 7.9 | 2.2 | - | 13.0 | - |
| Lights | 576 | 1943 | 200 | - | 2719 | 518 | 1180 | 809 | - | 2507 | 202 | 2113 | 326 | - | 2641 | 262 | 711 | 192 | - | 1165 | 9032 |
| % Lights | 99.3 | 96.4 | 99.5 | - | 97.2 | 97.9 | 99.3 | 99.1 | - | 99.0 | 99.0 | 99.0 | 95.9 | - | 98.6 | 98.9 | 97.8 | 95.5 | - | 97.7 | 98.2 |
| Buses | 2 | 19 | 0 | - | 21 | 10 | 4 | 2 | - | 16 | 1 | 15 | 10 | - | 26 | 1 | 1 | 7 | - | 9 | 72 |
| % Buses | 0.3 | 0.9 | 0.0 | - | 0.8 | 1.9 | 0.3 | 0.2 | - | 0.6 | 0.5 | 0.7 | 2.9 | - | 1.0 | 0.4 | 0.1 | 3.5 | - | 0.8 | 0.8 |
| Trucks | 2 | 53 | 1 | - | 56 | 1 | 4 | 4 | - | 9 | 1 | 6 | 4 | - | 11 | 2 | 13 | 2 | - | 17 | 93 |
| % Trucks | 0.3 | 2.6 | 0.5 | - | 2.0 | 0.2 | 0.3 | 0.5 | - | 0.4 | 0.5 | 0.3 | 1.2 | - | 0.4 | 0.8 | 1.8 | 1.0 | - | 1.4 | 1.0 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 1 | - | 1 | 0 | 1 | 0 | - | 1 | 0 | 2 | 0 | - | 2 | 4 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.1 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.3 | 0.0 | - | 0.2 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 8 | - | - | - | - | 2 | - | - | - | - | 8 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 12.7 | - | - | - | - | 6.5 | - | - | - | - | 25.0 | - | - |
| Pedestrians | - | - | - | 12 | - | - | - | - | 55 | - | - | - | - | 29 | - | - | - | - | 24 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 87.3 | - | - | - | - | 93.5 | - | - | - | - | 75.0 | - | - |



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Count Name: 23181_Wonderland Rd S &
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Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Count Name: 23181_Wonderland Rd S &
Commissioners Rd W-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (4:45 PM)

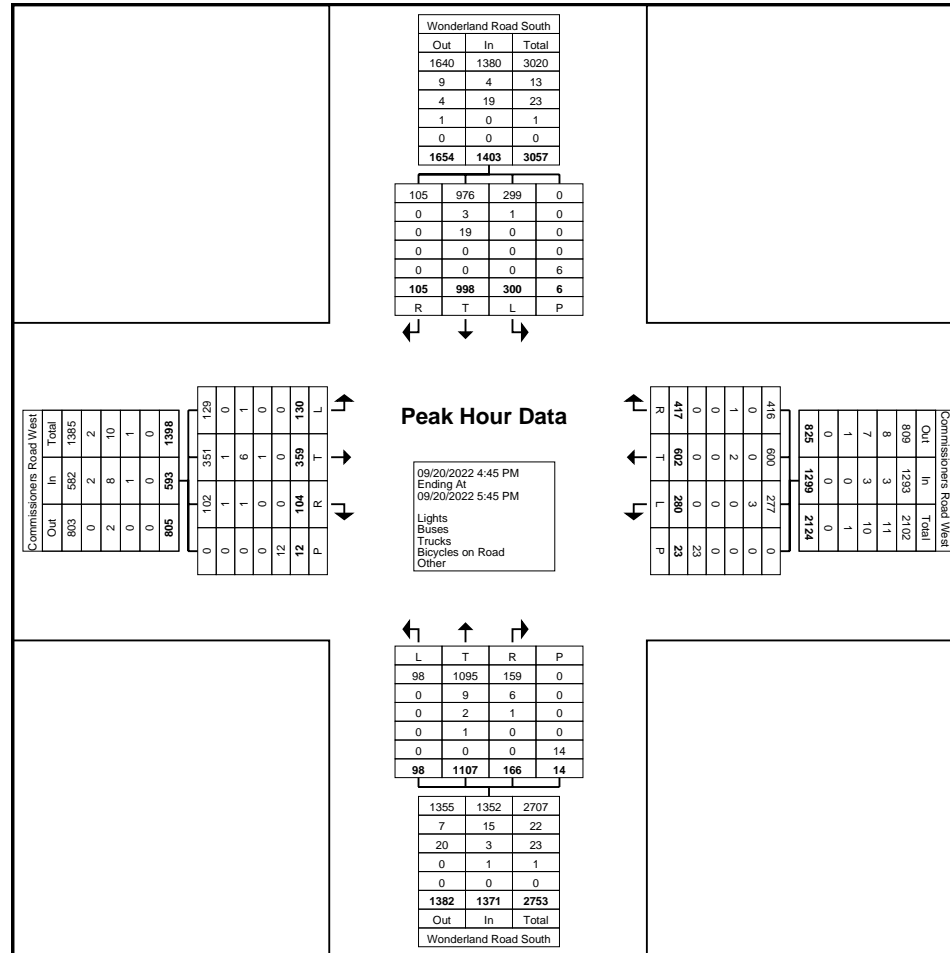
| Start Time | Wonderland Road South Southbound | | | | | Commissioners Road West Westbound | | | | | Wonderland Road South Northbound | | | | | Commissioners Road West Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------------|-------|-------|-------|------------|--------------------------------------|-------|-------|------|------------|-------------------------------------|-------|-------|------|------------|--------------------------------------|-------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:45 PM | 76 | 269 | 26 | 1 | 371 | 61 | 135 | 106 | 4 | 302 | 25 | 273 | 45 | 1 | 343 | 40 | 106 | 21 | 2 | 167 | 1183 |
| 5:00 PM | 76 | 244 | 18 | 0 | 338 | 68 | 127 | 107 | 8 | 302 | 29 | 259 | 35 | 6 | 323 | 32 | 103 | 27 | 3 | 162 | 1125 |
| 5:15 PM | 76 | 235 | 34 | 2 | 345 | 71 | 158 | 113 | 3 | 342 | 20 | 289 | 43 | 5 | 352 | 30 | 87 | 32 | 2 | 149 | 1188 |
| 5:30 PM | 72 | 250 | 27 | 3 | 349 | 80 | 182 | 91 | 8 | 353 | 24 | 286 | 43 | 2 | 353 | 28 | 63 | 24 | 5 | 115 | 1170 |
| Total | 300 | 998 | 105 | 6 | 1403 | 280 | 602 | 417 | 23 | 1299 | 98 | 1107 | 166 | 14 | 1371 | 130 | 359 | 104 | 12 | 593 | 4666 |
| Approach % | 21.4 | 71.1 | 7.5 | - | - | 21.6 | 46.3 | 32.1 | - | - | 7.1 | 80.7 | 12.1 | - | - | 21.9 | 60.5 | 17.5 | - | - | - |
| Total % | 6.4 | 21.4 | 2.3 | - | 30.1 | 6.0 | 12.9 | 8.9 | - | 27.8 | 2.1 | 23.7 | 3.6 | - | 29.4 | 2.8 | 7.7 | 2.2 | - | 12.7 | - |
| PHF | 0.987 | 0.928 | 0.772 | - | 0.945 | 0.875 | 0.827 | 0.923 | - | 0.920 | 0.845 | 0.958 | 0.922 | - | 0.971 | 0.813 | 0.847 | 0.813 | - | 0.888 | 0.982 |
| Lights | 299 | 976 | 105 | - | 1380 | 277 | 600 | 416 | - | 1293 | 98 | 1095 | 159 | - | 1352 | 129 | 351 | 102 | - | 582 | 4607 |
| % Lights | 99.7 | 97.8 | 100.0 | - | 98.4 | 98.9 | 99.7 | 99.8 | - | 99.5 | 100.0 | 98.9 | 95.8 | - | 98.6 | 99.2 | 97.8 | 98.1 | - | 98.1 | 98.7 |
| Buses | 1 | 3 | 0 | - | 4 | 3 | 0 | 0 | - | 3 | 0 | 9 | 6 | - | 15 | 0 | 1 | 1 | - | 2 | 24 |
| % Buses | 0.3 | 0.3 | 0.0 | - | 0.3 | 1.1 | 0.0 | 0.0 | - | 0.2 | 0.0 | 0.8 | 3.6 | - | 1.1 | 0.0 | 0.3 | 1.0 | - | 0.3 | 0.5 |
| Trucks | 0 | 19 | 0 | - | 19 | 0 | 2 | 1 | - | 3 | 0 | 2 | 1 | - | 3 | 1 | 6 | 1 | - | 8 | 33 |
| % Trucks | 0.0 | 1.9 | 0.0 | - | 1.4 | 0.0 | 0.3 | 0.2 | - | 0.2 | 0.0 | 0.2 | 0.6 | - | 0.2 | 0.8 | 1.7 | 1.0 | - | 1.3 | 0.7 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 1 | 0 | - | 1 | 2 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.0 | 0.3 | 0.0 | - | 0.2 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 4 | - | - | - | - | 1 | - | - | - | - | 1 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 17.4 | - | - | - | - | 7.1 | - | - | - | - | 8.3 | - | - |
| Pedestrians | - | - | - | 6 | - | - | - | - | 19 | - | - | - | - | 13 | - | - | - | - | 11 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 82.6 | - | - | - | - | 92.9 | - | - | - | - | 91.7 | - | - |



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Count Name: 23181_Wonderland Rd S &
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Site Code: 23181
Start Date: 09/20/2022
Page No: 4



Turning Movement Peak Hour Data Plot (4:45 PM)



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Count Name: 23181_Wonderland Rd S & Village
Green Ave-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

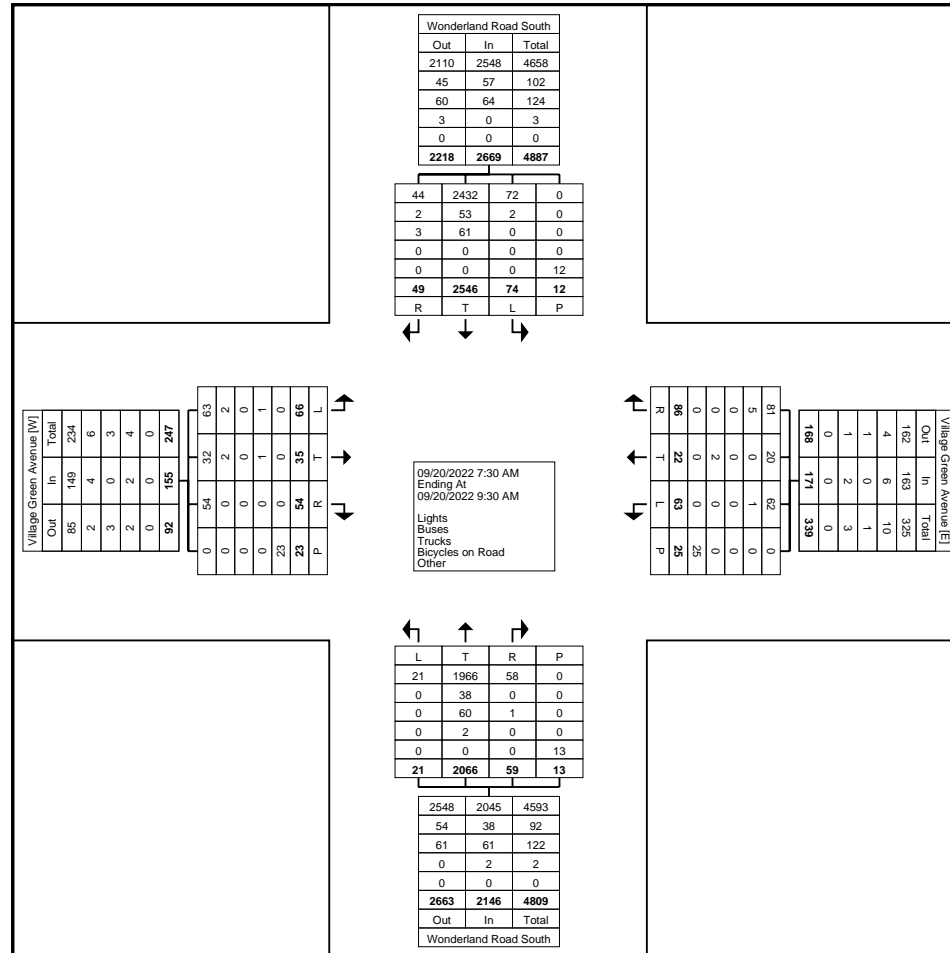
| Start Time | Wonderland Road South Southbound | | | | | Village Green Avenue Westbound | | | | | Wonderland Road South Northbound | | | | | Village Green Avenue Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------------|------|-------|-------|------------|-----------------------------------|------|-------|------|------------|-------------------------------------|------|-------|------|------------|-----------------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 4 | 320 | 5 | 2 | 329 | 6 | 3 | 4 | 1 | 13 | 3 | 283 | 3 | 3 | 289 | 11 | 0 | 5 | 4 | 16 | 647 |
| 7:45 AM | 5 | 338 | 5 | 1 | 348 | 9 | 2 | 14 | 6 | 25 | 1 | 308 | 4 | 1 | 313 | 3 | 3 | 5 | 1 | 11 | 697 |
| Hourly Total | 9 | 658 | 10 | 3 | 677 | 15 | 5 | 18 | 7 | 38 | 4 | 591 | 7 | 4 | 602 | 14 | 3 | 10 | 5 | 27 | 1344 |
| 8:00 AM | 12 | 337 | 6 | 2 | 355 | 9 | 2 | 10 | 4 | 21 | 4 | 270 | 15 | 0 | 289 | 16 | 10 | 7 | 6 | 33 | 698 |
| 8:15 AM | 14 | 329 | 4 | 0 | 347 | 2 | 3 | 17 | 2 | 22 | 3 | 273 | 9 | 1 | 285 | 4 | 6 | 6 | 0 | 16 | 670 |
| 8:30 AM | 13 | 303 | 9 | 1 | 325 | 6 | 5 | 7 | 1 | 18 | 0 | 266 | 6 | 0 | 272 | 12 | 6 | 7 | 3 | 25 | 640 |
| 8:45 AM | 18 | 343 | 10 | 4 | 371 | 9 | 3 | 9 | 3 | 21 | 3 | 223 | 10 | 3 | 236 | 5 | 6 | 8 | 2 | 19 | 647 |
| Hourly Total | 57 | 1312 | 29 | 7 | 1398 | 26 | 13 | 43 | 10 | 82 | 10 | 1032 | 40 | 4 | 1082 | 37 | 28 | 28 | 11 | 93 | 2655 |
| 9:00 AM | 5 | 262 | 6 | 0 | 273 | 12 | 4 | 14 | 4 | 30 | 2 | 224 | 8 | 3 | 234 | 7 | 1 | 8 | 2 | 16 | 553 |
| 9:15 AM | 3 | 314 | 4 | 2 | 321 | 10 | 0 | 11 | 4 | 21 | 5 | 219 | 4 | 2 | 228 | 8 | 3 | 8 | 5 | 19 | 589 |
| Grand Total | 74 | 2546 | 49 | 12 | 2669 | 63 | 22 | 86 | 25 | 171 | 21 | 2066 | 59 | 13 | 2146 | 66 | 35 | 54 | 23 | 155 | 5141 |
| Approach % | 2.8 | 95.4 | 1.8 | - | - | 36.8 | 12.9 | 50.3 | - | - | 1.0 | 96.3 | 2.7 | - | - | 42.6 | 22.6 | 34.8 | - | - | - |
| Total % | 1.4 | 49.5 | 1.0 | - | 51.9 | 1.2 | 0.4 | 1.7 | - | 3.3 | 0.4 | 40.2 | 1.1 | - | 41.7 | 1.3 | 0.7 | 1.1 | - | 3.0 | - |
| Lights | 72 | 2432 | 44 | - | 2548 | 62 | 20 | 81 | - | 163 | 21 | 1966 | 58 | - | 2045 | 63 | 32 | 54 | - | 149 | 4905 |
| % Lights | 97.3 | 95.5 | 89.8 | - | 95.5 | 98.4 | 90.9 | 94.2 | - | 95.3 | 100.0 | 95.2 | 98.3 | - | 95.3 | 95.5 | 91.4 | 100.0 | - | 96.1 | 95.4 |
| Buses | 2 | 53 | 2 | - | 57 | 1 | 0 | 5 | - | 6 | 0 | 38 | 0 | - | 38 | 2 | 2 | 0 | - | 4 | 105 |
| % Buses | 2.7 | 2.1 | 4.1 | - | 2.1 | 1.6 | 0.0 | 5.8 | - | 3.5 | 0.0 | 1.8 | 0.0 | - | 1.8 | 3.0 | 5.7 | 0.0 | - | 2.6 | 2.0 |
| Trucks | 0 | 61 | 3 | - | 64 | 0 | 0 | 0 | - | 0 | 0 | 60 | 1 | - | 61 | 0 | 0 | 0 | - | 0 | 125 |
| % Trucks | 0.0 | 2.4 | 6.1 | - | 2.4 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 2.9 | 1.7 | - | 2.8 | 0.0 | 0.0 | 0.0 | - | 0.0 | 2.4 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 0 | 2 | 0 | - | 2 | 1 | 1 | 0 | - | 2 | 6 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 9.1 | 0.0 | - | 1.2 | 0.0 | 0.1 | 0.0 | - | 0.1 | 1.5 | 2.9 | 0.0 | - | 1.3 | 0.1 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 1 | - | - | - | - | 1 | - | - | - | - | 7 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 4.0 | - | - | - | - | 7.7 | - | - | - | - | 30.4 | - | - |
| Pedestrians | - | - | - | 12 | - | - | - | - | 24 | - | - | - | - | 12 | - | - | - | - | 16 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 96.0 | - | - | - | - | 92.3 | - | - | - | - | 69.6 | - | - |



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Count Name: 23181_Wonderland Rd S & Village
Green Ave-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Count Name: 23181_Wonderland Rd S & Village
Green Ave-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

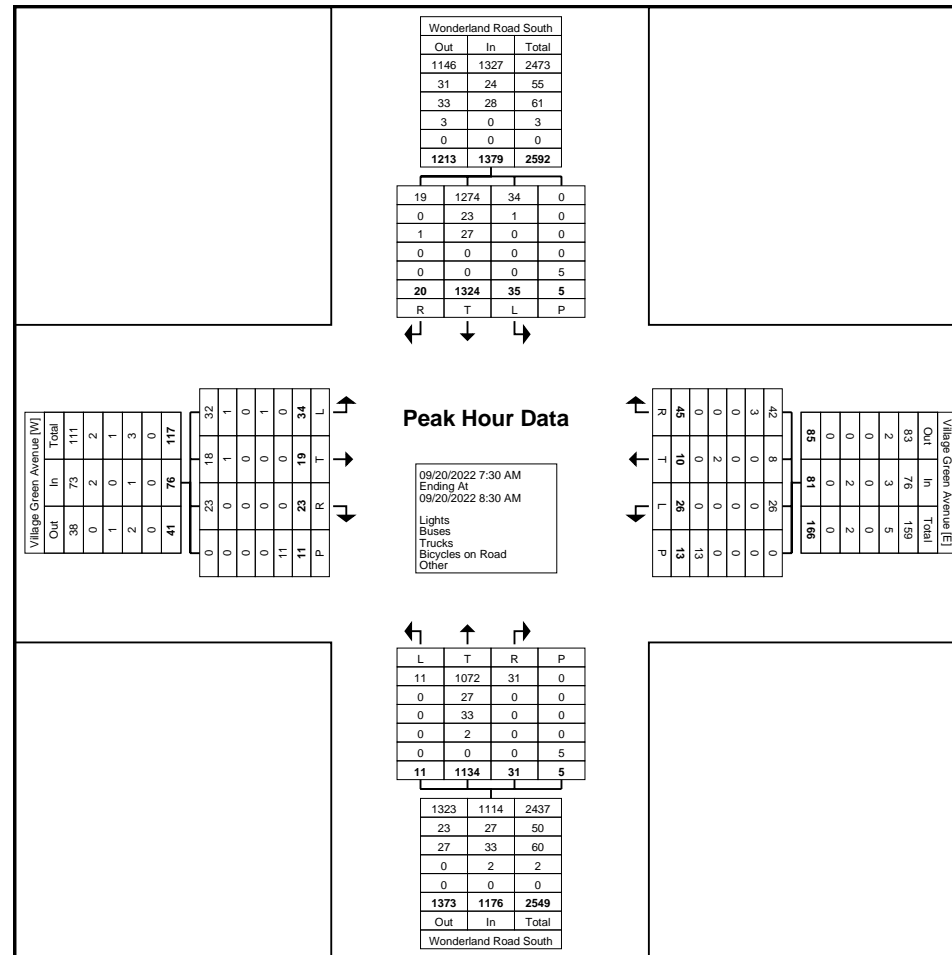
| Start Time | Wonderland Road South Southbound | | | | | Village Green Avenue Westbound | | | | | Wonderland Road South Northbound | | | | | Village Green Avenue Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|-------|-------|-------|------------|--------------------------------|-------|-------|------|------------|----------------------------------|-------|-------|------|------------|--------------------------------|-------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 4 | 320 | 5 | 2 | 329 | 6 | 3 | 4 | 1 | 13 | 3 | 283 | 3 | 3 | 289 | 11 | 0 | 5 | 4 | 16 | 647 |
| 7:45 AM | 5 | 338 | 5 | 1 | 348 | 9 | 2 | 14 | 6 | 25 | 1 | 308 | 4 | 1 | 313 | 3 | 3 | 5 | 1 | 11 | 697 |
| 8:00 AM | 12 | 337 | 6 | 2 | 355 | 9 | 2 | 10 | 4 | 21 | 4 | 270 | 15 | 0 | 289 | 16 | 10 | 7 | 6 | 33 | 698 |
| 8:15 AM | 14 | 329 | 4 | 0 | 347 | 2 | 3 | 17 | 2 | 22 | 3 | 273 | 9 | 1 | 285 | 4 | 6 | 6 | 0 | 16 | 670 |
| Total | 35 | 1324 | 20 | 5 | 1379 | 26 | 10 | 45 | 13 | 81 | 11 | 1134 | 31 | 5 | 1176 | 34 | 19 | 23 | 11 | 76 | 2712 |
| Approach % | 2.5 | 96.0 | 1.5 | - | - | 32.1 | 12.3 | 55.6 | - | - | 0.9 | 96.4 | 2.6 | - | - | 44.7 | 25.0 | 30.3 | - | - | - |
| Total % | 1.3 | 48.8 | 0.7 | - | 50.8 | 1.0 | 0.4 | 1.7 | - | 3.0 | 0.4 | 41.8 | 1.1 | - | 43.4 | 1.3 | 0.7 | 0.8 | - | 2.8 | - |
| PHF | 0.625 | 0.979 | 0.833 | - | 0.971 | 0.722 | 0.833 | 0.662 | - | 0.810 | 0.688 | 0.920 | 0.517 | - | 0.939 | 0.531 | 0.475 | 0.821 | - | 0.576 | 0.971 |
| Lights | 34 | 1274 | 19 | - | 1327 | 26 | 8 | 42 | - | 76 | 11 | 1072 | 31 | - | 1114 | 32 | 18 | 23 | - | 73 | 2590 |
| % Lights | 97.1 | 96.2 | 95.0 | - | 96.2 | 100.0 | 80.0 | 93.3 | - | 93.8 | 100.0 | 94.5 | 100.0 | - | 94.7 | 94.1 | 94.7 | 100.0 | - | 96.1 | 95.5 |
| Buses | 1 | 23 | 0 | - | 24 | 0 | 0 | 3 | - | 3 | 0 | 27 | 0 | - | 27 | 1 | 1 | 0 | - | 2 | 56 |
| % Buses | 2.9 | 1.7 | 0.0 | - | 1.7 | 0.0 | 0.0 | 6.7 | - | 3.7 | 0.0 | 2.4 | 0.0 | - | 2.3 | 2.9 | 5.3 | 0.0 | - | 2.6 | 2.1 |
| Trucks | 0 | 27 | 1 | - | 28 | 0 | 0 | 0 | - | 0 | 0 | 33 | 0 | - | 33 | 0 | 0 | 0 | - | 0 | 61 |
| % Trucks | 0.0 | 2.0 | 5.0 | - | 2.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 2.9 | 0.0 | - | 2.8 | 0.0 | 0.0 | 0.0 | - | 0.0 | 2.2 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 0 | 2 | 0 | - | 2 | 1 | 0 | 0 | - | 1 | 5 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 20.0 | 0.0 | - | 2.5 | 0.0 | 0.2 | 0.0 | - | 0.2 | 2.9 | 0.0 | 0.0 | - | 1.3 | 0.2 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 1 | - | - | - | - | 1 | - | - | - | - | 4 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 7.7 | - | - | - | - | 20.0 | - | - | - | - | 36.4 | - | - |
| Pedestrians | - | - | - | 5 | - | - | - | - | 12 | - | - | - | - | 4 | - | - | - | - | 7 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 92.3 | - | - | - | - | 80.0 | - | - | - | - | 63.6 | - | - |



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Count Name: 23181_Wonderland Rd S & Village
Green Ave-AM
Site Code: 23181
Start Date: 09/20/2022
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Turning Movement Peak Hour Data Plot (7:30 AM)



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Count Name: 23181_Wonderland Rd S & Village
Green Ave-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

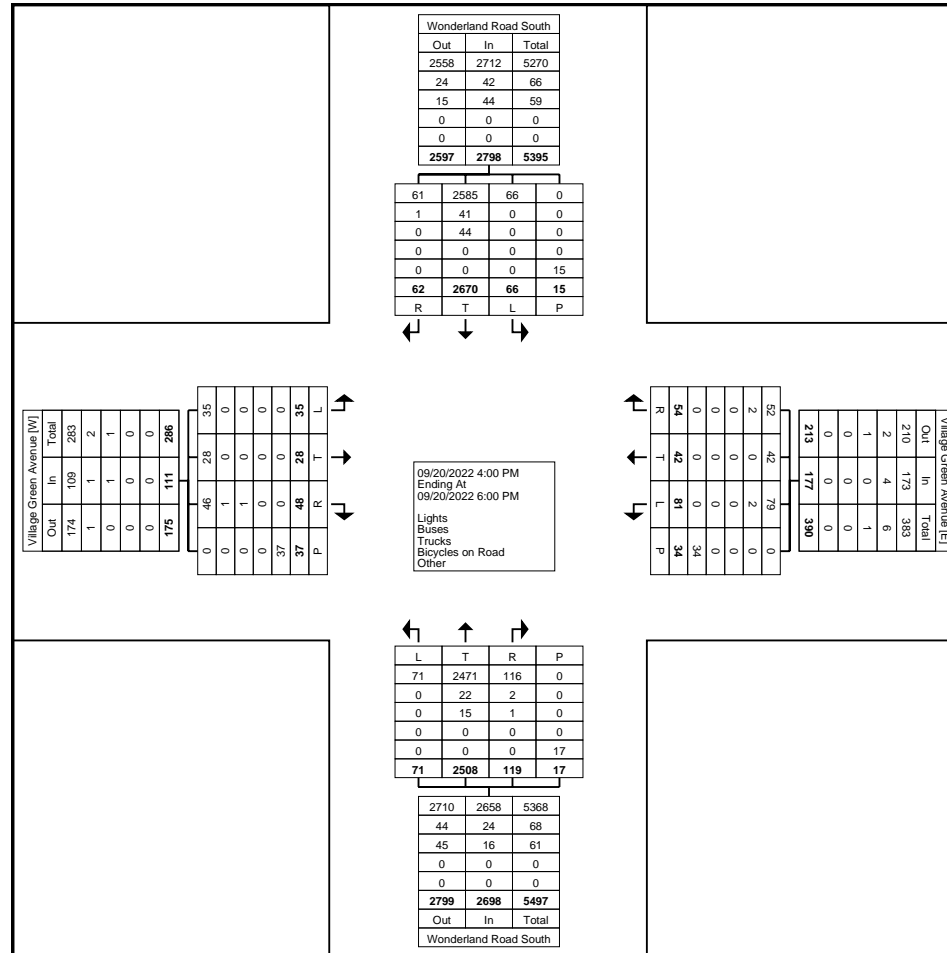
| Start Time | Wonderland Road South Southbound | | | | | Village Green Avenue Westbound | | | | | Wonderland Road South Northbound | | | | | Village Green Avenue Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|------|-------|------|------------|--------------------------------|-------|-------|------|------------|----------------------------------|------|-------|------|------------|--------------------------------|-------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 11 | 365 | 9 | 4 | 385 | 16 | 9 | 11 | 5 | 36 | 6 | 310 | 14 | 1 | 330 | 4 | 4 | 7 | 3 | 15 | 766 |
| 4:15 PM | 11 | 338 | 8 | 1 | 357 | 17 | 2 | 11 | 7 | 30 | 11 | 329 | 34 | 0 | 374 | 3 | 6 | 3 | 4 | 12 | 773 |
| 4:30 PM | 4 | 342 | 9 | 1 | 355 | 6 | 3 | 5 | 4 | 14 | 5 | 312 | 6 | 4 | 323 | 6 | 5 | 5 | 10 | 16 | 708 |
| 4:45 PM | 7 | 336 | 9 | 2 | 352 | 7 | 5 | 12 | 0 | 24 | 7 | 320 | 13 | 2 | 340 | 4 | 3 | 4 | 2 | 11 | 727 |
| Hourly Total | 33 | 1381 | 35 | 8 | 1449 | 46 | 19 | 39 | 16 | 104 | 29 | 1271 | 67 | 7 | 1367 | 17 | 18 | 19 | 19 | 54 | 2974 |
| 5:00 PM | 8 | 317 | 6 | 2 | 331 | 7 | 5 | 6 | 5 | 18 | 7 | 326 | 18 | 1 | 351 | 4 | 4 | 5 | 2 | 13 | 713 |
| 5:15 PM | 12 | 346 | 5 | 2 | 363 | 9 | 10 | 2 | 5 | 21 | 11 | 315 | 11 | 4 | 337 | 6 | 2 | 7 | 7 | 15 | 736 |
| 5:30 PM | 8 | 335 | 11 | 3 | 354 | 10 | 4 | 4 | 3 | 18 | 17 | 334 | 13 | 1 | 364 | 3 | 3 | 8 | 4 | 14 | 750 |
| 5:45 PM | 5 | 291 | 5 | 0 | 301 | 9 | 4 | 3 | 5 | 16 | 7 | 262 | 10 | 4 | 279 | 5 | 1 | 9 | 5 | 15 | 611 |
| Hourly Total | 33 | 1289 | 27 | 7 | 1349 | 35 | 23 | 15 | 18 | 73 | 42 | 1237 | 52 | 10 | 1331 | 18 | 10 | 29 | 18 | 57 | 2810 |
| Grand Total | 66 | 2670 | 62 | 15 | 2798 | 81 | 42 | 54 | 34 | 177 | 71 | 2508 | 119 | 17 | 2698 | 35 | 28 | 48 | 37 | 111 | 5784 |
| Approach % | 2.4 | 95.4 | 2.2 | - | - | 45.8 | 23.7 | 30.5 | - | - | 2.6 | 93.0 | 4.4 | - | - | 31.5 | 25.2 | 43.2 | - | - | - |
| Total % | 1.1 | 46.2 | 1.1 | - | 48.4 | 1.4 | 0.7 | 0.9 | - | 3.1 | 1.2 | 43.4 | 2.1 | - | 46.6 | 0.6 | 0.5 | 0.8 | - | 1.9 | - |
| Lights | 66 | 2585 | 61 | - | 2712 | 79 | 42 | 52 | - | 173 | 71 | 2471 | 116 | - | 2658 | 35 | 28 | 46 | - | 109 | 5652 |
| % Lights | 100.0 | 96.8 | 98.4 | - | 96.9 | 97.5 | 100.0 | 96.3 | - | 97.7 | 100.0 | 98.5 | 97.5 | - | 98.5 | 100.0 | 100.0 | 95.8 | - | 98.2 | 97.7 |
| Buses | 0 | 41 | 1 | - | 42 | 2 | 0 | 2 | - | 4 | 0 | 22 | 2 | - | 24 | 0 | 0 | 1 | - | 1 | 71 |
| % Buses | 0.0 | 1.5 | 1.6 | - | 1.5 | 2.5 | 0.0 | 3.7 | - | 2.3 | 0.0 | 0.9 | 1.7 | - | 0.9 | 0.0 | 0.0 | 2.1 | - | 0.9 | 1.2 |
| Trucks | 0 | 44 | 0 | - | 44 | 0 | 0 | 0 | - | 0 | 0 | 15 | 1 | - | 16 | 0 | 0 | 1 | - | 1 | 61 |
| % Trucks | 0.0 | 1.6 | 0.0 | - | 1.6 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.6 | 0.8 | - | 0.6 | 0.0 | 0.0 | 2.1 | - | 0.9 | 1.1 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 2 | - | - | - | - | 7 | - | - | - | - | 2 | - | - | - | - | 9 | - | - |
| % Bicycles on Crosswalk | - | - | - | 13.3 | - | - | - | - | 20.6 | - | - | - | - | 11.8 | - | - | - | - | 24.3 | - | - |
| Pedestrians | - | - | - | 13 | - | - | - | - | 27 | - | - | - | - | 15 | - | - | - | - | 28 | - | - |
| % Pedestrians | - | - | - | 86.7 | - | - | - | - | 79.4 | - | - | - | - | 88.2 | - | - | - | - | 75.7 | - | - |



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Count Name: 23181_Wonderland Rd S & Village
Green Ave-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Count Name: 23181_Wonderland Rd S & Village
Green Ave-PM
Site Code: 23181
Start Date: 09/20/2022
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Turning Movement Peak Hour Data (4:00 PM)

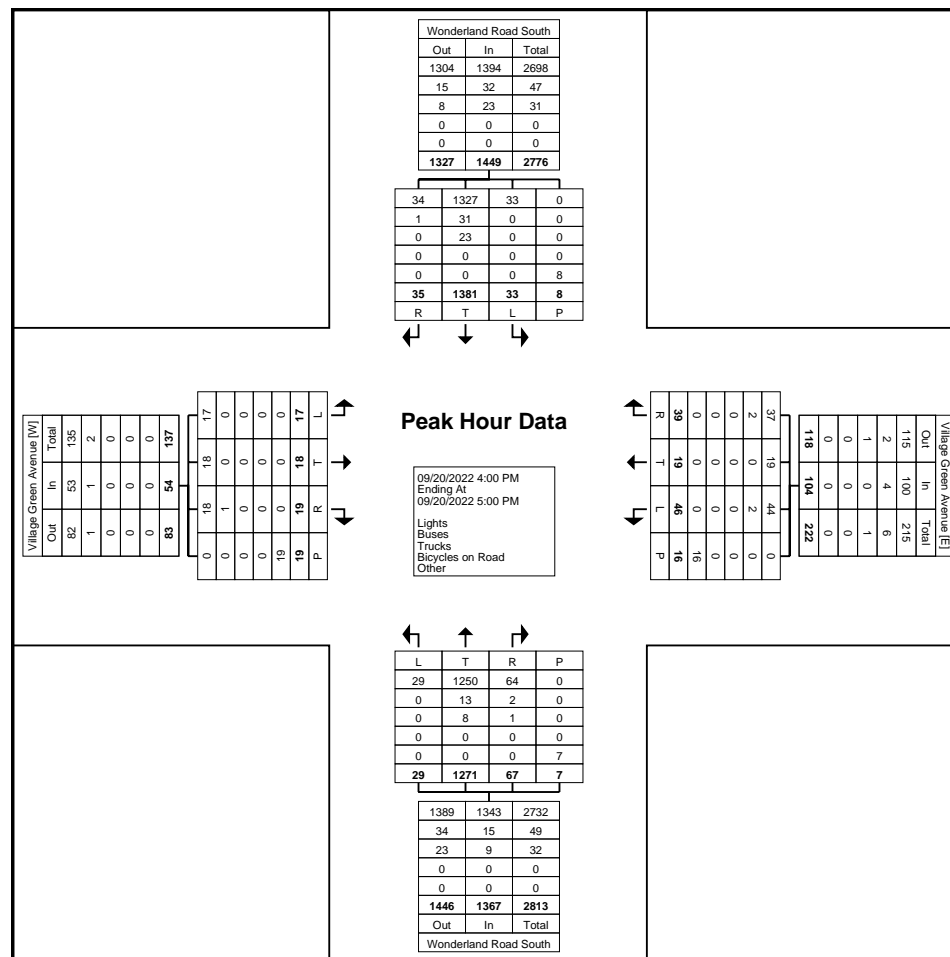
| Start Time | Wonderland Road South Southbound | | | | | Village Green Avenue Westbound | | | | | Wonderland Road South Northbound | | | | | Village Green Avenue Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------------|-------|-------|------|------------|-----------------------------------|-------|-------|------|------------|-------------------------------------|-------|-------|-------|------------|-----------------------------------|-------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 11 | 365 | 9 | 4 | 385 | 16 | 9 | 11 | 5 | 36 | 6 | 310 | 14 | 1 | 330 | 4 | 4 | 7 | 3 | 15 | 766 |
| 4:15 PM | 11 | 338 | 8 | 1 | 357 | 17 | 2 | 11 | 7 | 30 | 11 | 329 | 34 | 0 | 374 | 3 | 6 | 3 | 4 | 12 | 773 |
| 4:30 PM | 4 | 342 | 9 | 1 | 355 | 6 | 3 | 5 | 4 | 14 | 5 | 312 | 6 | 4 | 323 | 6 | 5 | 5 | 10 | 16 | 708 |
| 4:45 PM | 7 | 336 | 9 | 2 | 352 | 7 | 5 | 12 | 0 | 24 | 7 | 320 | 13 | 2 | 340 | 4 | 3 | 4 | 2 | 11 | 727 |
| Total | 33 | 1381 | 35 | 8 | 1449 | 46 | 19 | 39 | 16 | 104 | 29 | 1271 | 67 | 7 | 1367 | 17 | 18 | 19 | 19 | 54 | 2974 |
| Approach % | 2.3 | 95.3 | 2.4 | - | - | 44.2 | 18.3 | 37.5 | - | - | 2.1 | 93.0 | 4.9 | - | - | 31.5 | 33.3 | 35.2 | - | - | - |
| Total % | 1.1 | 46.4 | 1.2 | - | 48.7 | 1.5 | 0.6 | 1.3 | - | 3.5 | 1.0 | 42.7 | 2.3 | - | 46.0 | 0.6 | 0.6 | 0.6 | - | 1.8 | - |
| PHF | 0.750 | 0.946 | 0.972 | - | 0.941 | 0.676 | 0.528 | 0.813 | - | 0.722 | 0.659 | 0.966 | 0.493 | - | 0.914 | 0.708 | 0.750 | 0.679 | - | 0.844 | 0.962 |
| Lights | 33 | 1327 | 34 | - | 1394 | 44 | 19 | 37 | - | 100 | 29 | 1250 | 64 | - | 1343 | 17 | 18 | 18 | - | 53 | 2890 |
| % Lights | 100.0 | 96.1 | 97.1 | - | 96.2 | 95.7 | 100.0 | 94.9 | - | 96.2 | 100.0 | 98.3 | 95.5 | - | 98.2 | 100.0 | 100.0 | 94.7 | - | 98.1 | 97.2 |
| Buses | 0 | 31 | 1 | - | 32 | 2 | 0 | 2 | - | 4 | 0 | 13 | 2 | - | 15 | 0 | 0 | 1 | - | 1 | 52 |
| % Buses | 0.0 | 2.2 | 2.9 | - | 2.2 | 4.3 | 0.0 | 5.1 | - | 3.8 | 0.0 | 1.0 | 3.0 | - | 1.1 | 0.0 | 0.0 | 5.3 | - | 1.9 | 1.7 |
| Trucks | 0 | 23 | 0 | - | 23 | 0 | 0 | 0 | - | 0 | 0 | 8 | 1 | - | 9 | 0 | 0 | 0 | - | 0 | 32 |
| % Trucks | 0.0 | 1.7 | 0.0 | - | 1.6 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.6 | 1.5 | - | 0.7 | 0.0 | 0.0 | 0.0 | - | 0.0 | 1.1 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 1 | - | - | - | - | 2 | - | - | - | - | 0 | - | - | - | - | 6 | - | - |
| % Bicycles on Crosswalk | - | - | - | 12.5 | - | - | - | - | 12.5 | - | - | - | - | 0.0 | - | - | - | - | 31.6 | - | - |
| Pedestrians | - | - | - | 7 | - | - | - | - | 14 | - | - | - | - | 7 | - | - | - | - | 13 | - | - |
| % Pedestrians | - | - | - | 87.5 | - | - | - | - | 87.5 | - | - | - | - | 100.0 | - | - | - | - | 68.4 | - | - |



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Count Name: 23181_Wonderland Rd S & Village
Green Ave-PM
Site Code: 23181
Start Date: 09/20/2022
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Turning Movement Peak Hour Data Plot (4:00 PM)



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (North)-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

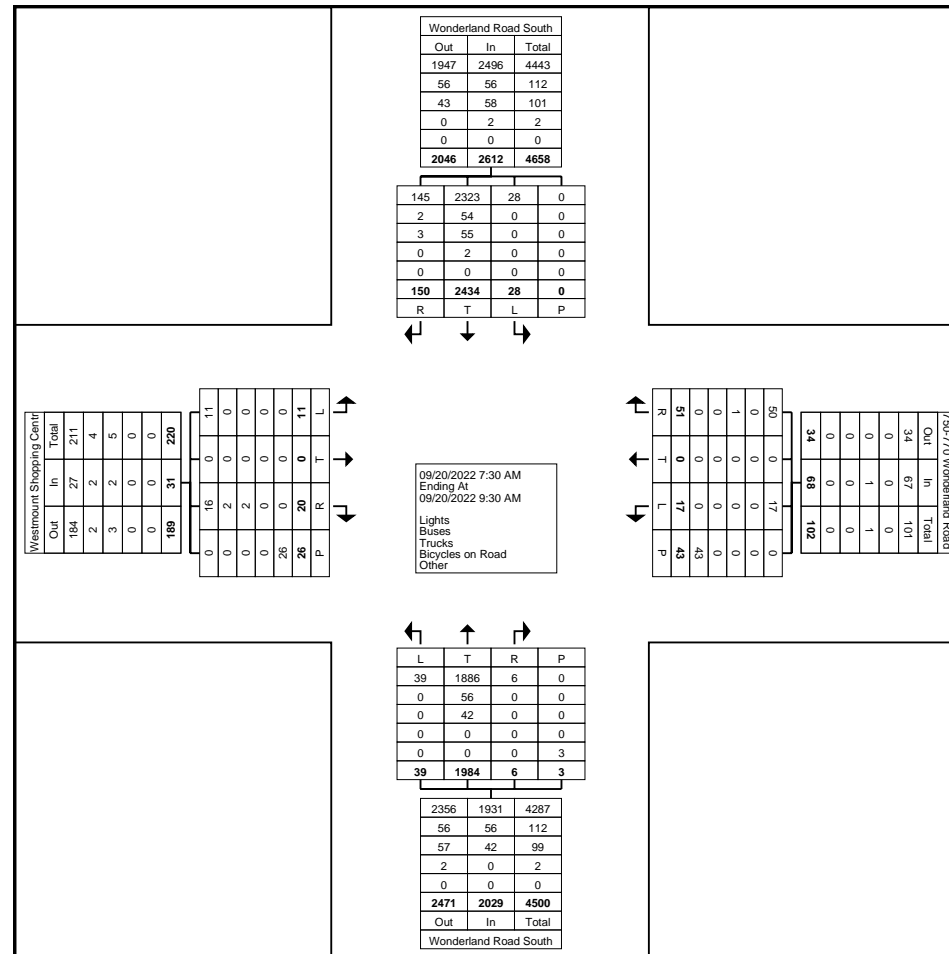
| Start Time | Wonderland Road South Southbound | | | | | 750-770 Wonderland Road South Access - North Westbound | | | | | Wonderland Road South Northbound | | | | | Westmount Shopping Centre Accesses - North Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|------|-------|------|------------|--------------------------------------------------------|------|-------|------|------------|----------------------------------|------|-------|-------|------------|------------------------------------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 3 | 304 | 7 | 0 | 314 | 0 | 0 | 8 | 2 | 8 | 2 | 253 | 0 | 0 | 255 | 1 | 0 | 1 | 3 | 2 | 579 |
| 7:45 AM | 2 | 340 | 14 | 0 | 356 | 1 | 0 | 3 | 7 | 4 | 8 | 289 | 0 | 1 | 297 | 0 | 0 | 2 | 1 | 2 | 659 |
| Hourly Total | 5 | 644 | 21 | 0 | 670 | 1 | 0 | 11 | 9 | 12 | 10 | 542 | 0 | 1 | 552 | 1 | 0 | 3 | 4 | 4 | 1238 |
| 8:00 AM | 5 | 301 | 22 | 0 | 328 | 4 | 0 | 6 | 5 | 10 | 2 | 282 | 0 | 0 | 284 | 1 | 0 | 5 | 7 | 6 | 628 |
| 8:15 AM | 6 | 294 | 21 | 0 | 321 | 0 | 0 | 3 | 2 | 3 | 1 | 209 | 2 | 0 | 212 | 1 | 0 | 2 | 0 | 3 | 539 |
| 8:30 AM | 2 | 294 | 19 | 0 | 315 | 1 | 0 | 12 | 10 | 13 | 7 | 263 | 0 | 0 | 270 | 1 | 0 | 0 | 3 | 1 | 599 |
| 8:45 AM | 3 | 333 | 33 | 0 | 369 | 4 | 0 | 8 | 4 | 12 | 7 | 233 | 0 | 1 | 240 | 0 | 0 | 2 | 3 | 2 | 623 |
| Hourly Total | 16 | 1222 | 95 | 0 | 1333 | 9 | 0 | 29 | 21 | 38 | 17 | 987 | 2 | 1 | 1006 | 3 | 0 | 9 | 13 | 12 | 2389 |
| 9:00 AM | 5 | 249 | 15 | 0 | 269 | 4 | 0 | 7 | 10 | 11 | 8 | 227 | 2 | 1 | 237 | 2 | 0 | 2 | 6 | 4 | 521 |
| 9:15 AM | 2 | 319 | 19 | 0 | 340 | 3 | 0 | 4 | 3 | 7 | 4 | 228 | 2 | 0 | 234 | 5 | 0 | 6 | 3 | 11 | 592 |
| Grand Total | 28 | 2434 | 150 | 0 | 2612 | 17 | 0 | 51 | 43 | 68 | 39 | 1984 | 6 | 3 | 2029 | 11 | 0 | 20 | 26 | 31 | 4740 |
| Approach % | 1.1 | 93.2 | 5.7 | - | - | 25.0 | 0.0 | 75.0 | - | - | 1.9 | 97.8 | 0.3 | - | - | 35.5 | 0.0 | 64.5 | - | - | - |
| Total % | 0.6 | 51.4 | 3.2 | - | 55.1 | 0.4 | 0.0 | 1.1 | - | 1.4 | 0.8 | 41.9 | 0.1 | - | 42.8 | 0.2 | 0.0 | 0.4 | - | 0.7 | - |
| Lights | 28 | 2323 | 145 | - | 2496 | 17 | 0 | 50 | - | 67 | 39 | 1886 | 6 | - | 1931 | 11 | 0 | 16 | - | 27 | 4521 |
| % Lights | 100.0 | 95.4 | 96.7 | - | 95.6 | 100.0 | - | 98.0 | - | 98.5 | 100.0 | 95.1 | 100.0 | - | 95.2 | 100.0 | - | 80.0 | - | 87.1 | 95.4 |
| Buses | 0 | 54 | 2 | - | 56 | 0 | 0 | 0 | - | 0 | 0 | 56 | 0 | - | 56 | 0 | 0 | 2 | - | 2 | 114 |
| % Buses | 0.0 | 2.2 | 1.3 | - | 2.1 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 2.8 | 0.0 | - | 2.8 | 0.0 | - | 10.0 | - | 6.5 | 2.4 |
| Trucks | 0 | 55 | 3 | - | 58 | 0 | 0 | 1 | - | 1 | 0 | 42 | 0 | - | 42 | 0 | 0 | 2 | - | 2 | 103 |
| % Trucks | 0.0 | 2.3 | 2.0 | - | 2.2 | 0.0 | - | 2.0 | - | 1.5 | 0.0 | 2.1 | 0.0 | - | 2.1 | 0.0 | - | 10.0 | - | 6.5 | 2.2 |
| Bicycles on Road | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 2 |
| % Bicycles on Road | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 1 | - | - | - | - | 0 | - | - | - | - | 7 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | 2.3 | - | - | - | - | 0.0 | - | - | - | - | 26.9 | - | - |
| Pedestrians | - | - | - | 0 | - | - | - | - | 42 | - | - | - | - | 3 | - | - | - | - | 19 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | 97.7 | - | - | - | - | 100.0 | - | - | - | - | 73.1 | - | - |



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (North)-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (North)-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (7:45 AM)

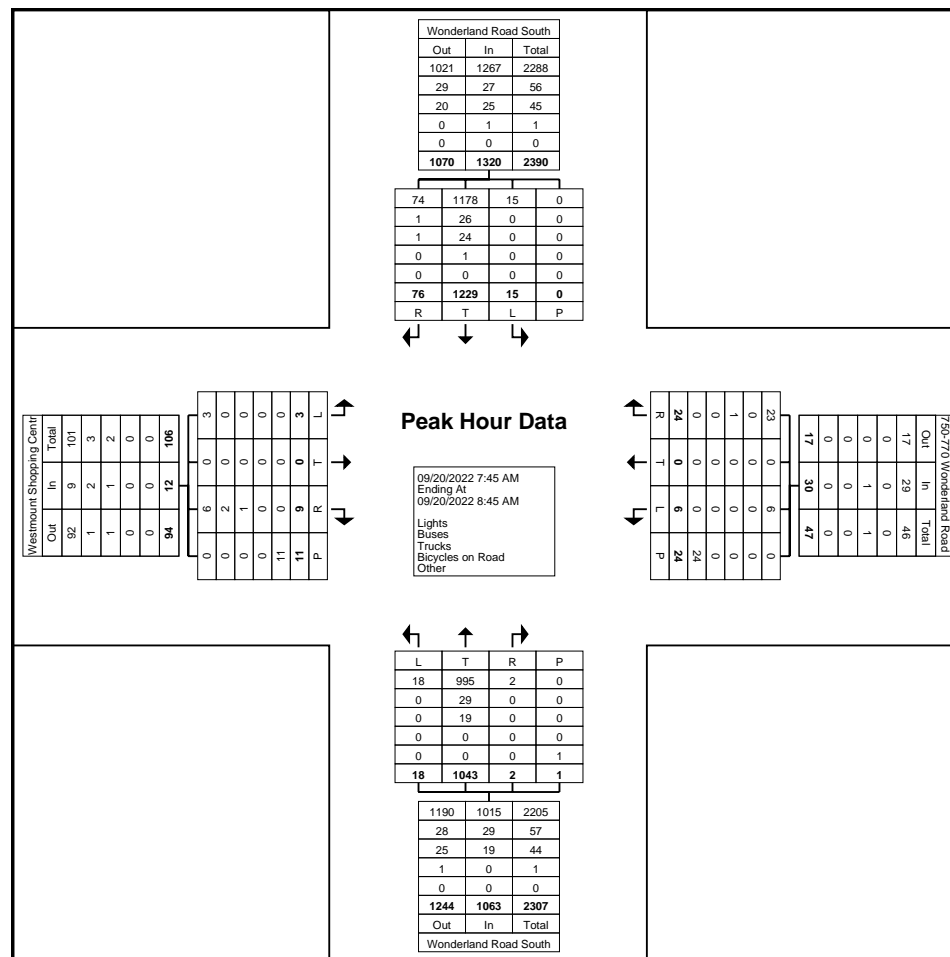
| Start Time | Wonderland Road South Southbound | | | | | 750-770 Wonderland Road South Access - North Westbound | | | | | Wonderland Road South Northbound | | | | | Westmount Shopping Centre Accesses - North Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|-------|-------|------|------------|--------------------------------------------------------|-------|-------|-------|------------|----------------------------------|-------|-------|-------|------------|------------------------------------------------------|-------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:45 AM | 2 | 340 | 14 | 0 | 356 | 1 | 0 | 3 | 7 | 4 | 8 | 289 | 0 | 1 | 297 | 0 | 0 | 2 | 1 | 2 | 659 |
| 8:00 AM | 5 | 301 | 22 | 0 | 328 | 4 | 0 | 6 | 5 | 10 | 2 | 282 | 0 | 0 | 284 | 1 | 0 | 5 | 7 | 6 | 628 |
| 8:15 AM | 6 | 294 | 21 | 0 | 321 | 0 | 0 | 3 | 2 | 3 | 1 | 209 | 2 | 0 | 212 | 1 | 0 | 2 | 0 | 3 | 539 |
| 8:30 AM | 2 | 294 | 19 | 0 | 315 | 1 | 0 | 12 | 10 | 13 | 7 | 263 | 0 | 0 | 270 | 1 | 0 | 0 | 3 | 1 | 599 |
| Total | 15 | 1229 | 76 | 0 | 1320 | 6 | 0 | 24 | 24 | 30 | 18 | 1043 | 2 | 1 | 1063 | 3 | 0 | 9 | 11 | 12 | 2425 |
| Approach % | 1.1 | 93.1 | 5.8 | - | - | 20.0 | 0.0 | 80.0 | - | - | 1.7 | 98.1 | 0.2 | - | - | 25.0 | 0.0 | 75.0 | - | - | - |
| Total % | 0.6 | 50.7 | 3.1 | - | 54.4 | 0.2 | 0.0 | 1.0 | - | 1.2 | 0.7 | 43.0 | 0.1 | - | 43.8 | 0.1 | 0.0 | 0.4 | - | 0.5 | - |
| PHF | 0.625 | 0.904 | 0.864 | - | 0.927 | 0.375 | 0.000 | 0.500 | - | 0.577 | 0.563 | 0.902 | 0.250 | - | 0.895 | 0.750 | 0.000 | 0.450 | - | 0.500 | 0.920 |
| Lights | 15 | 1178 | 74 | - | 1267 | 6 | 0 | 23 | - | 29 | 18 | 995 | 2 | - | 1015 | 3 | 0 | 6 | - | 9 | 2320 |
| % Lights | 100.0 | 95.9 | 97.4 | - | 96.0 | 100.0 | - | 95.8 | - | 96.7 | 100.0 | 95.4 | 100.0 | - | 95.5 | 100.0 | - | 66.7 | - | 75.0 | 95.7 |
| Buses | 0 | 26 | 1 | - | 27 | 0 | 0 | 0 | - | 0 | 0 | 29 | 0 | - | 29 | 0 | 0 | 2 | - | 2 | 58 |
| % Buses | 0.0 | 2.1 | 1.3 | - | 2.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 2.8 | 0.0 | - | 2.7 | 0.0 | - | 22.2 | - | 16.7 | 2.4 |
| Trucks | 0 | 24 | 1 | - | 25 | 0 | 0 | 1 | - | 1 | 0 | 19 | 0 | - | 19 | 0 | 0 | 1 | - | 1 | 46 |
| % Trucks | 0.0 | 2.0 | 1.3 | - | 1.9 | 0.0 | - | 4.2 | - | 3.3 | 0.0 | 1.8 | 0.0 | - | 1.8 | 0.0 | - | 11.1 | - | 8.3 | 1.9 |
| Bicycles on Road | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 3 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | 27.3 | - | - |
| Pedestrians | - | - | - | 0 | - | - | - | - | 24 | - | - | - | - | 1 | - | - | - | - | 8 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 72.7 | - | - |



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (North)-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 4



Turning Movement Peak Hour Data Plot (7:45 AM)



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (North)-PM
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Turning Movement Data

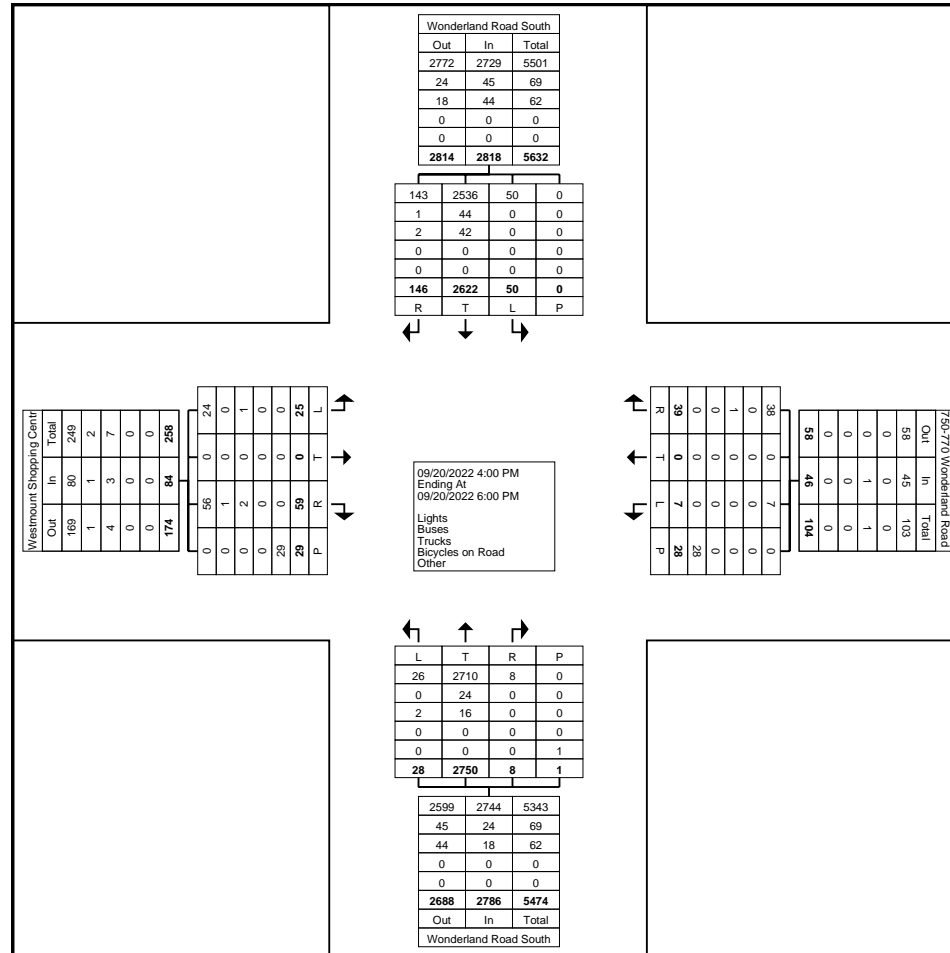
| Start Time | Wonderland Road South Southbound | | | | | 750-770 Wonderland Road South Access - North Westbound | | | | | Wonderland Road South Northbound | | | | | Westmount Shopping Centre Access - North Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|------|-------|------|------------|--------------------------------------------------------|------|-------|-------|------------|----------------------------------|------|-------|-------|------------|----------------------------------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 6 | 356 | 24 | 0 | 386 | 1 | 0 | 5 | 3 | 6 | 5 | 327 | 1 | 0 | 333 | 1 | 0 | 12 | 1 | 13 | 738 |
| 4:15 PM | 10 | 337 | 11 | 0 | 358 | 1 | 0 | 8 | 7 | 9 | 5 | 357 | 1 | 0 | 363 | 2 | 0 | 7 | 1 | 9 | 739 |
| 4:30 PM | 4 | 329 | 14 | 0 | 347 | 1 | 0 | 4 | 1 | 5 | 2 | 332 | 1 | 0 | 335 | 3 | 0 | 3 | 10 | 6 | 693 |
| 4:45 PM | 4 | 332 | 16 | 0 | 352 | 0 | 0 | 5 | 0 | 5 | 2 | 342 | 1 | 0 | 345 | 2 | 0 | 3 | 2 | 5 | 707 |
| Hourly Total | 24 | 1354 | 65 | 0 | 1443 | 3 | 0 | 22 | 11 | 25 | 14 | 1358 | 4 | 0 | 1376 | 8 | 0 | 25 | 14 | 33 | 2877 |
| 5:00 PM | 3 | 319 | 19 | 0 | 341 | 0 | 0 | 4 | 4 | 4 | 3 | 343 | 0 | 0 | 346 | 9 | 0 | 14 | 3 | 23 | 714 |
| 5:15 PM | 6 | 337 | 19 | 0 | 362 | 0 | 0 | 7 | 5 | 7 | 3 | 343 | 0 | 0 | 346 | 3 | 0 | 6 | 4 | 9 | 724 |
| 5:30 PM | 13 | 328 | 18 | 0 | 359 | 2 | 0 | 1 | 4 | 3 | 2 | 347 | 3 | 0 | 352 | 2 | 0 | 5 | 4 | 7 | 721 |
| 5:45 PM | 4 | 284 | 25 | 0 | 313 | 2 | 0 | 5 | 4 | 7 | 6 | 359 | 1 | 1 | 366 | 3 | 0 | 9 | 4 | 12 | 698 |
| Hourly Total | 26 | 1268 | 81 | 0 | 1375 | 4 | 0 | 17 | 17 | 21 | 14 | 1392 | 4 | 1 | 1410 | 17 | 0 | 34 | 15 | 51 | 2857 |
| Grand Total | 50 | 2622 | 146 | 0 | 2818 | 7 | 0 | 39 | 28 | 46 | 28 | 2750 | 8 | 1 | 2786 | 25 | 0 | 59 | 29 | 84 | 5734 |
| Approach % | 1.8 | 93.0 | 5.2 | - | - | 15.2 | 0.0 | 84.8 | - | - | 1.0 | 98.7 | 0.3 | - | - | 29.8 | 0.0 | 70.2 | - | - | - |
| Total % | 0.9 | 45.7 | 2.5 | - | 49.1 | 0.1 | 0.0 | 0.7 | - | 0.8 | 0.5 | 48.0 | 0.1 | - | 48.6 | 0.4 | 0.0 | 1.0 | - | 1.5 | - |
| Lights | 50 | 2536 | 143 | - | 2729 | 7 | 0 | 38 | - | 45 | 26 | 2710 | 8 | - | 2744 | 24 | 0 | 56 | - | 80 | 5598 |
| % Lights | 100.0 | 96.7 | 97.9 | - | 96.8 | 100.0 | - | 97.4 | - | 97.8 | 92.9 | 98.5 | 100.0 | - | 98.5 | 96.0 | - | 94.9 | - | 95.2 | 97.6 |
| Buses | 0 | 44 | 1 | - | 45 | 0 | 0 | 0 | - | 0 | 0 | 24 | 0 | - | 24 | 0 | 0 | 1 | - | 1 | 70 |
| % Buses | 0.0 | 1.7 | 0.7 | - | 1.6 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.9 | 0.0 | - | 0.9 | 0.0 | - | 1.7 | - | 1.2 | 1.2 |
| Trucks | 0 | 42 | 2 | - | 44 | 0 | 0 | 1 | - | 1 | 2 | 16 | 0 | - | 18 | 1 | 0 | 2 | - | 3 | 66 |
| % Trucks | 0.0 | 1.6 | 1.4 | - | 1.6 | 0.0 | - | 2.6 | - | 2.2 | 7.1 | 0.6 | 0.0 | - | 0.6 | 4.0 | - | 3.4 | - | 3.6 | 1.2 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 6 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | 20.7 | - | - |
| Pedestrians | - | - | - | 0 | - | - | - | - | 28 | - | - | - | - | 1 | - | - | - | - | 23 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 79.3 | - | - |



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (North)-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (North)-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (4:00 PM)

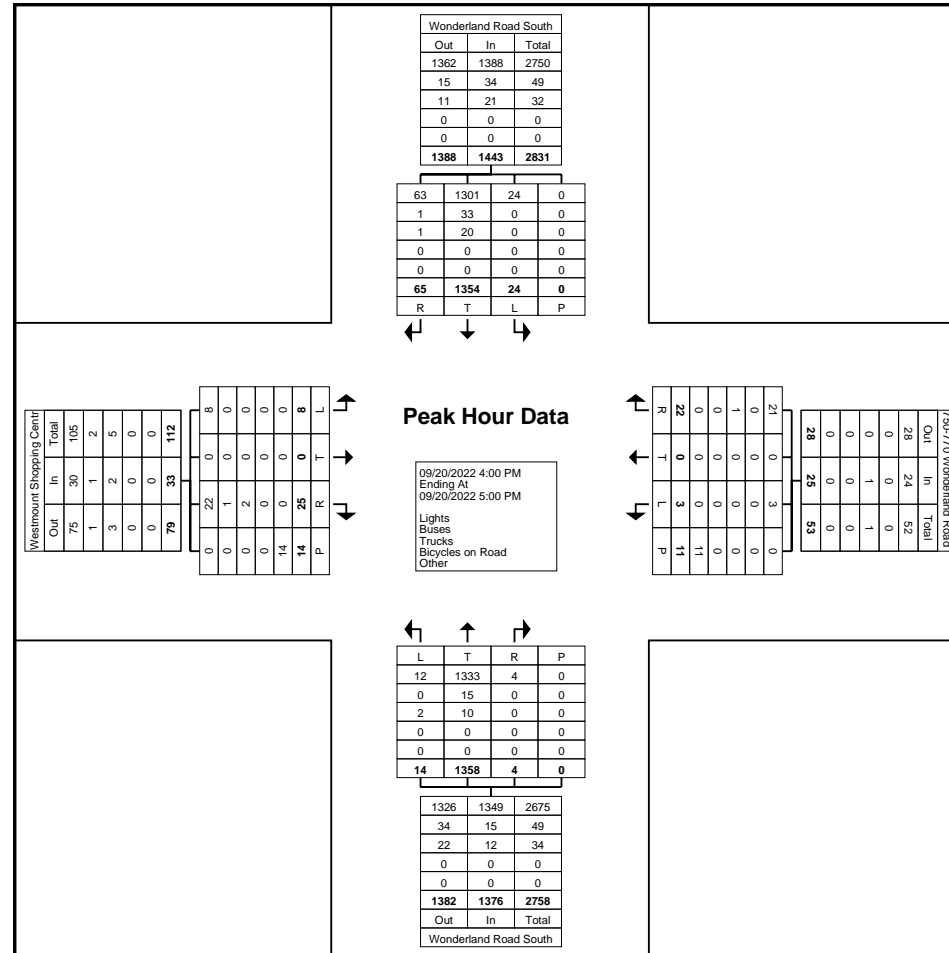
| Start Time | Wonderland Road South Southbound | | | | | 750-770 Wonderland Road South Access - North Westbound | | | | | Wonderland Road South Northbound | | | | | Westmount Shopping Centre Access - North Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|-------|-------|------|------------|--------------------------------------------------------|-------|-------|-------|------------|----------------------------------|-------|-------|------|------------|----------------------------------------------------|-------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 6 | 356 | 24 | 0 | 386 | 1 | 0 | 5 | 3 | 6 | 5 | 327 | 1 | 0 | 333 | 1 | 0 | 12 | 1 | 13 | 738 |
| 4:15 PM | 10 | 337 | 11 | 0 | 358 | 1 | 0 | 8 | 7 | 9 | 5 | 357 | 1 | 0 | 363 | 2 | 0 | 7 | 1 | 9 | 739 |
| 4:30 PM | 4 | 329 | 14 | 0 | 347 | 1 | 0 | 4 | 1 | 5 | 2 | 332 | 1 | 0 | 335 | 3 | 0 | 3 | 10 | 6 | 693 |
| 4:45 PM | 4 | 332 | 16 | 0 | 352 | 0 | 0 | 5 | 0 | 5 | 2 | 342 | 1 | 0 | 345 | 2 | 0 | 3 | 2 | 5 | 707 |
| Total | 24 | 1354 | 65 | 0 | 1443 | 3 | 0 | 22 | 11 | 25 | 14 | 1358 | 4 | 0 | 1376 | 8 | 0 | 25 | 14 | 33 | 2877 |
| Approach % | 1.7 | 93.8 | 4.5 | - | - | 12.0 | 0.0 | 88.0 | - | - | 1.0 | 98.7 | 0.3 | - | - | 24.2 | 0.0 | 75.8 | - | - | - |
| Total % | 0.8 | 47.1 | 2.3 | - | 50.2 | 0.1 | 0.0 | 0.8 | - | 0.9 | 0.5 | 47.2 | 0.1 | - | 47.8 | 0.3 | 0.0 | 0.9 | - | 1.1 | - |
| PHF | 0.600 | 0.951 | 0.677 | - | 0.935 | 0.750 | 0.000 | 0.688 | - | 0.694 | 0.700 | 0.951 | 1.000 | - | 0.948 | 0.667 | 0.000 | 0.521 | - | 0.635 | 0.973 |
| Lights | 24 | 1301 | 63 | - | 1388 | 3 | 0 | 21 | - | 24 | 12 | 1333 | 4 | - | 1349 | 8 | 0 | 22 | - | 30 | 2791 |
| % Lights | 100.0 | 96.1 | 96.9 | - | 96.2 | 100.0 | - | 95.5 | - | 96.0 | 85.7 | 98.2 | 100.0 | - | 98.0 | 100.0 | - | 88.0 | - | 90.9 | 97.0 |
| Buses | 0 | 33 | 1 | - | 34 | 0 | 0 | 0 | - | 0 | 0 | 15 | 0 | - | 15 | 0 | 0 | 1 | - | 1 | 50 |
| % Buses | 0.0 | 2.4 | 1.5 | - | 2.4 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 1.1 | 0.0 | - | 1.1 | 0.0 | - | 4.0 | - | 3.0 | 1.7 |
| Trucks | 0 | 20 | 1 | - | 21 | 0 | 0 | 1 | - | 1 | 2 | 10 | 0 | - | 12 | 0 | 0 | 2 | - | 2 | 36 |
| % Trucks | 0.0 | 1.5 | 1.5 | - | 1.5 | 0.0 | - | 4.5 | - | 4.0 | 14.3 | 0.7 | 0.0 | - | 0.9 | 0.0 | - | 8.0 | - | 6.1 | 1.3 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 3 | - | - |
| % Bicycles on Crosswalk | - | - | - | - | - | - | - | - | 0.0 | - | - | - | - | - | - | - | - | - | 21.4 | - | - |
| Pedestrians | - | - | - | 0 | - | - | - | - | 11 | - | - | - | - | 0 | - | - | - | - | 11 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | 100.0 | - | - | - | - | - | - | - | - | - | 78.6 | - | - |



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (North)-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 4



Turning Movement Peak Hour Data Plot (4:00 PM)



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (South)-
AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

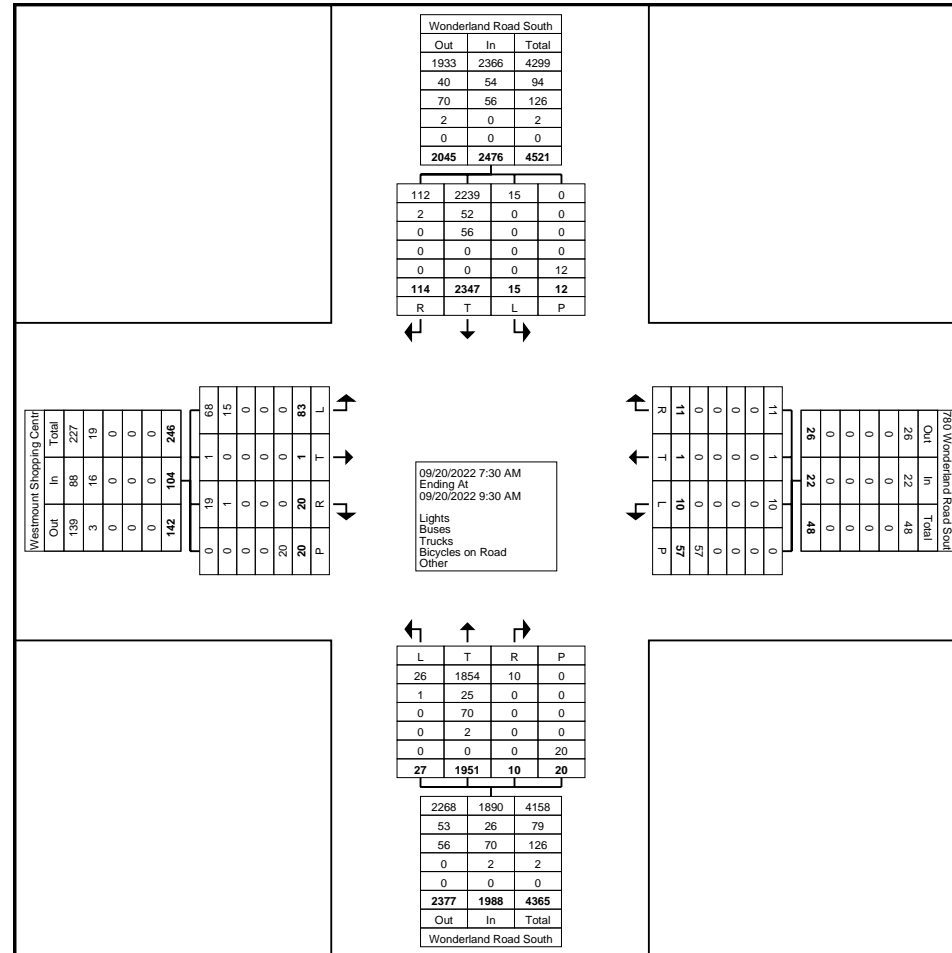
| Start Time | Wonderland Road South Southbound | | | | | 780 Wonderland Road South Access - South Westbound | | | | | Wonderland Road South Northbound | | | | | Westmount Shopping Centre Access - South Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|------|-------|-------|------------|----------------------------------------------------|-------|-------|------|------------|----------------------------------|------|-------|-------|------------|----------------------------------------------------|-------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 4 | 304 | 2 | 0 | 310 | 0 | 0 | 1 | 3 | 1 | 1 | 259 | 0 | 1 | 260 | 5 | 0 | 0 | 3 | 5 | 576 |
| 7:45 AM | 2 | 298 | 23 | 1 | 323 | 1 | 0 | 2 | 16 | 3 | 2 | 304 | 2 | 4 | 308 | 12 | 0 | 4 | 0 | 16 | 650 |
| Hourly Total | 6 | 602 | 25 | 1 | 633 | 1 | 0 | 3 | 19 | 4 | 3 | 563 | 2 | 5 | 568 | 17 | 0 | 4 | 3 | 21 | 1226 |
| 8:00 AM | 3 | 293 | 28 | 2 | 324 | 0 | 0 | 3 | 16 | 3 | 7 | 294 | 1 | 4 | 302 | 26 | 0 | 5 | 4 | 31 | 660 |
| 8:15 AM | 1 | 281 | 16 | 0 | 298 | 1 | 1 | 2 | 2 | 4 | 1 | 226 | 1 | 0 | 228 | 9 | 0 | 0 | 2 | 9 | 539 |
| 8:30 AM | 2 | 285 | 8 | 1 | 295 | 4 | 0 | 1 | 3 | 5 | 1 | 239 | 1 | 5 | 241 | 4 | 1 | 2 | 0 | 7 | 548 |
| 8:45 AM | 0 | 308 | 12 | 3 | 320 | 2 | 0 | 1 | 3 | 3 | 5 | 207 | 2 | 2 | 214 | 9 | 0 | 1 | 4 | 10 | 547 |
| Hourly Total | 6 | 1167 | 64 | 6 | 1237 | 7 | 1 | 7 | 24 | 15 | 14 | 966 | 5 | 11 | 985 | 48 | 1 | 8 | 10 | 57 | 2294 |
| 9:00 AM | 2 | 276 | 7 | 2 | 285 | 0 | 0 | 1 | 7 | 1 | 5 | 211 | 3 | 2 | 219 | 7 | 0 | 1 | 4 | 8 | 513 |
| 9:15 AM | 1 | 302 | 18 | 3 | 321 | 2 | 0 | 0 | 7 | 2 | 5 | 211 | 0 | 2 | 216 | 11 | 0 | 7 | 3 | 18 | 557 |
| Grand Total | 15 | 2347 | 114 | 12 | 2476 | 10 | 1 | 11 | 57 | 22 | 27 | 1951 | 10 | 20 | 1988 | 83 | 1 | 20 | 20 | 104 | 4590 |
| Approach % | 0.6 | 94.8 | 4.6 | - | - | 45.5 | 4.5 | 50.0 | - | - | 1.4 | 98.1 | 0.5 | - | - | 79.8 | 1.0 | 19.2 | - | - | - |
| Total % | 0.3 | 51.1 | 2.5 | - | 53.9 | 0.2 | 0.0 | 0.2 | - | 0.5 | 0.6 | 42.5 | 0.2 | - | 43.3 | 1.8 | 0.0 | 0.4 | - | 2.3 | - |
| Lights | 15 | 2239 | 112 | - | 2366 | 10 | 1 | 11 | - | 22 | 26 | 1854 | 10 | - | 1890 | 68 | 1 | 19 | - | 88 | 4366 |
| % Lights | 100.0 | 95.4 | 98.2 | - | 95.6 | 100.0 | 100.0 | 100.0 | - | 100.0 | 96.3 | 95.0 | 100.0 | - | 95.1 | 81.9 | 100.0 | 95.0 | - | 84.6 | 95.1 |
| Buses | 0 | 52 | 2 | - | 54 | 0 | 0 | 0 | - | 0 | 1 | 25 | 0 | - | 26 | 15 | 0 | 1 | - | 16 | 96 |
| % Buses | 0.0 | 2.2 | 1.8 | - | 2.2 | 0.0 | 0.0 | 0.0 | - | 0.0 | 3.7 | 1.3 | 0.0 | - | 1.3 | 18.1 | 0.0 | 5.0 | - | 15.4 | 2.1 |
| Trucks | 0 | 56 | 0 | - | 56 | 0 | 0 | 0 | - | 0 | 0 | 70 | 0 | - | 70 | 0 | 0 | 0 | - | 0 | 126 |
| % Trucks | 0.0 | 2.4 | 0.0 | - | 2.3 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 3.6 | 0.0 | - | 3.5 | 0.0 | 0.0 | 0.0 | - | 0.0 | 2.7 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 2 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 0 | - | - | - | - | 7 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 3.5 | - | - | - | - | 0.0 | - | - | - | - | 35.0 | - | - |
| Pedestrians | - | - | - | 12 | - | - | - | - | 55 | - | - | - | - | 20 | - | - | - | - | 13 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 96.5 | - | - | - | - | 100.0 | - | - | - | - | 65.0 | - | - |



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (South)-
AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (South)-
AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

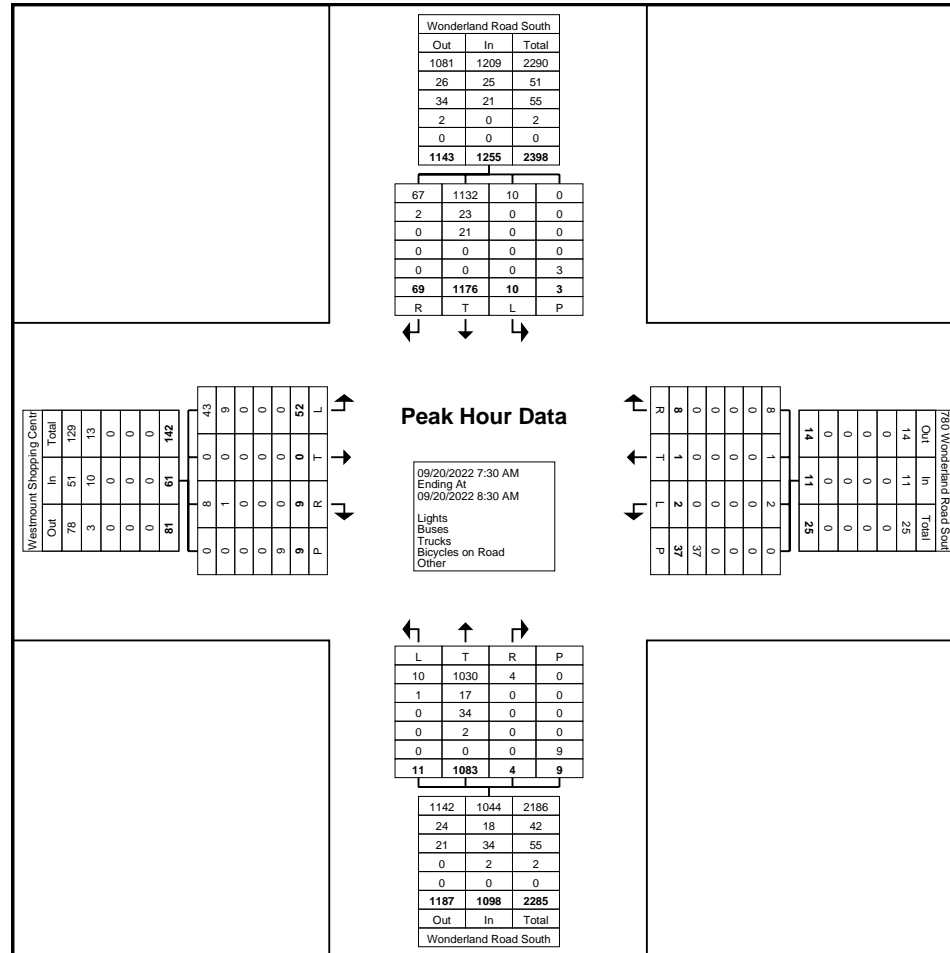
| Start Time | Wonderland Road South Southbound | | | | | 780 Wonderland Road South Access - South Westbound | | | | | Wonderland Road South Northbound | | | | | Westmount Shopping Centre Access - South Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------------|-------------|-----------|----------|-------------|-------------------------------------------------------|----------|----------|-----------|------------|-------------------------------------|-------------|----------|----------|-------------|-------------------------------------------------------|----------|----------|----------|------------|-------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 4 | 304 | 2 | 0 | 310 | 0 | 0 | 1 | 3 | 1 | 1 | 259 | 0 | 1 | 260 | 5 | 0 | 0 | 3 | 5 | 576 |
| 7:45 AM | 2 | 298 | 23 | 1 | 323 | 1 | 0 | 2 | 16 | 3 | 2 | 304 | 2 | 4 | 308 | 12 | 0 | 4 | 0 | 16 | 650 |
| 8:00 AM | 3 | 293 | 28 | 2 | 324 | 0 | 0 | 3 | 16 | 3 | 7 | 294 | 1 | 4 | 302 | 26 | 0 | 5 | 4 | 31 | 660 |
| 8:15 AM | 1 | 281 | 16 | 0 | 298 | 1 | 1 | 2 | 2 | 4 | 1 | 226 | 1 | 0 | 228 | 9 | 0 | 0 | 2 | 9 | 539 |
| Total | 10 | 1176 | 69 | 3 | 1255 | 2 | 1 | 8 | 37 | 11 | 11 | 1083 | 4 | 9 | 1098 | 52 | 0 | 9 | 9 | 61 | 2425 |
| Approach % | 0.8 | 93.7 | 5.5 | - | - | 18.2 | 9.1 | 72.7 | - | - | 1.0 | 98.6 | 0.4 | - | - | 85.2 | 0.0 | 14.8 | - | - | - |
| Total % | 0.4 | 48.5 | 2.8 | - | 51.8 | 0.1 | 0.0 | 0.3 | - | 0.5 | 0.5 | 44.7 | 0.2 | - | 45.3 | 2.1 | 0.0 | 0.4 | - | 2.5 | - |
| PHF | 0.625 | 0.967 | 0.616 | - | 0.968 | 0.500 | 0.250 | 0.667 | - | 0.688 | 0.393 | 0.891 | 0.500 | - | 0.891 | 0.500 | 0.000 | 0.450 | - | 0.492 | 0.919 |
| Lights | 10 | 1132 | 67 | - | 1209 | 2 | 1 | 8 | - | 11 | 10 | 1030 | 4 | - | 1044 | 43 | 0 | 8 | - | 51 | 2315 |
| % Lights | 100.0 | 96.3 | 97.1 | - | 96.3 | 100.0 | 100.0 | 100.0 | - | 100.0 | 90.9 | 95.1 | 100.0 | - | 95.1 | 82.7 | - | 88.9 | - | 83.6 | 95.5 |
| Buses | 0 | 23 | 2 | - | 25 | 0 | 0 | 0 | - | 0 | 1 | 17 | 0 | - | 18 | 9 | 0 | 1 | - | 10 | 53 |
| % Buses | 0.0 | 2.0 | 2.9 | - | 2.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 9.1 | 1.6 | 0.0 | - | 1.6 | 17.3 | - | 11.1 | - | 16.4 | 2.2 |
| Trucks | 0 | 21 | 0 | - | 21 | 0 | 0 | 0 | - | 0 | 0 | 34 | 0 | - | 34 | 0 | 0 | 0 | - | 0 | 55 |
| % Trucks | 0.0 | 1.8 | 0.0 | - | 1.7 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 3.1 | 0.0 | - | 3.1 | 0.0 | - | 0.0 | - | 0.0 | 2.3 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 2 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.2 | 0.0 | - | 0.2 | 0.0 | - | 0.0 | - | 0.0 | 0.1 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 1 | - | - | - | - | 0 | - | - | - | - | 4 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 2.7 | - | - | - | - | 0.0 | - | - | - | - | 44.4 | - | - |
| Pedestrians | - | - | - | 3 | - | - | - | - | 36 | - | - | - | - | 9 | - | - | - | - | 5 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 97.3 | - | - | - | - | 100.0 | - | - | - | - | 55.6 | - | - |



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (South)-
AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 4



Turning Movement Peak Hour Data Plot (7:30 AM)



LEA Consulting Ltd.
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905-470-0015 x240 KIo@LEA.ca

Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (South)-
PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

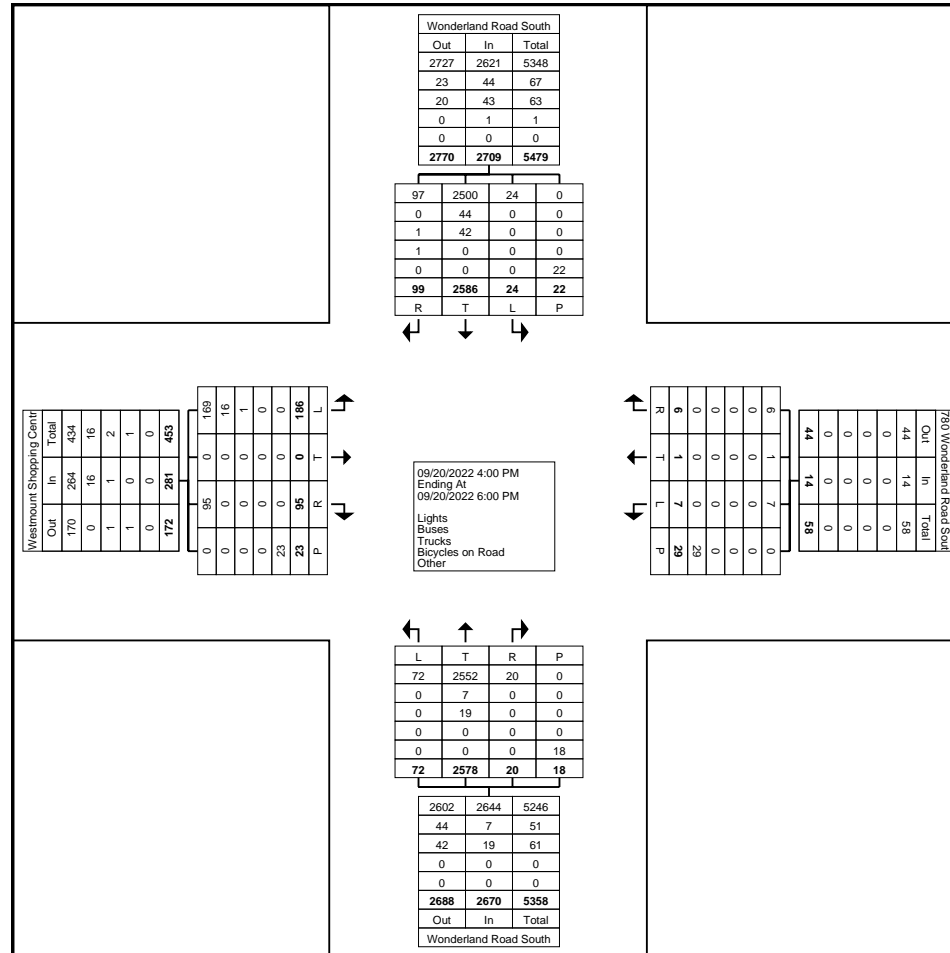
| Start Time | Wonderland Road South Southbound | | | | | 780 Wonderland Road South Access - South Westbound | | | | | Wonderland Road South Northbound | | | | | Westmount Shopping Centre Access - South Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|------|-------|------|------------|----------------------------------------------------|-------|-------|------|------------|----------------------------------|------|-------|-------|------------|----------------------------------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 4 | 361 | 21 | 5 | 386 | 1 | 0 | 2 | 4 | 3 | 9 | 306 | 4 | 4 | 319 | 34 | 0 | 9 | 3 | 43 | 751 |
| 4:15 PM | 3 | 331 | 8 | 1 | 342 | 1 | 0 | 1 | 6 | 2 | 8 | 314 | 0 | 3 | 322 | 25 | 0 | 13 | 2 | 38 | 704 |
| 4:30 PM | 4 | 321 | 11 | 2 | 336 | 0 | 0 | 0 | 2 | 0 | 7 | 335 | 5 | 2 | 347 | 23 | 0 | 11 | 6 | 34 | 717 |
| 4:45 PM | 2 | 336 | 10 | 0 | 348 | 2 | 0 | 1 | 2 | 3 | 4 | 318 | 4 | 1 | 326 | 25 | 0 | 9 | 1 | 34 | 711 |
| Hourly Total | 13 | 1349 | 50 | 8 | 1412 | 4 | 0 | 4 | 14 | 8 | 28 | 1273 | 13 | 10 | 1314 | 107 | 0 | 42 | 12 | 149 | 2883 |
| 5:00 PM | 3 | 314 | 10 | 2 | 327 | 1 | 0 | 0 | 4 | 1 | 6 | 339 | 2 | 4 | 347 | 24 | 0 | 11 | 2 | 35 | 710 |
| 5:15 PM | 2 | 323 | 13 | 5 | 338 | 0 | 1 | 0 | 3 | 1 | 9 | 312 | 2 | 3 | 323 | 21 | 0 | 8 | 3 | 29 | 691 |
| 5:30 PM | 4 | 325 | 15 | 3 | 344 | 0 | 0 | 0 | 3 | 0 | 13 | 321 | 2 | 1 | 336 | 15 | 0 | 17 | 3 | 32 | 712 |
| 5:45 PM | 2 | 275 | 11 | 4 | 288 | 2 | 0 | 2 | 5 | 4 | 16 | 333 | 1 | 0 | 350 | 19 | 0 | 17 | 3 | 36 | 678 |
| Hourly Total | 11 | 1237 | 49 | 14 | 1297 | 3 | 1 | 2 | 15 | 6 | 44 | 1305 | 7 | 8 | 1356 | 79 | 0 | 53 | 11 | 132 | 2791 |
| Grand Total | 24 | 2586 | 99 | 22 | 2709 | 7 | 1 | 6 | 29 | 14 | 72 | 2578 | 20 | 18 | 2670 | 186 | 0 | 95 | 23 | 281 | 5674 |
| Approach % | 0.9 | 95.5 | 3.7 | - | - | 50.0 | 7.1 | 42.9 | - | - | 2.7 | 96.6 | 0.7 | - | - | 66.2 | 0.0 | 33.8 | - | - | - |
| Total % | 0.4 | 45.6 | 1.7 | - | 47.7 | 0.1 | 0.0 | 0.1 | - | 0.2 | 1.3 | 45.4 | 0.4 | - | 47.1 | 3.3 | 0.0 | 1.7 | - | 5.0 | - |
| Lights | 24 | 2500 | 97 | - | 2621 | 7 | 1 | 6 | - | 14 | 72 | 2552 | 20 | - | 2644 | 169 | 0 | 95 | - | 264 | 5543 |
| % Lights | 100.0 | 96.7 | 98.0 | - | 96.8 | 100.0 | 100.0 | 100.0 | - | 100.0 | 100.0 | 99.0 | 100.0 | - | 99.0 | 90.9 | - | 100.0 | - | 94.0 | 97.7 |
| Buses | 0 | 44 | 0 | - | 44 | 0 | 0 | 0 | - | 0 | 0 | 7 | 0 | - | 7 | 16 | 0 | 0 | - | 16 | 67 |
| % Buses | 0.0 | 1.7 | 0.0 | - | 1.6 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.3 | 0.0 | - | 0.3 | 8.6 | - | 0.0 | - | 5.7 | 1.2 |
| Trucks | 0 | 42 | 1 | - | 43 | 0 | 0 | 0 | - | 0 | 0 | 19 | 0 | - | 19 | 1 | 0 | 0 | - | 1 | 63 |
| % Trucks | 0.0 | 1.6 | 1.0 | - | 1.6 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.7 | 0.0 | - | 0.7 | 0.5 | - | 0.0 | - | 0.4 | 1.1 |
| Bicycles on Road | 0 | 0 | 1 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.0 | 1.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 5 | - | - | - | - | 7 | - | - | - | - | 0 | - | - | - | - | 9 | - | - |
| % Bicycles on Crosswalk | - | - | - | 22.7 | - | - | - | - | 24.1 | - | - | - | - | 0.0 | - | - | - | - | 39.1 | - | - |
| Pedestrians | - | - | - | 17 | - | - | - | - | 22 | - | - | - | - | 18 | - | - | - | - | 14 | - | - |
| % Pedestrians | - | - | - | 77.3 | - | - | - | - | 75.9 | - | - | - | - | 100.0 | - | - | - | - | 60.9 | - | - |



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (South)-
PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Markam, Ontario, Canada L3R 9R9
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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (South)-
PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (4:00 PM)

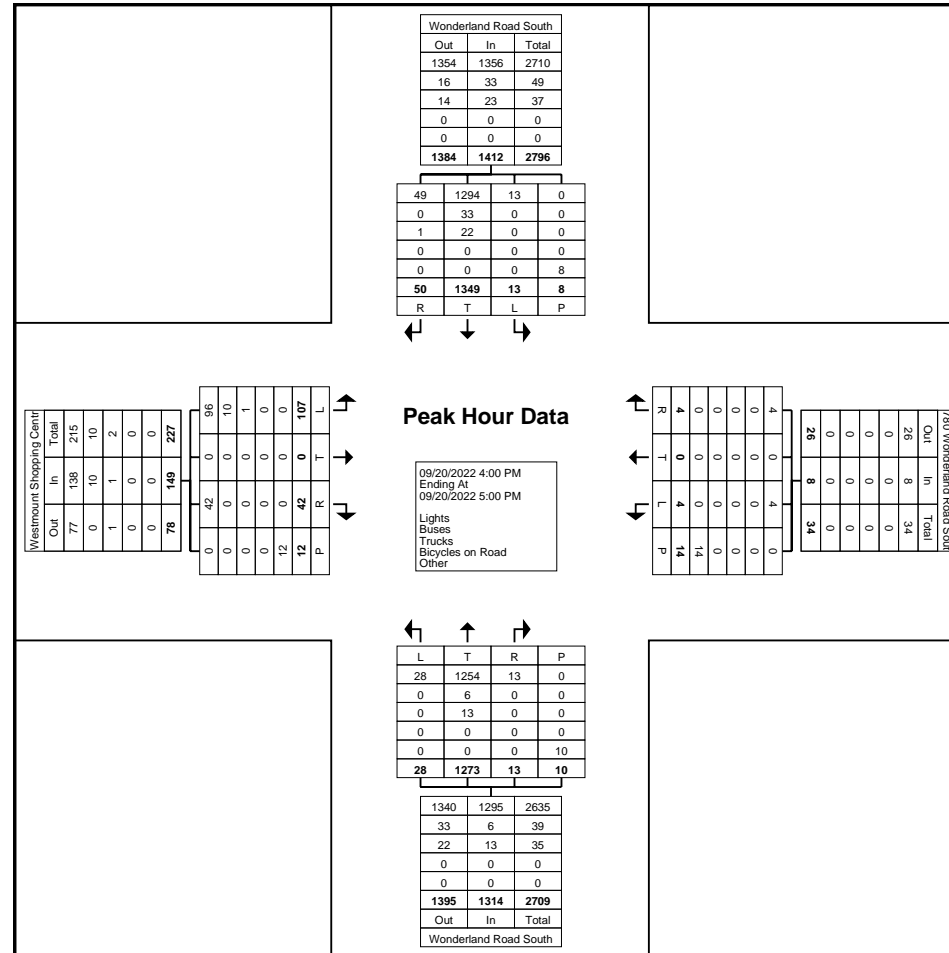
| Start Time | Wonderland Road South Southbound | | | | | 780 Wonderland Road South Access - South Westbound | | | | | Wonderland Road South Northbound | | | | | Westmount Shopping Centre Access - South Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|-------|-------|-------|------------|----------------------------------------------------|-------|-------|------|------------|----------------------------------|-------|-------|-------|------------|----------------------------------------------------|-------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 4 | 361 | 21 | 5 | 386 | 1 | 0 | 2 | 4 | 3 | 9 | 306 | 4 | 4 | 319 | 34 | 0 | 9 | 3 | 43 | 751 |
| 4:15 PM | 3 | 331 | 8 | 1 | 342 | 1 | 0 | 1 | 6 | 2 | 8 | 314 | 0 | 3 | 322 | 25 | 0 | 13 | 2 | 38 | 704 |
| 4:30 PM | 4 | 321 | 11 | 2 | 336 | 0 | 0 | 0 | 2 | 0 | 7 | 335 | 5 | 2 | 347 | 23 | 0 | 11 | 6 | 34 | 717 |
| 4:45 PM | 2 | 336 | 10 | 0 | 348 | 2 | 0 | 1 | 2 | 3 | 4 | 318 | 4 | 1 | 326 | 25 | 0 | 9 | 1 | 34 | 711 |
| Total | 13 | 1349 | 50 | 8 | 1412 | 4 | 0 | 4 | 14 | 8 | 28 | 1273 | 13 | 10 | 1314 | 107 | 0 | 42 | 12 | 149 | 2883 |
| Approach % | 0.9 | 95.5 | 3.5 | - | - | 50.0 | 0.0 | 50.0 | - | - | 2.1 | 96.9 | 1.0 | - | - | 71.8 | 0.0 | 28.2 | - | - | - |
| Total % | 0.5 | 46.8 | 1.7 | - | 49.0 | 0.1 | 0.0 | 0.1 | - | 0.3 | 1.0 | 44.2 | 0.5 | - | 45.6 | 3.7 | 0.0 | 1.5 | - | 5.2 | - |
| PHF | 0.813 | 0.934 | 0.595 | - | 0.915 | 0.500 | 0.000 | 0.500 | - | 0.667 | 0.778 | 0.950 | 0.650 | - | 0.947 | 0.787 | 0.000 | 0.808 | - | 0.866 | 0.960 |
| Lights | 13 | 1294 | 49 | - | 1356 | 4 | 0 | 4 | - | 8 | 28 | 1254 | 13 | - | 1295 | 96 | 0 | 42 | - | 138 | 2797 |
| % Lights | 100.0 | 95.9 | 98.0 | - | 96.0 | 100.0 | - | 100.0 | - | 100.0 | 100.0 | 98.5 | 100.0 | - | 98.6 | 89.7 | - | 100.0 | - | 92.6 | 97.0 |
| Buses | 0 | 33 | 0 | - | 33 | 0 | 0 | 0 | - | 0 | 0 | 6 | 0 | - | 6 | 10 | 0 | 0 | - | 10 | 49 |
| % Buses | 0.0 | 2.4 | 0.0 | - | 2.3 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.5 | 0.0 | - | 0.5 | 9.3 | - | 0.0 | - | 6.7 | 1.7 |
| Trucks | 0 | 22 | 1 | - | 23 | 0 | 0 | 0 | - | 0 | 0 | 13 | 0 | - | 13 | 1 | 0 | 0 | - | 1 | 37 |
| % Trucks | 0.0 | 1.6 | 2.0 | - | 1.6 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 1.0 | 0.0 | - | 1.0 | 0.9 | - | 0.0 | - | 0.7 | 1.3 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 0 | - | - | - | - | 5 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 14.3 | - | - | - | - | 0.0 | - | - | - | - | 41.7 | - | - |
| Pedestrians | - | - | - | 8 | - | - | - | - | 12 | - | - | - | - | 10 | - | - | - | - | 7 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 85.7 | - | - | - | - | 100.0 | - | - | - | - | 58.3 | - | - |



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Count Name: 23181_Wonderland Rd S &
Westmount Shopping Centre Access (South)-
PM
Site Code: 23181
Start Date: 09/20/2022
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Turning Movement Peak Hour Data Plot (4:00 PM)



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Count Name: 23181_Wonderland Rd S &
Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

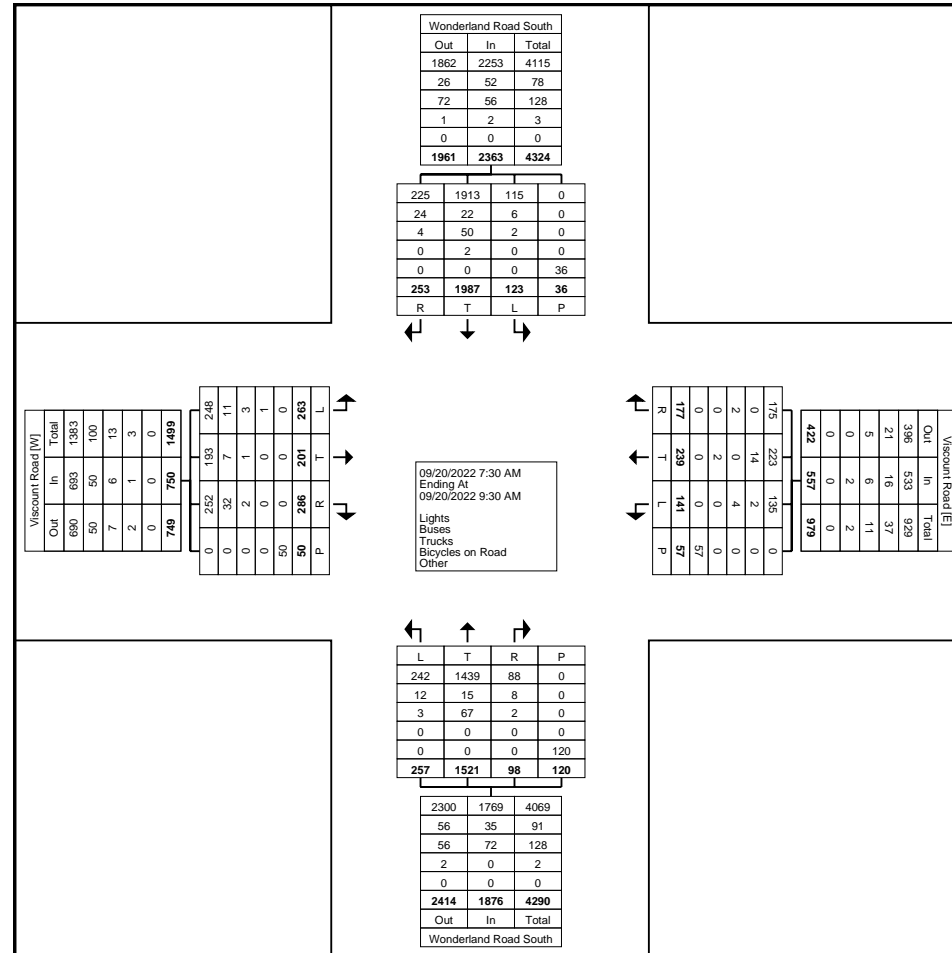
| Start Time | Wonderland Road South Southbound | | | | | Viscount Road Westbound | | | | | Wonderland Road South Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------------|------|-------|------|------------|----------------------------|------|-------|-------|------------|-------------------------------------|------|-------|------|------------|----------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 7 | 247 | 38 | 3 | 292 | 9 | 20 | 22 | 7 | 51 | 19 | 207 | 7 | 9 | 233 | 23 | 17 | 20 | 2 | 60 | 636 |
| 7:45 AM | 10 | 237 | 47 | 7 | 294 | 23 | 48 | 21 | 14 | 92 | 45 | 247 | 10 | 48 | 302 | 45 | 35 | 31 | 8 | 111 | 799 |
| Hourly Total | 17 | 484 | 85 | 10 | 586 | 32 | 68 | 43 | 21 | 143 | 64 | 454 | 17 | 57 | 535 | 68 | 52 | 51 | 10 | 171 | 1435 |
| 8:00 AM | 20 | 258 | 39 | 11 | 317 | 16 | 64 | 23 | 18 | 103 | 52 | 204 | 9 | 38 | 265 | 58 | 48 | 62 | 15 | 168 | 853 |
| 8:15 AM | 15 | 234 | 26 | 5 | 275 | 26 | 37 | 19 | 5 | 82 | 23 | 175 | 10 | 3 | 208 | 25 | 31 | 36 | 3 | 92 | 657 |
| 8:30 AM | 15 | 243 | 35 | 2 | 293 | 6 | 10 | 23 | 5 | 39 | 19 | 188 | 13 | 5 | 220 | 25 | 17 | 26 | 5 | 68 | 620 |
| 8:45 AM | 23 | 250 | 17 | 4 | 290 | 26 | 18 | 23 | 1 | 67 | 38 | 170 | 29 | 4 | 237 | 28 | 18 | 42 | 7 | 88 | 682 |
| Hourly Total | 73 | 985 | 117 | 22 | 1175 | 74 | 129 | 88 | 29 | 291 | 132 | 737 | 61 | 50 | 930 | 136 | 114 | 166 | 30 | 416 | 2812 |
| 9:00 AM | 10 | 243 | 31 | 4 | 284 | 22 | 23 | 28 | 3 | 73 | 32 | 158 | 8 | 7 | 198 | 35 | 19 | 41 | 6 | 95 | 650 |
| 9:15 AM | 23 | 275 | 20 | 0 | 318 | 13 | 19 | 18 | 4 | 50 | 29 | 172 | 12 | 6 | 213 | 24 | 16 | 28 | 4 | 68 | 649 |
| Grand Total | 123 | 1987 | 253 | 36 | 2363 | 141 | 239 | 177 | 57 | 557 | 257 | 1521 | 98 | 120 | 1876 | 263 | 201 | 286 | 50 | 750 | 5546 |
| Approach % | 5.2 | 84.1 | 10.7 | - | - | 25.3 | 42.9 | 31.8 | - | - | 13.7 | 81.1 | 5.2 | - | - | 35.1 | 26.8 | 38.1 | - | - | - |
| Total % | 2.2 | 35.8 | 4.6 | - | 42.6 | 2.5 | 4.3 | 3.2 | - | 10.0 | 4.6 | 27.4 | 1.8 | - | 33.8 | 4.7 | 3.6 | 5.2 | - | 13.5 | - |
| Lights | 115 | 1913 | 225 | - | 2253 | 135 | 223 | 175 | - | 533 | 242 | 1439 | 88 | - | 1769 | 248 | 193 | 252 | - | 693 | 5248 |
| % Lights | 93.5 | 96.3 | 88.9 | - | 95.3 | 95.7 | 93.3 | 88.9 | - | 95.7 | 94.2 | 94.6 | 89.8 | - | 94.3 | 94.3 | 96.0 | 88.1 | - | 92.4 | 94.6 |
| Buses | 6 | 22 | 24 | - | 52 | 2 | 14 | 0 | - | 16 | 12 | 15 | 8 | - | 35 | 11 | 7 | 32 | - | 50 | 153 |
| % Buses | 4.9 | 1.1 | 9.5 | - | 2.2 | 1.4 | 5.9 | 0.0 | - | 2.9 | 4.7 | 1.0 | 8.2 | - | 1.9 | 4.2 | 3.5 | 11.2 | - | 6.7 | 2.8 |
| Trucks | 2 | 50 | 4 | - | 56 | 4 | 0 | 2 | - | 6 | 3 | 67 | 2 | - | 72 | 3 | 1 | 2 | - | 6 | 140 |
| % Trucks | 1.6 | 2.5 | 1.6 | - | 2.4 | 2.8 | 0.0 | 1.1 | - | 1.1 | 1.2 | 4.4 | 2.0 | - | 3.8 | 1.1 | 0.5 | 0.7 | - | 0.8 | 2.5 |
| Bicycles on Road | 0 | 2 | 0 | - | 2 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 1 | 0 | 0 | - | 1 | 5 |
| % Bicycles on Road | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.0 | 0.8 | 0.0 | - | 0.4 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.4 | 0.0 | 0.0 | - | 0.1 | 0.1 |
| Bicycles on Crosswalk | - | - | - | 3 | - | - | - | - | 0 | - | - | - | - | 11 | - | - | - | - | 3 | - | - |
| % Bicycles on Crosswalk | - | - | - | 8.3 | - | - | - | - | 0.0 | - | - | - | - | 9.2 | - | - | - | - | 6.0 | - | - |
| Pedestrians | - | - | - | 33 | - | - | - | - | 57 | - | - | - | - | 109 | - | - | - | - | 47 | - | - |
| % Pedestrians | - | - | - | 91.7 | - | - | - | - | 100.0 | - | - | - | - | 90.8 | - | - | - | - | 94.0 | - | - |



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Count Name: 23181_Wonderland Rd S &
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Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Count Name: 23181_Wonderland Rd S &
Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

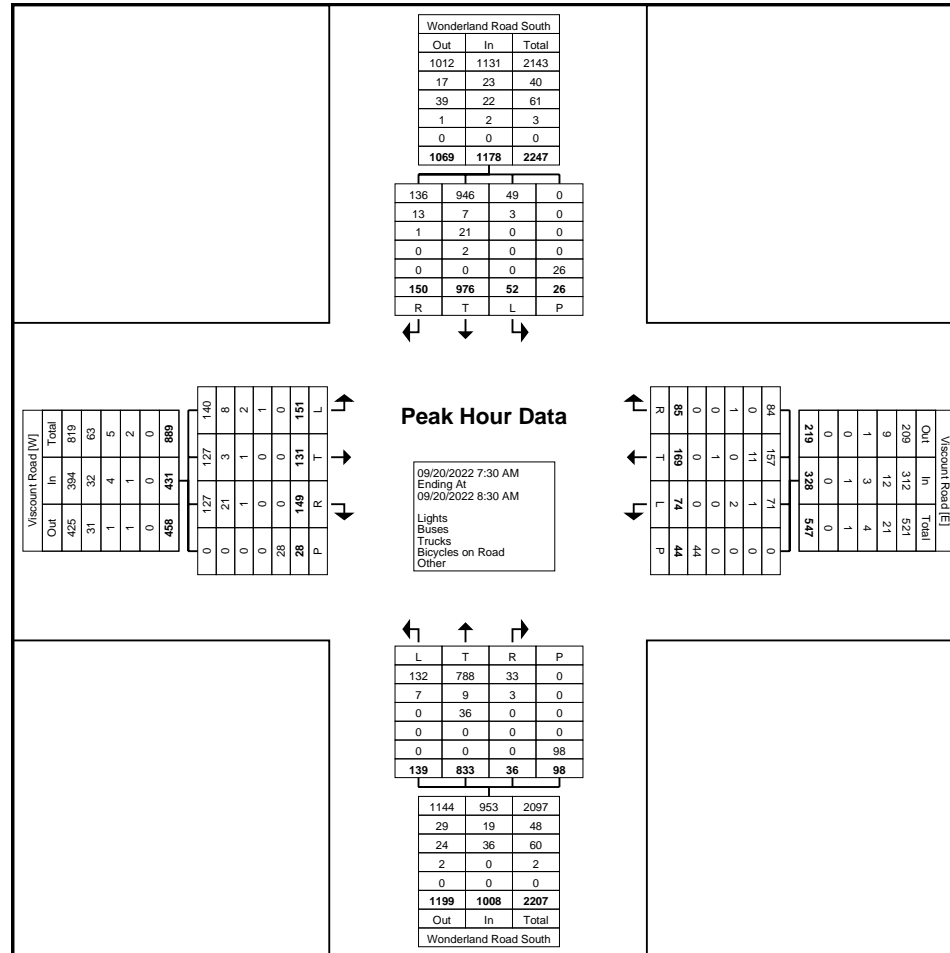
| Start Time | Wonderland Road South Southbound | | | | | Viscount Road Westbound | | | | | Wonderland Road South Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|-------|-------|------|------------|-------------------------|-------|-------|-------|------------|----------------------------------|-------|-------|------|------------|-------------------------|-------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 7 | 247 | 38 | 3 | 292 | 9 | 20 | 22 | 7 | 51 | 19 | 207 | 7 | 9 | 233 | 23 | 17 | 20 | 2 | 60 | 636 |
| 7:45 AM | 10 | 237 | 47 | 7 | 294 | 23 | 48 | 21 | 14 | 92 | 45 | 247 | 10 | 48 | 302 | 45 | 35 | 31 | 8 | 111 | 799 |
| 8:00 AM | 20 | 258 | 39 | 11 | 317 | 16 | 64 | 23 | 18 | 103 | 52 | 204 | 9 | 38 | 265 | 58 | 48 | 62 | 15 | 168 | 853 |
| 8:15 AM | 15 | 234 | 26 | 5 | 275 | 26 | 37 | 19 | 5 | 82 | 23 | 175 | 10 | 3 | 208 | 25 | 31 | 36 | 3 | 92 | 657 |
| Total | 52 | 976 | 150 | 26 | 1178 | 74 | 169 | 85 | 44 | 328 | 139 | 833 | 36 | 98 | 1008 | 151 | 131 | 149 | 28 | 431 | 2945 |
| Approach % | 4.4 | 82.9 | 12.7 | - | - | 22.6 | 51.5 | 25.9 | - | - | 13.8 | 82.6 | 3.6 | - | - | 35.0 | 30.4 | 34.6 | - | - | - |
| Total % | 1.8 | 33.1 | 5.1 | - | 40.0 | 2.5 | 5.7 | 2.9 | - | 11.1 | 4.7 | 28.3 | 1.2 | - | 34.2 | 5.1 | 4.4 | 5.1 | - | 14.6 | - |
| PHF | 0.650 | 0.946 | 0.798 | - | 0.929 | 0.712 | 0.660 | 0.924 | - | 0.796 | 0.668 | 0.843 | 0.900 | - | 0.834 | 0.651 | 0.682 | 0.601 | - | 0.641 | 0.863 |
| Lights | 49 | 946 | 136 | - | 1131 | 71 | 157 | 84 | - | 312 | 132 | 788 | 33 | - | 953 | 140 | 127 | 127 | - | 394 | 2790 |
| % Lights | 94.2 | 96.9 | 90.7 | - | 96.0 | 95.9 | 92.9 | 98.8 | - | 95.1 | 95.0 | 94.6 | 91.7 | - | 94.5 | 92.7 | 96.9 | 85.2 | - | 91.4 | 94.7 |
| Buses | 3 | 7 | 13 | - | 23 | 1 | 11 | 0 | - | 12 | 7 | 9 | 3 | - | 19 | 8 | 3 | 21 | - | 32 | 86 |
| % Buses | 5.8 | 0.7 | 8.7 | - | 2.0 | 1.4 | 6.5 | 0.0 | - | 3.7 | 5.0 | 1.1 | 8.3 | - | 1.9 | 5.3 | 2.3 | 14.1 | - | 7.4 | 2.9 |
| Trucks | 0 | 21 | 1 | - | 22 | 2 | 0 | 1 | - | 3 | 0 | 36 | 0 | - | 36 | 2 | 1 | 1 | - | 4 | 65 |
| % Trucks | 0.0 | 2.2 | 0.7 | - | 1.9 | 2.7 | 0.0 | 1.2 | - | 0.9 | 0.0 | 4.3 | 0.0 | - | 3.6 | 1.3 | 0.8 | 0.7 | - | 0.9 | 2.2 |
| Bicycles on Road | 0 | 2 | 0 | - | 2 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 1 | 0 | 0 | - | 1 | 4 |
| % Bicycles on Road | 0.0 | 0.2 | 0.0 | - | 0.2 | 0.0 | 0.6 | 0.0 | - | 0.3 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.7 | 0.0 | 0.0 | - | 0.2 | 0.1 |
| Bicycles on Crosswalk | - | - | - | 2 | - | - | - | - | 0 | - | - | - | - | 9 | - | - | - | - | 1 | - | - |
| % Bicycles on Crosswalk | - | - | - | 7.7 | - | - | - | - | 0.0 | - | - | - | - | 9.2 | - | - | - | - | 3.6 | - | - |
| Pedestrians | - | - | - | 24 | - | - | - | - | 44 | - | - | - | - | 89 | - | - | - | - | 27 | - | - |
| % Pedestrians | - | - | - | 92.3 | - | - | - | - | 100.0 | - | - | - | - | 90.8 | - | - | - | - | 96.4 | - | - |



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Count Name: 23181_Wonderland Rd S &
Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
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Turning Movement Peak Hour Data Plot (7:30 AM)



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Count Name: 23181_Wonderland Rd S &
Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

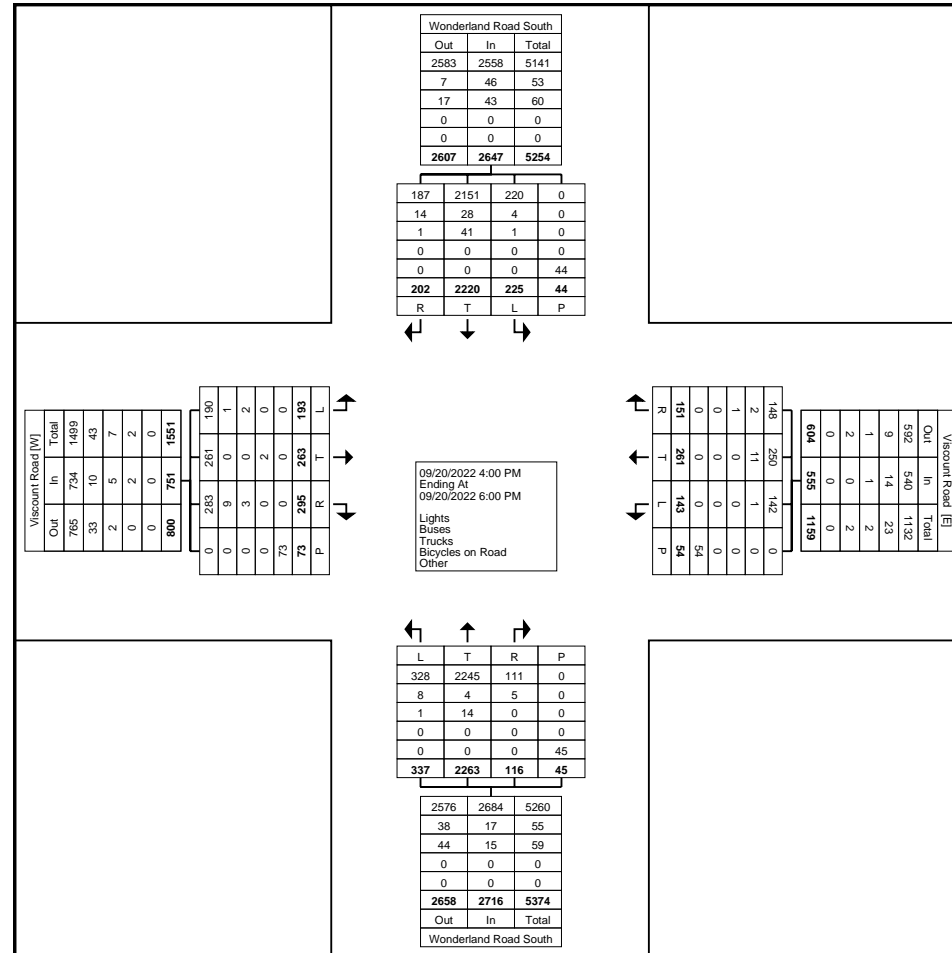
| Start Time | Wonderland Road South Southbound | | | | | Viscount Road Westbound | | | | | Wonderland Road South Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|------|-------|------|------------|-------------------------|------|-------|------|------------|----------------------------------|------|-------|------|------------|-------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 35 | 288 | 40 | 4 | 363 | 25 | 33 | 17 | 1 | 75 | 31 | 255 | 8 | 4 | 294 | 34 | 44 | 36 | 12 | 114 | 846 |
| 4:15 PM | 23 | 286 | 23 | 4 | 332 | 15 | 25 | 12 | 9 | 52 | 38 | 292 | 16 | 9 | 346 | 23 | 37 | 39 | 5 | 99 | 829 |
| 4:30 PM | 27 | 271 | 26 | 5 | 324 | 12 | 34 | 17 | 11 | 63 | 45 | 282 | 15 | 5 | 342 | 25 | 25 | 28 | 9 | 78 | 807 |
| 4:45 PM | 29 | 273 | 27 | 5 | 329 | 21 | 29 | 21 | 6 | 71 | 43 | 274 | 20 | 5 | 337 | 24 | 37 | 54 | 8 | 115 | 852 |
| Hourly Total | 114 | 1118 | 116 | 18 | 1348 | 73 | 121 | 67 | 27 | 261 | 157 | 1103 | 59 | 23 | 1319 | 106 | 143 | 157 | 34 | 406 | 3334 |
| 5:00 PM | 29 | 270 | 23 | 1 | 322 | 20 | 35 | 19 | 2 | 74 | 44 | 291 | 16 | 10 | 351 | 20 | 35 | 39 | 11 | 94 | 841 |
| 5:15 PM | 26 | 278 | 28 | 10 | 332 | 14 | 37 | 34 | 9 | 85 | 43 | 300 | 13 | 3 | 356 | 19 | 24 | 45 | 8 | 88 | 861 |
| 5:30 PM | 31 | 288 | 22 | 6 | 341 | 22 | 31 | 12 | 8 | 65 | 57 | 272 | 14 | 5 | 343 | 22 | 30 | 27 | 7 | 79 | 828 |
| 5:45 PM | 25 | 266 | 13 | 9 | 304 | 14 | 37 | 19 | 8 | 70 | 36 | 297 | 14 | 4 | 347 | 26 | 31 | 27 | 13 | 84 | 805 |
| Hourly Total | 111 | 1102 | 86 | 26 | 1299 | 70 | 140 | 84 | 27 | 294 | 180 | 1160 | 57 | 22 | 1397 | 87 | 120 | 138 | 39 | 345 | 3335 |
| Grand Total | 225 | 2220 | 202 | 44 | 2647 | 143 | 261 | 151 | 54 | 555 | 337 | 2263 | 116 | 45 | 2716 | 193 | 263 | 295 | 73 | 751 | 6669 |
| Approach % | 8.5 | 83.9 | 7.6 | - | - | 25.8 | 47.0 | 27.2 | - | - | 12.4 | 83.3 | 4.3 | - | - | 25.7 | 35.0 | 39.3 | - | - | - |
| Total % | 3.4 | 33.3 | 3.0 | - | 39.7 | 2.1 | 3.9 | 2.3 | - | 8.3 | 5.1 | 33.9 | 1.7 | - | 40.7 | 2.9 | 3.9 | 4.4 | - | 11.3 | - |
| Lights | 220 | 2151 | 187 | - | 2558 | 142 | 250 | 148 | - | 540 | 328 | 2245 | 111 | - | 2684 | 190 | 261 | 283 | - | 734 | 6516 |
| % Lights | 97.8 | 96.9 | 92.6 | - | 96.6 | 99.3 | 95.8 | 98.0 | - | 97.3 | 97.3 | 99.2 | 95.7 | - | 98.8 | 98.4 | 99.2 | 95.9 | - | 97.7 | 97.7 |
| Buses | 4 | 28 | 14 | - | 46 | 1 | 11 | 2 | - | 14 | 8 | 4 | 5 | - | 17 | 1 | 0 | 9 | - | 10 | 87 |
| % Buses | 1.8 | 1.3 | 6.9 | - | 1.7 | 0.7 | 4.2 | 1.3 | - | 2.5 | 2.4 | 0.2 | 4.3 | - | 0.6 | 0.5 | 0.0 | 3.1 | - | 1.3 | 1.3 |
| Trucks | 1 | 41 | 1 | - | 43 | 0 | 0 | 1 | - | 1 | 1 | 14 | 0 | - | 15 | 2 | 0 | 3 | - | 5 | 64 |
| % Trucks | 0.4 | 1.8 | 0.5 | - | 1.6 | 0.0 | 0.0 | 0.7 | - | 0.2 | 0.3 | 0.6 | 0.0 | - | 0.6 | 1.0 | 0.0 | 1.0 | - | 0.7 | 1.0 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 2 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.8 | 0.0 | - | 0.3 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 6 | - | - | - | - | 9 | - | - | - | - | 5 | - | - | - | - | 7 | - | - |
| % Bicycles on Crosswalk | - | - | - | 13.6 | - | - | - | - | 16.7 | - | - | - | - | 11.1 | - | - | - | - | 9.6 | - | - |
| Pedestrians | - | - | - | 38 | - | - | - | - | 45 | - | - | - | - | 40 | - | - | - | - | 66 | - | - |
| % Pedestrians | - | - | - | 86.4 | - | - | - | - | 83.3 | - | - | - | - | 88.9 | - | - | - | - | 90.4 | - | - |



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Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 KIo@LEA.ca

Count Name: 23181_Wonderland Rd S &
Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Markam, Ontario, Canada L3R 9R9
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Count Name: 23181_Wonderland Rd S &
Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (4:45 PM)

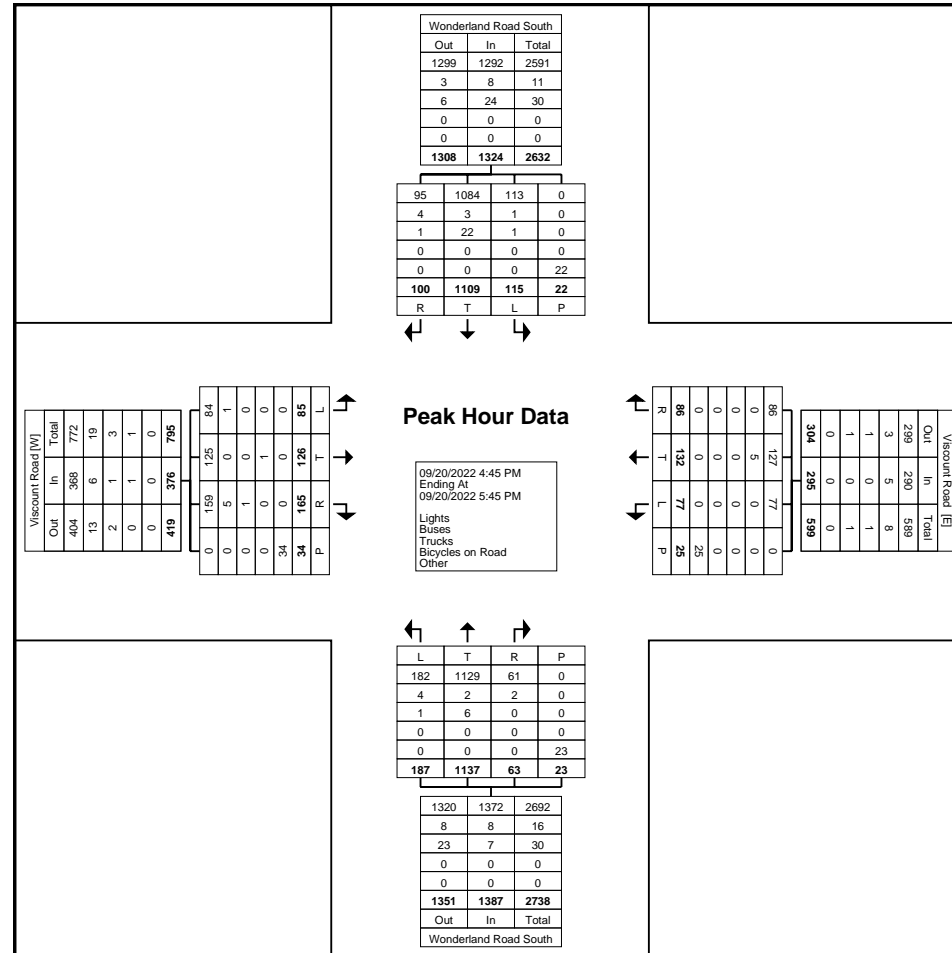
| Start Time | Wonderland Road South Southbound | | | | | Viscount Road Westbound | | | | | Wonderland Road South Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|-------|-------|------|------------|-------------------------|-------|-------|------|------------|----------------------------------|-------|-------|------|------------|-------------------------|-------|-------|-------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:45 PM | 29 | 273 | 27 | 5 | 329 | 21 | 29 | 21 | 6 | 71 | 43 | 274 | 20 | 5 | 337 | 24 | 37 | 54 | 8 | 115 | 852 |
| 5:00 PM | 29 | 270 | 23 | 1 | 322 | 20 | 35 | 19 | 2 | 74 | 44 | 291 | 16 | 10 | 351 | 20 | 35 | 39 | 11 | 94 | 841 |
| 5:15 PM | 26 | 278 | 28 | 10 | 332 | 14 | 37 | 34 | 9 | 85 | 43 | 300 | 13 | 3 | 356 | 19 | 24 | 45 | 8 | 88 | 861 |
| 5:30 PM | 31 | 288 | 22 | 6 | 341 | 22 | 31 | 12 | 8 | 65 | 57 | 272 | 14 | 5 | 343 | 22 | 30 | 27 | 7 | 79 | 828 |
| Total | 115 | 1109 | 100 | 22 | 1324 | 77 | 132 | 86 | 25 | 295 | 187 | 1137 | 63 | 23 | 1387 | 85 | 126 | 165 | 34 | 376 | 3382 |
| Approach % | 8.7 | 83.8 | 7.6 | - | - | 26.1 | 44.7 | 29.2 | - | - | 13.5 | 82.0 | 4.5 | - | - | 22.6 | 33.5 | 43.9 | - | - | - |
| Total % | 3.4 | 32.8 | 3.0 | - | 39.1 | 2.3 | 3.9 | 2.5 | - | 8.7 | 5.5 | 33.6 | 1.9 | - | 41.0 | 2.5 | 3.7 | 4.9 | - | 11.1 | - |
| PHF | 0.927 | 0.963 | 0.893 | - | 0.971 | 0.875 | 0.892 | 0.632 | - | 0.868 | 0.820 | 0.948 | 0.788 | - | 0.974 | 0.885 | 0.851 | 0.764 | - | 0.817 | 0.982 |
| Lights | 113 | 1084 | 95 | - | 1292 | 77 | 127 | 86 | - | 290 | 182 | 1129 | 61 | - | 1372 | 84 | 125 | 159 | - | 368 | 3322 |
| % Lights | 98.3 | 97.7 | 95.0 | - | 97.6 | 100.0 | 96.2 | 100.0 | - | 98.3 | 97.3 | 99.3 | 96.8 | - | 98.9 | 98.8 | 99.2 | 96.4 | - | 97.9 | 98.2 |
| Buses | 1 | 3 | 4 | - | 8 | 0 | 5 | 0 | - | 5 | 4 | 2 | 2 | - | 8 | 1 | 0 | 5 | - | 6 | 27 |
| % Buses | 0.9 | 0.3 | 4.0 | - | 0.6 | 0.0 | 3.8 | 0.0 | - | 1.7 | 2.1 | 0.2 | 3.2 | - | 0.6 | 1.2 | 0.0 | 3.0 | - | 1.6 | 0.8 |
| Trucks | 1 | 22 | 1 | - | 24 | 0 | 0 | 0 | - | 0 | 1 | 6 | 0 | - | 7 | 0 | 0 | 1 | - | 1 | 32 |
| % Trucks | 0.9 | 2.0 | 1.0 | - | 1.8 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.5 | 0.5 | 0.0 | - | 0.5 | 0.0 | 0.0 | 0.6 | - | 0.3 | 0.9 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 1 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.8 | 0.0 | - | 0.3 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 3 | - | - | - | - | 4 | - | - | - | - | 3 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 13.6 | - | - | - | - | 16.0 | - | - | - | - | 13.0 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 19 | - | - | - | - | 21 | - | - | - | - | 20 | - | - | - | - | 34 | - | - |
| % Pedestrians | - | - | - | 86.4 | - | - | - | - | 84.0 | - | - | - | - | 87.0 | - | - | - | - | 100.0 | - | - |



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Count Name: 23181_Wonderland Rd S &
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Site Code: 23181
Start Date: 09/20/2022
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Turning Movement Peak Hour Data Plot (4:45 PM)



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Count Name: 23181_Wonderland Rd S &
Southdale Rd W-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

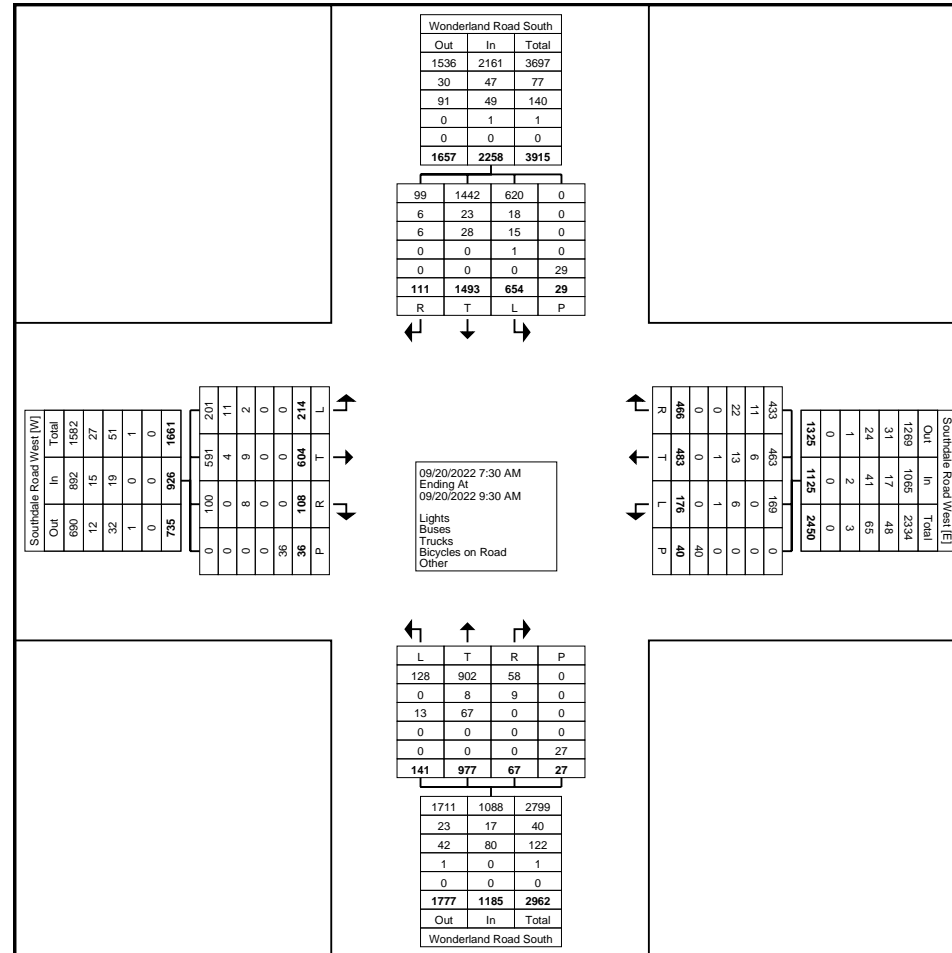
| Start Time | Wonderland Road South Southbound | | | | | Southdale Road West Westbound | | | | | Wonderland Road South Northbound | | | | | Southdale Road West Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|------|-------|------|------------|-------------------------------|------|-------|------|------------|----------------------------------|------|-------|------|------------|-------------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 70 | 198 | 5 | 1 | 273 | 19 | 54 | 49 | 6 | 122 | 20 | 144 | 7 | 5 | 171 | 19 | 64 | 4 | 1 | 87 | 653 |
| 7:45 AM | 86 | 210 | 17 | 10 | 313 | 15 | 48 | 70 | 9 | 133 | 27 | 177 | 7 | 2 | 211 | 25 | 82 | 7 | 9 | 114 | 771 |
| Hourly Total | 156 | 408 | 22 | 11 | 586 | 34 | 102 | 119 | 15 | 255 | 47 | 321 | 14 | 7 | 382 | 44 | 146 | 11 | 10 | 201 | 1424 |
| 8:00 AM | 83 | 180 | 23 | 1 | 286 | 20 | 57 | 73 | 3 | 150 | 12 | 117 | 6 | 4 | 135 | 28 | 83 | 5 | 3 | 116 | 687 |
| 8:15 AM | 91 | 191 | 13 | 5 | 295 | 15 | 58 | 39 | 9 | 112 | 10 | 130 | 12 | 3 | 152 | 19 | 69 | 18 | 2 | 106 | 665 |
| 8:30 AM | 74 | 157 | 10 | 3 | 241 | 23 | 63 | 58 | 5 | 144 | 15 | 110 | 9 | 1 | 134 | 32 | 81 | 12 | 1 | 125 | 644 |
| 8:45 AM | 87 | 196 | 13 | 3 | 296 | 17 | 67 | 49 | 3 | 133 | 17 | 104 | 10 | 3 | 131 | 31 | 53 | 18 | 5 | 102 | 662 |
| Hourly Total | 335 | 724 | 59 | 12 | 1118 | 75 | 245 | 219 | 20 | 539 | 54 | 461 | 37 | 11 | 552 | 110 | 286 | 53 | 11 | 449 | 2658 |
| 9:00 AM | 73 | 158 | 15 | 4 | 246 | 38 | 76 | 60 | 3 | 174 | 15 | 89 | 9 | 3 | 113 | 30 | 90 | 29 | 5 | 149 | 682 |
| 9:15 AM | 90 | 203 | 15 | 2 | 308 | 29 | 60 | 68 | 2 | 157 | 25 | 106 | 7 | 6 | 138 | 30 | 82 | 15 | 10 | 127 | 730 |
| Grand Total | 654 | 1493 | 111 | 29 | 2258 | 176 | 483 | 466 | 40 | 1125 | 141 | 977 | 67 | 27 | 1185 | 214 | 604 | 108 | 36 | 926 | 5494 |
| Approach % | 29.0 | 66.1 | 4.9 | - | - | 15.6 | 42.9 | 41.4 | - | - | 11.9 | 82.4 | 5.7 | - | - | 23.1 | 65.2 | 11.7 | - | - | - |
| Total % | 11.9 | 27.2 | 2.0 | - | 41.1 | 3.2 | 8.8 | 8.5 | - | 20.5 | 2.6 | 17.8 | 1.2 | - | 21.6 | 3.9 | 11.0 | 2.0 | - | 16.9 | - |
| Lights | 620 | 1442 | 99 | - | 2161 | 169 | 463 | 433 | - | 1065 | 128 | 902 | 58 | - | 1088 | 201 | 591 | 100 | - | 892 | 5206 |
| % Lights | 94.8 | 96.6 | 89.2 | - | 95.7 | 96.0 | 95.9 | 92.9 | - | 94.7 | 90.8 | 92.3 | 86.6 | - | 91.8 | 93.9 | 97.8 | 92.6 | - | 96.3 | 94.8 |
| Buses | 18 | 23 | 6 | - | 47 | 0 | 6 | 11 | - | 17 | 0 | 8 | 9 | - | 17 | 11 | 4 | 0 | - | 15 | 96 |
| % Buses | 2.8 | 1.5 | 5.4 | - | 2.1 | 0.0 | 1.2 | 2.4 | - | 1.5 | 0.0 | 0.8 | 13.4 | - | 1.4 | 5.1 | 0.7 | 0.0 | - | 1.6 | 1.7 |
| Trucks | 15 | 28 | 6 | - | 49 | 6 | 13 | 22 | - | 41 | 13 | 67 | 0 | - | 80 | 2 | 9 | 8 | - | 19 | 189 |
| % Trucks | 2.3 | 1.9 | 5.4 | - | 2.2 | 3.4 | 2.7 | 4.7 | - | 3.6 | 9.2 | 6.9 | 0.0 | - | 6.8 | 0.9 | 1.5 | 7.4 | - | 2.1 | 3.4 |
| Bicycles on Road | 1 | 0 | 0 | - | 1 | 1 | 1 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 3 |
| % Bicycles on Road | 0.2 | 0.0 | 0.0 | - | 0.0 | 0.6 | 0.2 | 0.0 | - | 0.2 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Bicycles on Crosswalk | - | - | - | 1 | - | - | - | - | 9 | - | - | - | - | 4 | - | - | - | - | 4 | - | - |
| % Bicycles on Crosswalk | - | - | - | 3.4 | - | - | - | - | 22.5 | - | - | - | - | 14.8 | - | - | - | - | 11.1 | - | - |
| Pedestrians | - | - | - | 28 | - | - | - | - | 31 | - | - | - | - | 23 | - | - | - | - | 32 | - | - |
| % Pedestrians | - | - | - | 96.6 | - | - | - | - | 77.5 | - | - | - | - | 85.2 | - | - | - | - | 88.9 | - | - |



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Count Name: 23181_Wonderland Rd S &
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Site Code: 23181
Start Date: 09/20/2022
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Turning Movement Data Plot



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Count Name: 23181_Wonderland Rd S &
Southdale Rd W-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

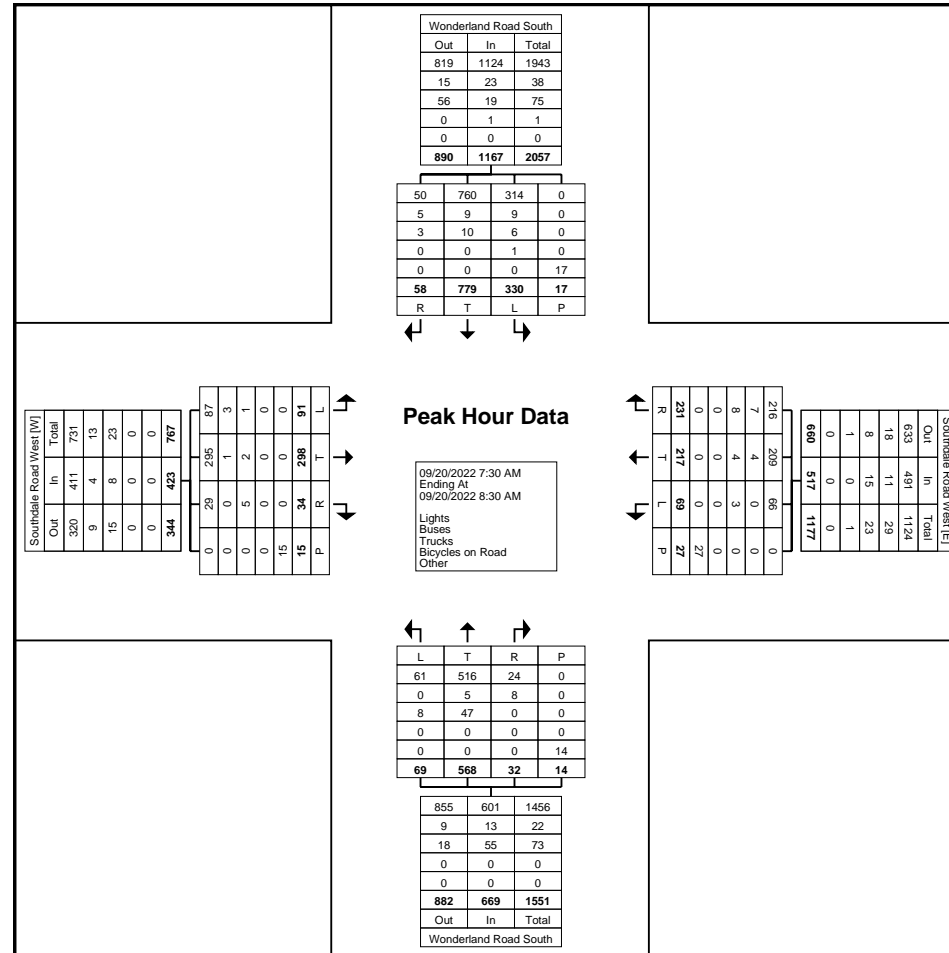
| Start Time | Wonderland Road South Southbound | | | | | Southdale Road West Westbound | | | | | Wonderland Road South Northbound | | | | | Southdale Road West Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|-------|-------|------|------------|-------------------------------|-------|-------|------|------------|----------------------------------|-------|-------|------|------------|-------------------------------|-------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 70 | 198 | 5 | 1 | 273 | 19 | 54 | 49 | 6 | 122 | 20 | 144 | 7 | 5 | 171 | 19 | 64 | 4 | 1 | 87 | 653 |
| 7:45 AM | 86 | 210 | 17 | 10 | 313 | 15 | 48 | 70 | 9 | 133 | 27 | 177 | 7 | 2 | 211 | 25 | 82 | 7 | 9 | 114 | 771 |
| 8:00 AM | 83 | 180 | 23 | 1 | 286 | 20 | 57 | 73 | 3 | 150 | 12 | 117 | 6 | 4 | 135 | 28 | 83 | 5 | 3 | 116 | 687 |
| 8:15 AM | 91 | 191 | 13 | 5 | 295 | 15 | 58 | 39 | 9 | 112 | 10 | 130 | 12 | 3 | 152 | 19 | 69 | 18 | 2 | 106 | 665 |
| Total | 330 | 779 | 58 | 17 | 1167 | 69 | 217 | 231 | 27 | 517 | 69 | 568 | 32 | 14 | 669 | 91 | 298 | 34 | 15 | 423 | 2776 |
| Approach % | 28.3 | 66.8 | 5.0 | - | - | 13.3 | 42.0 | 44.7 | - | - | 10.3 | 84.9 | 4.8 | - | - | 21.5 | 70.4 | 8.0 | - | - | - |
| Total % | 11.9 | 28.1 | 2.1 | - | 42.0 | 2.5 | 7.8 | 8.3 | - | 18.6 | 2.5 | 20.5 | 1.2 | - | 24.1 | 3.3 | 10.7 | 1.2 | - | 15.2 | - |
| PHF | 0.907 | 0.927 | 0.630 | - | 0.932 | 0.863 | 0.935 | 0.791 | - | 0.862 | 0.639 | 0.802 | 0.667 | - | 0.793 | 0.813 | 0.898 | 0.472 | - | 0.912 | 0.900 |
| Lights | 314 | 760 | 50 | - | 1124 | 66 | 209 | 216 | - | 491 | 61 | 516 | 24 | - | 601 | 87 | 295 | 29 | - | 411 | 2627 |
| % Lights | 95.2 | 97.6 | 86.2 | - | 96.3 | 95.7 | 96.3 | 93.5 | - | 95.0 | 88.4 | 90.8 | 75.0 | - | 89.8 | 95.6 | 99.0 | 85.3 | - | 97.2 | 94.6 |
| Buses | 9 | 9 | 5 | - | 23 | 0 | 4 | 7 | - | 11 | 0 | 5 | 8 | - | 13 | 3 | 1 | 0 | - | 4 | 51 |
| % Buses | 2.7 | 1.2 | 8.6 | - | 2.0 | 0.0 | 1.8 | 3.0 | - | 2.1 | 0.0 | 0.9 | 25.0 | - | 1.9 | 3.3 | 0.3 | 0.0 | - | 0.9 | 1.8 |
| Trucks | 6 | 10 | 3 | - | 19 | 3 | 4 | 8 | - | 15 | 8 | 47 | 0 | - | 55 | 1 | 2 | 5 | - | 8 | 97 |
| % Trucks | 1.8 | 1.3 | 5.2 | - | 1.6 | 4.3 | 1.8 | 3.5 | - | 2.9 | 11.6 | 8.3 | 0.0 | - | 8.2 | 1.1 | 0.7 | 14.7 | - | 1.9 | 3.5 |
| Bicycles on Road | 1 | 0 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.3 | 0.0 | 0.0 | - | 0.1 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 1 | - | - | - | - | 7 | - | - | - | - | 2 | - | - | - | - | 2 | - | - |
| % Bicycles on Crosswalk | - | - | - | 5.9 | - | - | - | - | 25.9 | - | - | - | - | 14.3 | - | - | - | - | 13.3 | - | - |
| Pedestrians | - | - | - | 16 | - | - | - | - | 20 | - | - | - | - | 12 | - | - | - | - | 13 | - | - |
| % Pedestrians | - | - | - | 94.1 | - | - | - | - | 74.1 | - | - | - | - | 85.7 | - | - | - | - | 86.7 | - | - |



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Count Name: 23181_Wonderland Rd S &
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Site Code: 23181
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Turning Movement Peak Hour Data Plot (7:30 AM)



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Count Name: 23181_Wonderland Rd S &
Southdale Rd W-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

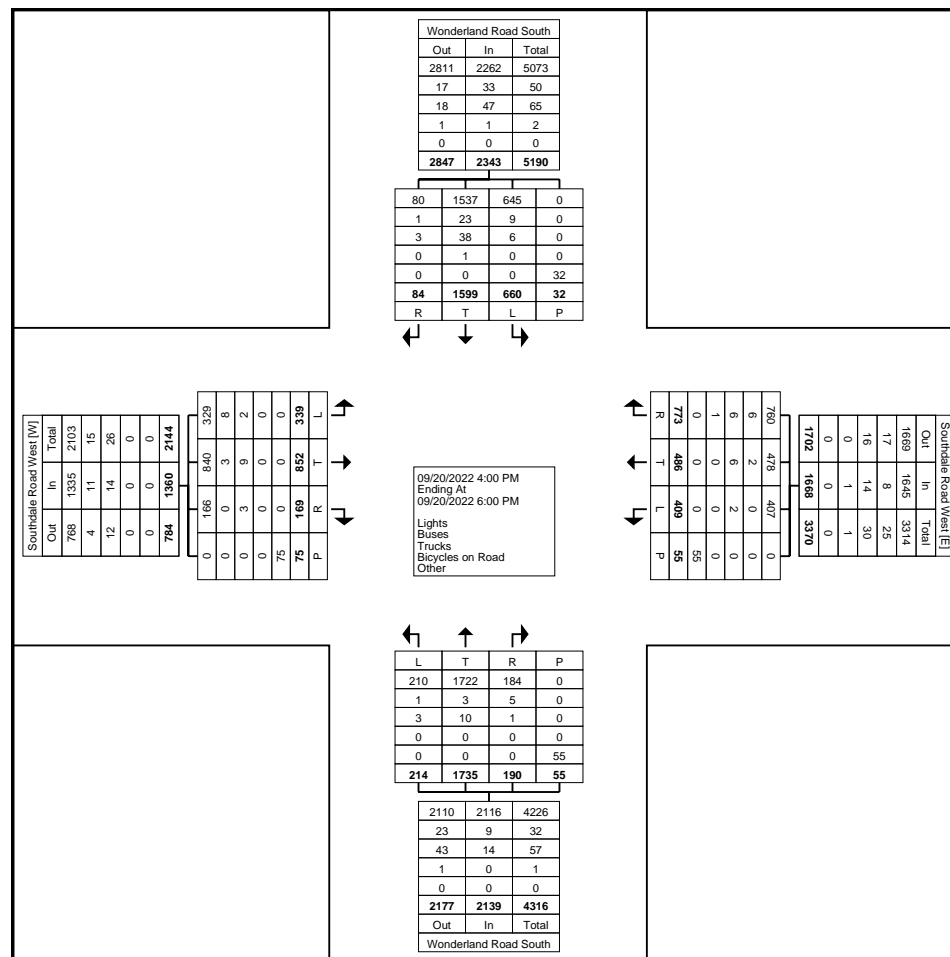
| Start Time | Wonderland Road South Southbound | | | | | Southdale Road West Westbound | | | | | Wonderland Road South Northbound | | | | | Southdale Road West Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------|------|-------|------|------------|-------------------------------|------|-------|------|------------|----------------------------------|------|-------|------|------------|-------------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 65 | 203 | 15 | 5 | 283 | 58 | 89 | 91 | 4 | 238 | 26 | 189 | 35 | 3 | 250 | 42 | 97 | 21 | 13 | 160 | 931 |
| 4:15 PM | 89 | 211 | 12 | 5 | 312 | 40 | 56 | 95 | 4 | 191 | 27 | 208 | 33 | 14 | 268 | 44 | 103 | 23 | 13 | 170 | 941 |
| 4:30 PM | 85 | 216 | 12 | 3 | 313 | 49 | 67 | 93 | 4 | 209 | 25 | 233 | 13 | 5 | 271 | 32 | 105 | 16 | 8 | 153 | 946 |
| 4:45 PM | 82 | 182 | 9 | 3 | 273 | 56 | 64 | 89 | 7 | 209 | 27 | 233 | 25 | 7 | 285 | 52 | 101 | 22 | 6 | 175 | 942 |
| Hourly Total | 321 | 812 | 48 | 16 | 1181 | 203 | 276 | 368 | 19 | 847 | 105 | 863 | 106 | 29 | 1074 | 170 | 406 | 82 | 40 | 658 | 3760 |
| 5:00 PM | 89 | 211 | 12 | 7 | 312 | 50 | 54 | 89 | 6 | 193 | 25 | 226 | 31 | 6 | 282 | 37 | 118 | 22 | 9 | 177 | 964 |
| 5:15 PM | 84 | 205 | 9 | 4 | 298 | 49 | 63 | 99 | 13 | 211 | 20 | 232 | 18 | 7 | 270 | 41 | 95 | 24 | 7 | 160 | 939 |
| 5:30 PM | 87 | 203 | 6 | 2 | 296 | 59 | 43 | 103 | 10 | 205 | 33 | 209 | 19 | 6 | 261 | 39 | 121 | 21 | 5 | 181 | 943 |
| 5:45 PM | 79 | 168 | 9 | 3 | 256 | 48 | 50 | 114 | 7 | 212 | 31 | 205 | 16 | 7 | 252 | 52 | 112 | 20 | 14 | 184 | 904 |
| Hourly Total | 339 | 787 | 36 | 16 | 1162 | 206 | 210 | 405 | 36 | 821 | 109 | 872 | 84 | 26 | 1065 | 169 | 446 | 87 | 35 | 702 | 3750 |
| Grand Total | 660 | 1599 | 84 | 32 | 2343 | 409 | 486 | 773 | 55 | 1668 | 214 | 1735 | 190 | 55 | 2139 | 339 | 852 | 169 | 75 | 1360 | 7510 |
| Approach % | 28.2 | 68.2 | 3.6 | - | - | 24.5 | 29.1 | 46.3 | - | - | 10.0 | 81.1 | 8.9 | - | - | 24.9 | 62.6 | 12.4 | - | - | - |
| Total % | 8.8 | 21.3 | 1.1 | - | 31.2 | 5.4 | 6.5 | 10.3 | - | 22.2 | 2.8 | 23.1 | 2.5 | - | 28.5 | 4.5 | 11.3 | 2.3 | - | 18.1 | - |
| Lights | 645 | 1537 | 80 | - | 2262 | 407 | 478 | 760 | - | 1645 | 210 | 1722 | 184 | - | 2116 | 329 | 840 | 166 | - | 1335 | 7358 |
| % Lights | 97.7 | 96.1 | 95.2 | - | 96.5 | 99.5 | 98.4 | 98.3 | - | 98.6 | 98.1 | 99.3 | 96.8 | - | 98.9 | 97.1 | 98.6 | 98.2 | - | 98.2 | 98.0 |
| Buses | 9 | 23 | 1 | - | 33 | 0 | 2 | 6 | - | 8 | 1 | 3 | 5 | - | 9 | 8 | 3 | 0 | - | 11 | 61 |
| % Buses | 1.4 | 1.4 | 1.2 | - | 1.4 | 0.0 | 0.4 | 0.8 | - | 0.5 | 0.5 | 0.2 | 2.6 | - | 0.4 | 2.4 | 0.4 | 0.0 | - | 0.8 | 0.8 |
| Trucks | 6 | 38 | 3 | - | 47 | 2 | 6 | 6 | - | 14 | 3 | 10 | 1 | - | 14 | 2 | 9 | 3 | - | 14 | 89 |
| % Trucks | 0.9 | 2.4 | 3.6 | - | 2.0 | 0.5 | 1.2 | 0.8 | - | 0.8 | 1.4 | 0.6 | 0.5 | - | 0.7 | 0.6 | 1.1 | 1.8 | - | 1.0 | 1.2 |
| Bicycles on Road | 0 | 1 | 0 | - | 1 | 0 | 0 | 1 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 2 |
| % Bicycles on Road | 0.0 | 0.1 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.1 | - | 0.1 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 3 | - | - | - | - | 4 | - | - | - | - | 6 | - | - | - | - | 14 | - | - |
| % Bicycles on Crosswalk | - | - | - | 9.4 | - | - | - | - | 7.3 | - | - | - | - | 10.9 | - | - | - | - | 18.7 | - | - |
| Pedestrians | - | - | - | 29 | - | - | - | - | 51 | - | - | - | - | 49 | - | - | - | - | 61 | - | - |
| % Pedestrians | - | - | - | 90.6 | - | - | - | - | 92.7 | - | - | - | - | 89.1 | - | - | - | - | 81.3 | - | - |



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Page No: 2



Turning Movement Data Plot



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Southdale Rd W-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (4:15 PM)

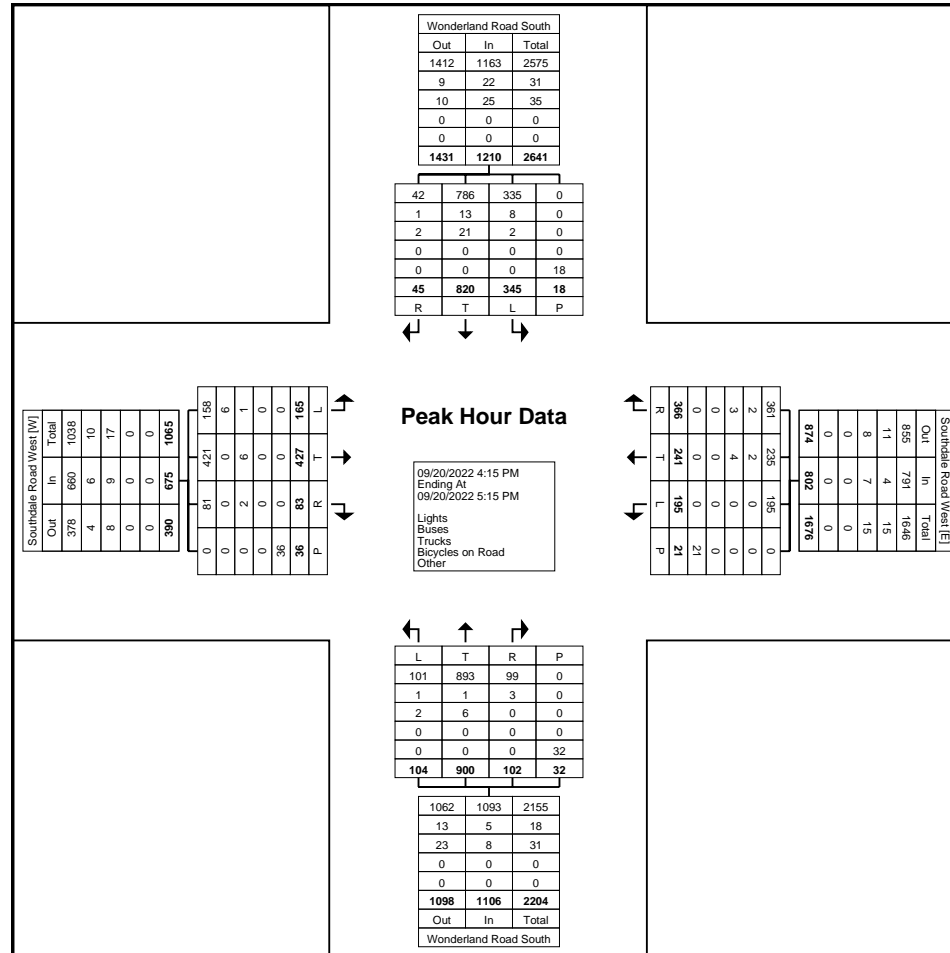
| Start Time | Wonderland Road South Southbound | | | | | Southdale Road West Westbound | | | | | Wonderland Road South Northbound | | | | | Southdale Road West Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------------|------------|-----------|-----------|-------------|----------------------------------|------------|------------|-----------|------------|-------------------------------------|------------|------------|-----------|-------------|----------------------------------|------------|-----------|-----------|------------|-------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:15 PM | 89 | 211 | 12 | 5 | 312 | 40 | 56 | 95 | 4 | 191 | 27 | 208 | 33 | 14 | 268 | 44 | 103 | 23 | 13 | 170 | 941 |
| 4:30 PM | 85 | 216 | 12 | 3 | 313 | 49 | 67 | 93 | 4 | 209 | 25 | 233 | 13 | 5 | 271 | 32 | 105 | 16 | 8 | 153 | 946 |
| 4:45 PM | 82 | 182 | 9 | 3 | 273 | 56 | 64 | 89 | 7 | 209 | 27 | 233 | 25 | 7 | 285 | 52 | 101 | 22 | 6 | 175 | 942 |
| 5:00 PM | 89 | 211 | 12 | 7 | 312 | 50 | 54 | 89 | 6 | 193 | 25 | 226 | 31 | 6 | 282 | 37 | 118 | 22 | 9 | 177 | 964 |
| Total | 345 | 820 | 45 | 18 | 1210 | 195 | 241 | 366 | 21 | 802 | 104 | 900 | 102 | 32 | 1106 | 165 | 427 | 83 | 36 | 675 | 3793 |
| Approach % | 28.5 | 67.8 | 3.7 | - | - | 24.3 | 30.0 | 45.6 | - | - | 9.4 | 81.4 | 9.2 | - | - | 24.4 | 63.3 | 12.3 | - | - | - |
| Total % | 9.1 | 21.6 | 1.2 | - | 31.9 | 5.1 | 6.4 | 9.6 | - | 21.1 | 2.7 | 23.7 | 2.7 | - | 29.2 | 4.4 | 11.3 | 2.2 | - | 17.8 | - |
| PHF | 0.969 | 0.949 | 0.938 | - | 0.966 | 0.871 | 0.899 | 0.963 | - | 0.959 | 0.963 | 0.966 | 0.773 | - | 0.970 | 0.793 | 0.905 | 0.902 | - | 0.953 | 0.984 |
| Lights | 335 | 786 | 42 | - | 1163 | 195 | 235 | 361 | - | 791 | 101 | 893 | 99 | - | 1093 | 158 | 421 | 81 | - | 660 | 3707 |
| % Lights | 97.1 | 95.9 | 93.3 | - | 96.1 | 100.0 | 97.5 | 98.6 | - | 98.6 | 97.1 | 99.2 | 97.1 | - | 98.8 | 95.8 | 98.6 | 97.6 | - | 97.8 | 97.7 |
| Buses | 8 | 13 | 1 | - | 22 | 0 | 2 | 2 | - | 4 | 1 | 1 | 3 | - | 5 | 6 | 0 | 0 | - | 6 | 37 |
| % Buses | 2.3 | 1.6 | 2.2 | - | 1.8 | 0.0 | 0.8 | 0.5 | - | 0.5 | 1.0 | 0.1 | 2.9 | - | 0.5 | 3.6 | 0.0 | 0.0 | - | 0.9 | 1.0 |
| Trucks | 2 | 21 | 2 | - | 25 | 0 | 4 | 3 | - | 7 | 2 | 6 | 0 | - | 8 | 1 | 6 | 2 | - | 9 | 49 |
| % Trucks | 0.6 | 2.6 | 4.4 | - | 2.1 | 0.0 | 1.7 | 0.8 | - | 0.9 | 1.9 | 0.7 | 0.0 | - | 0.7 | 0.6 | 1.4 | 2.4 | - | 1.3 | 1.3 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Bicycles on Crosswalk | - | - | - | 3 | - | - | - | - | 1 | - | - | - | - | 3 | - | - | - | - | 8 | - | - |
| % Bicycles on Crosswalk | - | - | - | 16.7 | - | - | - | - | 4.8 | - | - | - | - | 9.4 | - | - | - | - | 22.2 | - | - |
| Pedestrians | - | - | - | 15 | - | - | - | - | 20 | - | - | - | - | 29 | - | - | - | - | 28 | - | - |
| % Pedestrians | - | - | - | 83.3 | - | - | - | - | 95.2 | - | - | - | - | 90.6 | - | - | - | - | 77.8 | - | - |



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Count Name: 23181_Wonderland Rd S &
Southdale Rd W-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 4



Turning Movement Peak Hour Data Plot (4:15 PM)



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Count Name: 23181_Westmount Shopping
Centre Access (East) & Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

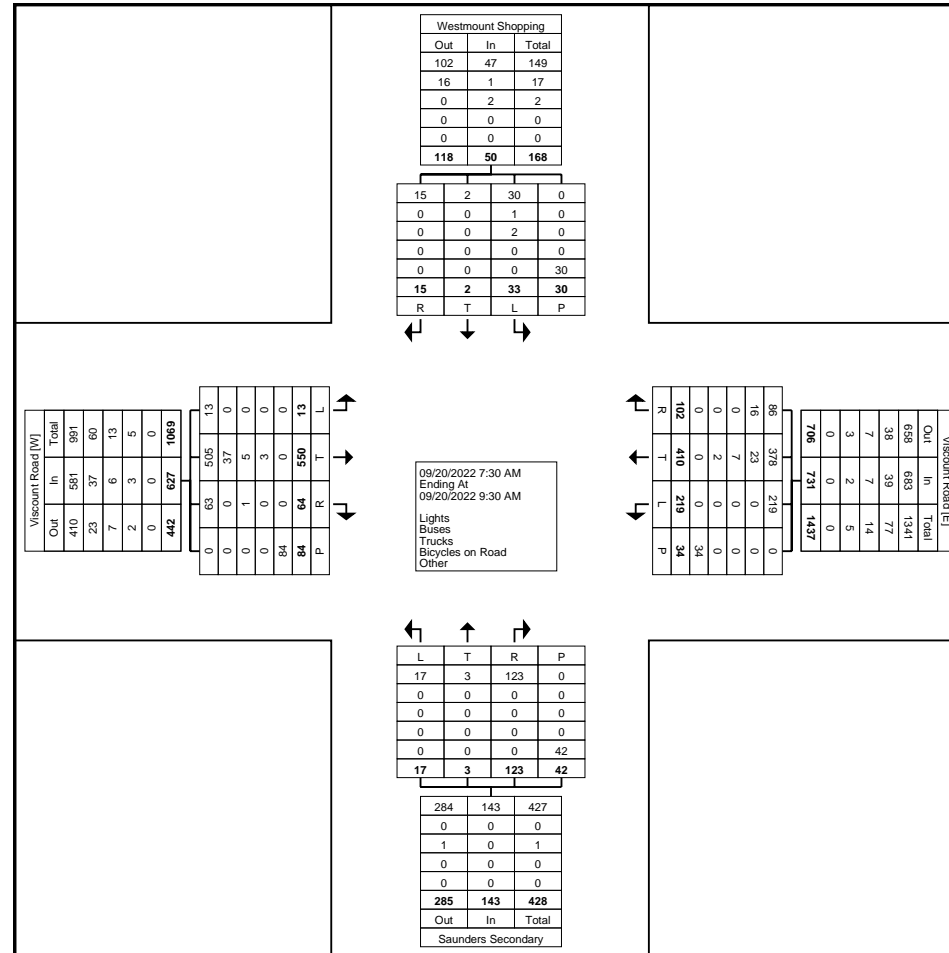
| Start Time | Westmount Shopping Centre Access - East Southbound | | | | | Viscount Road Westbound | | | | | Saunders Secondary School Driveway Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------------------------------|-------|-------|-------|------------|----------------------------|------|-------|-------|------------|--------------------------------------------------|-------|-------|------|------------|----------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 3 | 0 | 4 | 1 | 7 | 42 | 27 | 4 | 0 | 73 | 1 | 0 | 6 | 1 | 7 | 0 | 50 | 12 | 5 | 62 | 149 |
| 7:45 AM | 3 | 1 | 0 | 5 | 4 | 63 | 60 | 14 | 10 | 137 | 2 | 2 | 27 | 3 | 31 | 1 | 73 | 22 | 13 | 96 | 268 |
| Hourly Total | 6 | 1 | 4 | 6 | 11 | 105 | 87 | 18 | 10 | 210 | 3 | 2 | 33 | 4 | 38 | 1 | 123 | 34 | 18 | 158 | 417 |
| 8:00 AM | 4 | 1 | 4 | 10 | 9 | 50 | 72 | 24 | 15 | 146 | 3 | 0 | 37 | 4 | 40 | 7 | 99 | 15 | 38 | 121 | 316 |
| 8:15 AM | 5 | 0 | 2 | 1 | 7 | 24 | 55 | 6 | 1 | 85 | 3 | 0 | 26 | 1 | 29 | 1 | 47 | 6 | 11 | 54 | 175 |
| 8:30 AM | 2 | 0 | 1 | 5 | 3 | 9 | 49 | 7 | 0 | 65 | 1 | 0 | 5 | 3 | 6 | 0 | 63 | 2 | 1 | 65 | 139 |
| 8:45 AM | 7 | 0 | 2 | 2 | 9 | 8 | 51 | 14 | 2 | 73 | 2 | 0 | 7 | 12 | 9 | 2 | 77 | 3 | 5 | 82 | 173 |
| Hourly Total | 18 | 1 | 9 | 18 | 28 | 91 | 227 | 51 | 18 | 369 | 9 | 0 | 75 | 20 | 84 | 10 | 286 | 26 | 55 | 322 | 803 |
| 9:00 AM | 3 | 0 | 1 | 1 | 4 | 8 | 64 | 17 | 4 | 89 | 3 | 0 | 4 | 10 | 7 | 2 | 91 | 2 | 1 | 95 | 195 |
| 9:15 AM | 6 | 0 | 1 | 5 | 7 | 15 | 32 | 16 | 2 | 63 | 2 | 1 | 11 | 8 | 14 | 0 | 50 | 2 | 10 | 52 | 136 |
| Grand Total | 33 | 2 | 15 | 30 | 50 | 219 | 410 | 102 | 34 | 731 | 17 | 3 | 123 | 42 | 143 | 13 | 550 | 64 | 84 | 627 | 1551 |
| Approach % | 66.0 | 4.0 | 30.0 | - | - | 30.0 | 56.1 | 14.0 | - | - | 11.9 | 2.1 | 86.0 | - | - | 2.1 | 87.7 | 10.2 | - | - | - |
| Total % | 2.1 | 0.1 | 1.0 | - | 3.2 | 14.1 | 26.4 | 6.6 | - | 47.1 | 1.1 | 0.2 | 7.9 | - | 9.2 | 0.8 | 35.5 | 4.1 | - | 40.4 | - |
| Lights | 30 | 2 | 15 | - | 47 | 219 | 378 | 86 | - | 683 | 17 | 3 | 123 | - | 143 | 13 | 505 | 63 | - | 581 | 1454 |
| % Lights | 90.9 | 100.0 | 100.0 | - | 94.0 | 100.0 | 92.2 | 84.3 | - | 93.4 | 100.0 | 100.0 | 100.0 | - | 100.0 | 100.0 | 91.8 | 98.4 | - | 92.7 | 93.7 |
| Buses | 1 | 0 | 0 | - | 1 | 0 | 23 | 16 | - | 39 | 0 | 0 | 0 | - | 0 | 0 | 37 | 0 | - | 37 | 77 |
| % Buses | 3.0 | 0.0 | 0.0 | - | 2.0 | 0.0 | 5.6 | 15.7 | - | 5.3 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 6.7 | 0.0 | - | 5.9 | 5.0 |
| Trucks | 2 | 0 | 0 | - | 2 | 0 | 7 | 0 | - | 7 | 0 | 0 | 0 | - | 0 | 0 | 5 | 1 | - | 6 | 15 |
| % Trucks | 6.1 | 0.0 | 0.0 | - | 4.0 | 0.0 | 1.7 | 0.0 | - | 1.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.9 | 1.6 | - | 1.0 | 1.0 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 3 | 0 | - | 3 | 5 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.5 | 0.0 | - | 0.3 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.5 | 0.0 | - | 0.5 | 0.3 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 4 | - | - | - | - | 1 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | 9.5 | - | - | - | - | 1.2 | - | - |
| Pedestrians | - | - | - | 30 | - | - | - | - | 34 | - | - | - | - | 38 | - | - | - | - | 83 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 90.5 | - | - | - | - | 98.8 | - | - |



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Count Name: 23181_Westmount Shopping
Centre Access (East) & Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2





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Count Name: 23181_Westmount Shopping
Centre Access (East) & Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

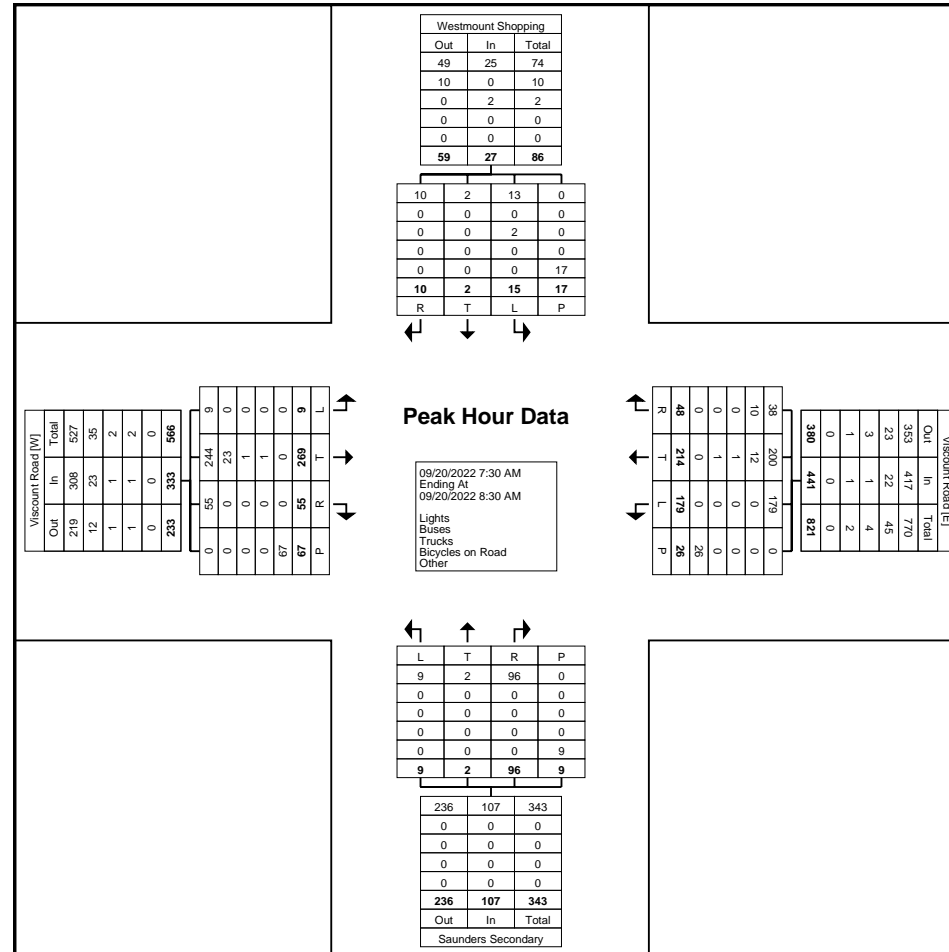
| Start Time | Westmount Shopping Centre Access - East Southbound | | | | | Viscount Road Westbound | | | | | Saunders Secondary School Driveway Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------------------------------|-------|-------|-------|------------|----------------------------|-------|-------|-------|------------|--------------------------------------------------|-------|-------|------|------------|----------------------------|-------|-------|-------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 3 | 0 | 4 | 1 | 7 | 42 | 27 | 4 | 0 | 73 | 1 | 0 | 6 | 1 | 7 | 0 | 50 | 12 | 5 | 62 | 149 |
| 7:45 AM | 3 | 1 | 0 | 5 | 4 | 63 | 60 | 14 | 10 | 137 | 2 | 2 | 27 | 3 | 31 | 1 | 73 | 22 | 13 | 96 | 268 |
| 8:00 AM | 4 | 1 | 4 | 10 | 9 | 50 | 72 | 24 | 15 | 146 | 3 | 0 | 37 | 4 | 40 | 7 | 99 | 15 | 38 | 121 | 316 |
| 8:15 AM | 5 | 0 | 2 | 1 | 7 | 24 | 55 | 6 | 1 | 85 | 3 | 0 | 26 | 1 | 29 | 1 | 47 | 6 | 11 | 54 | 175 |
| Total | 15 | 2 | 10 | 17 | 27 | 179 | 214 | 48 | 26 | 441 | 9 | 2 | 96 | 9 | 107 | 9 | 269 | 55 | 67 | 333 | 908 |
| Approach % | 55.6 | 7.4 | 37.0 | - | - | 40.6 | 48.5 | 10.9 | - | - | 8.4 | 1.9 | 89.7 | - | - | 2.7 | 80.8 | 16.5 | - | - | - |
| Total % | 1.7 | 0.2 | 1.1 | - | 3.0 | 19.7 | 23.6 | 5.3 | - | 48.6 | 1.0 | 0.2 | 10.6 | - | 11.8 | 1.0 | 29.6 | 6.1 | - | 36.7 | - |
| PHF | 0.750 | 0.500 | 0.625 | - | 0.750 | 0.710 | 0.743 | 0.500 | - | 0.755 | 0.750 | 0.250 | 0.649 | - | 0.669 | 0.321 | 0.679 | 0.625 | - | 0.688 | 0.718 |
| Lights | 13 | 2 | 10 | - | 25 | 179 | 200 | 38 | - | 417 | 9 | 2 | 96 | - | 107 | 9 | 244 | 55 | - | 308 | 857 |
| % Lights | 86.7 | 100.0 | 100.0 | - | 92.6 | 100.0 | 93.5 | 79.2 | - | 94.6 | 100.0 | 100.0 | 100.0 | - | 100.0 | 100.0 | 90.7 | 100.0 | - | 92.5 | 94.4 |
| Buses | 0 | 0 | 0 | - | 0 | 0 | 12 | 10 | - | 22 | 0 | 0 | 0 | - | 0 | 0 | 23 | 0 | - | 23 | 45 |
| % Buses | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 5.6 | 20.8 | - | 5.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 8.6 | 0.0 | - | 6.9 | 5.0 |
| Trucks | 2 | 0 | 0 | - | 2 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 4 |
| % Trucks | 13.3 | 0.0 | 0.0 | - | 7.4 | 0.0 | 0.5 | 0.0 | - | 0.2 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.4 | 0.0 | - | 0.3 | 0.4 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 2 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.5 | 0.0 | - | 0.2 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.4 | 0.0 | - | 0.3 | 0.2 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 1 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | 11.1 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 17 | - | - | - | - | 26 | - | - | - | - | 8 | - | - | - | - | 67 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 88.9 | - | - | - | - | 100.0 | - | - |



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Count Name: 23181_Westmount Shopping
Centre Access (East) & Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
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Turning Movement Peak Hour Data Plot (7:30 AM)



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Count Name: 23181_Westmount Shopping
Centre Access (East) & Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

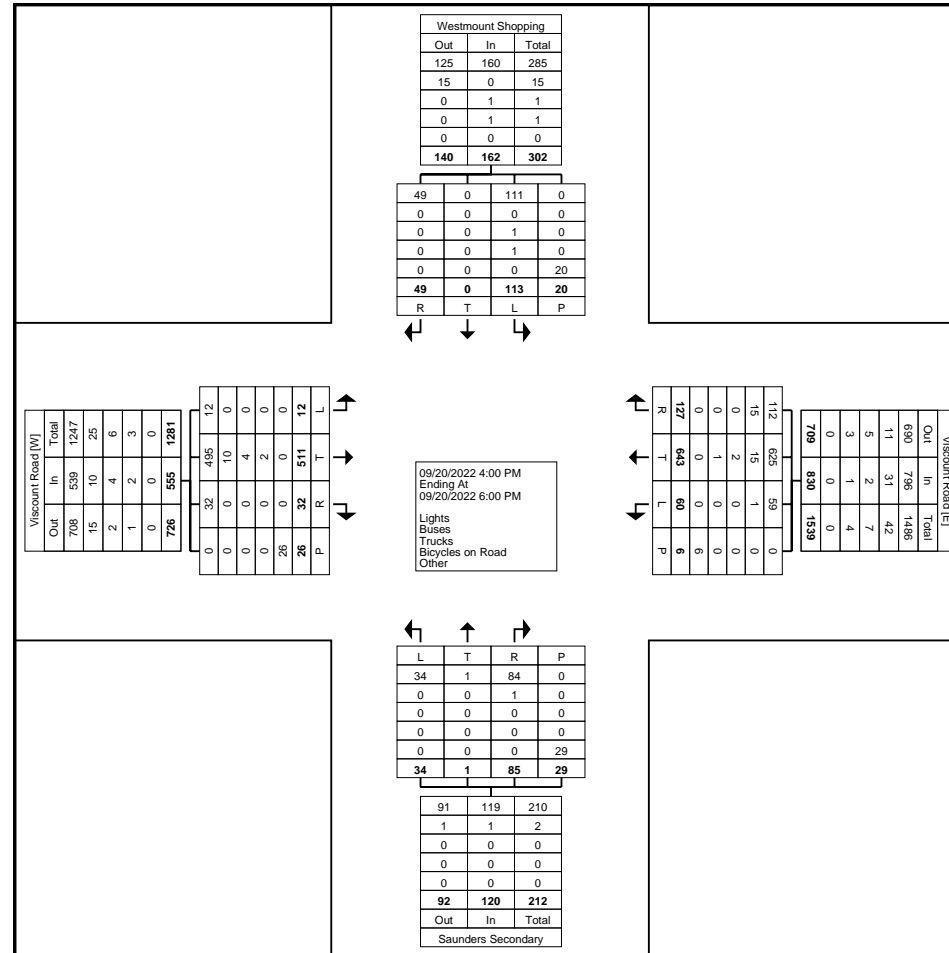
| Start Time | Westmount Shopping Centre Access - East Southbound | | | | | Viscount Road Westbound | | | | | Saunders Secondary School Driveway Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------------------------|------|-------|------|------------|-------------------------|------|-------|-------|------------|-----------------------------------------------|-------|-------|------|------------|-------------------------|------|-------|-------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 16 | 0 | 3 | 1 | 19 | 8 | 86 | 11 | 2 | 105 | 1 | 0 | 9 | 4 | 10 | 3 | 83 | 3 | 8 | 89 | 223 |
| 4:15 PM | 12 | 0 | 10 | 3 | 22 | 4 | 61 | 17 | 0 | 82 | 9 | 0 | 16 | 4 | 25 | 0 | 60 | 4 | 3 | 64 | 193 |
| 4:30 PM | 18 | 0 | 5 | 1 | 23 | 4 | 91 | 18 | 1 | 113 | 4 | 0 | 5 | 1 | 9 | 0 | 60 | 3 | 2 | 63 | 208 |
| 4:45 PM | 16 | 0 | 6 | 0 | 22 | 4 | 85 | 15 | 2 | 104 | 0 | 0 | 6 | 2 | 6 | 3 | 67 | 0 | 0 | 70 | 202 |
| Hourly Total | 62 | 0 | 24 | 5 | 86 | 20 | 323 | 61 | 5 | 404 | 14 | 0 | 36 | 11 | 50 | 6 | 270 | 10 | 13 | 286 | 826 |
| 5:00 PM | 13 | 0 | 8 | 2 | 21 | 13 | 81 | 13 | 0 | 107 | 3 | 0 | 8 | 5 | 11 | 2 | 68 | 7 | 1 | 77 | 216 |
| 5:15 PM | 17 | 0 | 5 | 3 | 22 | 7 | 100 | 13 | 0 | 120 | 8 | 0 | 18 | 4 | 26 | 2 | 55 | 5 | 6 | 62 | 230 |
| 5:30 PM | 14 | 0 | 7 | 10 | 21 | 10 | 77 | 23 | 1 | 110 | 5 | 0 | 15 | 4 | 20 | 2 | 56 | 3 | 4 | 61 | 212 |
| 5:45 PM | 7 | 0 | 5 | 0 | 12 | 10 | 62 | 17 | 0 | 89 | 4 | 1 | 8 | 5 | 13 | 0 | 62 | 7 | 2 | 69 | 183 |
| Hourly Total | 51 | 0 | 25 | 15 | 76 | 40 | 320 | 66 | 1 | 426 | 20 | 1 | 49 | 18 | 70 | 6 | 241 | 22 | 13 | 269 | 841 |
| Grand Total | 113 | 0 | 49 | 20 | 162 | 60 | 643 | 127 | 6 | 830 | 34 | 1 | 85 | 29 | 120 | 12 | 511 | 32 | 26 | 555 | 1667 |
| Approach % | 69.8 | 0.0 | 30.2 | - | - | 7.2 | 77.5 | 15.3 | - | - | 28.3 | 0.8 | 70.8 | - | - | 2.2 | 92.1 | 5.8 | - | - | - |
| Total % | 6.8 | 0.0 | 2.9 | - | 9.7 | 3.6 | 38.6 | 7.6 | - | 49.8 | 2.0 | 0.1 | 5.1 | - | 7.2 | 0.7 | 30.7 | 1.9 | - | 33.3 | - |
| Lights | 111 | 0 | 49 | - | 160 | 59 | 625 | 112 | - | 796 | 34 | 1 | 84 | - | 119 | 12 | 495 | 32 | - | 539 | 1614 |
| % Lights | 98.2 | - | 100.0 | - | 98.8 | 98.3 | 97.2 | 88.2 | - | 95.9 | 100.0 | 100.0 | 98.8 | - | 99.2 | 100.0 | 96.9 | 100.0 | - | 97.1 | 96.8 |
| Buses | 0 | 0 | 0 | - | 0 | 1 | 15 | 15 | - | 31 | 0 | 0 | 1 | - | 1 | 0 | 10 | 0 | - | 10 | 42 |
| % Buses | 0.0 | - | 0.0 | - | 0.0 | 1.7 | 2.3 | 11.8 | - | 3.7 | 0.0 | 0.0 | 1.2 | - | 0.8 | 0.0 | 2.0 | 0.0 | - | 1.8 | 2.5 |
| Trucks | 1 | 0 | 0 | - | 1 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 4 | 0 | - | 4 | 7 |
| % Trucks | 0.9 | - | 0.0 | - | 0.6 | 0.0 | 0.3 | 0.0 | - | 0.2 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.8 | 0.0 | - | 0.7 | 0.4 |
| Bicycles on Road | 1 | 0 | 0 | - | 1 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 4 |
| % Bicycles on Road | 0.9 | - | 0.0 | - | 0.6 | 0.0 | 0.2 | 0.0 | - | 0.1 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.4 | 0.0 | - | 0.4 | 0.2 |
| Bicycles on Crosswalk | - | - | - | 2 | - | - | - | - | 0 | - | - | - | - | 3 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 10.0 | - | - | - | - | 0.0 | - | - | - | - | 10.3 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 18 | - | - | - | - | 6 | - | - | - | - | 26 | - | - | - | - | 26 | - | - |
| % Pedestrians | - | - | - | 90.0 | - | - | - | - | 100.0 | - | - | - | - | 89.7 | - | - | - | - | 100.0 | - | - |



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Count Name: 23181_Westmount Shopping
Centre Access (East) & Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Count Name: 23181_Westmount Shopping
Centre Access (East) & Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (4:45 PM)

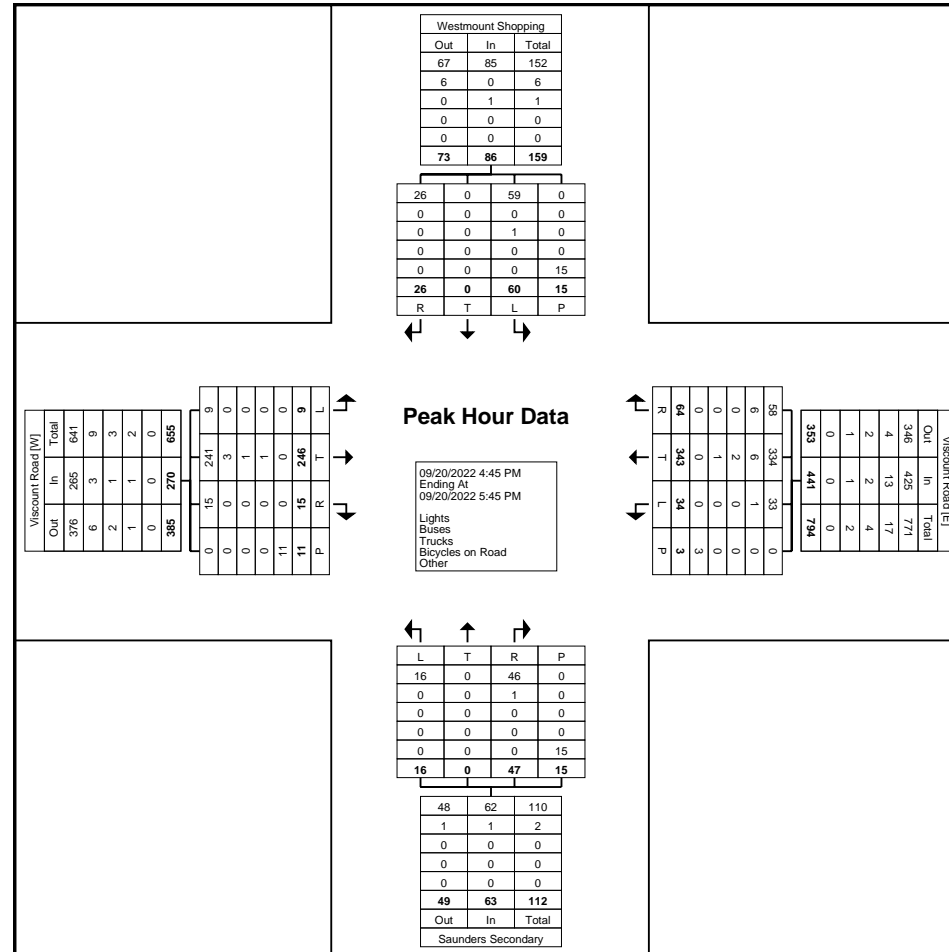
| Start Time | Westmount Shopping Centre Access - East Southbound | | | | | Viscount Road Westbound | | | | | Saunders Secondary School Driveway Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|-------------------------------------------------------|-------|-------|------|------------|----------------------------|-------|-------|-------|------------|--------------------------------------------------|-------|-------|-------|------------|----------------------------|-------|-------|-------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:45 PM | 16 | 0 | 6 | 0 | 22 | 4 | 85 | 15 | 2 | 104 | 0 | 0 | 6 | 2 | 6 | 3 | 67 | 0 | 0 | 70 | 202 |
| 5:00 PM | 13 | 0 | 8 | 2 | 21 | 13 | 81 | 13 | 0 | 107 | 3 | 0 | 8 | 5 | 11 | 2 | 68 | 7 | 1 | 77 | 216 |
| 5:15 PM | 17 | 0 | 5 | 3 | 22 | 7 | 100 | 13 | 0 | 120 | 8 | 0 | 18 | 4 | 26 | 2 | 55 | 5 | 6 | 62 | 230 |
| 5:30 PM | 14 | 0 | 7 | 10 | 21 | 10 | 77 | 23 | 1 | 110 | 5 | 0 | 15 | 4 | 20 | 2 | 56 | 3 | 4 | 61 | 212 |
| Total | 60 | 0 | 26 | 15 | 86 | 34 | 343 | 64 | 3 | 441 | 16 | 0 | 47 | 15 | 63 | 9 | 246 | 15 | 11 | 270 | 860 |
| Approach % | 69.8 | 0.0 | 30.2 | - | - | 7.7 | 77.8 | 14.5 | - | - | 25.4 | 0.0 | 74.6 | - | - | 3.3 | 91.1 | 5.6 | - | - | - |
| Total % | 7.0 | 0.0 | 3.0 | - | 10.0 | 4.0 | 39.9 | 7.4 | - | 51.3 | 1.9 | 0.0 | 5.5 | - | 7.3 | 1.0 | 28.6 | 1.7 | - | 31.4 | - |
| PHF | 0.882 | 0.000 | 0.813 | - | 0.977 | 0.654 | 0.858 | 0.696 | - | 0.919 | 0.500 | 0.000 | 0.653 | - | 0.606 | 0.750 | 0.904 | 0.536 | - | 0.877 | 0.935 |
| Lights | 59 | 0 | 26 | - | 85 | 33 | 334 | 58 | - | 425 | 16 | 0 | 46 | - | 62 | 9 | 241 | 15 | - | 265 | 837 |
| % Lights | 98.3 | - | 100.0 | - | 98.8 | 97.1 | 97.4 | 90.6 | - | 96.4 | 100.0 | - | 97.9 | - | 98.4 | 100.0 | 98.0 | 100.0 | - | 98.1 | 97.3 |
| Buses | 0 | 0 | 0 | - | 0 | 1 | 6 | 6 | - | 13 | 0 | 0 | 1 | - | 1 | 0 | 3 | 0 | - | 3 | 17 |
| % Buses | 0.0 | - | 0.0 | - | 0.0 | 2.9 | 1.7 | 9.4 | - | 2.9 | 0.0 | - | 2.1 | - | 1.6 | 0.0 | 1.2 | 0.0 | - | 1.1 | 2.0 |
| Trucks | 1 | 0 | 0 | - | 1 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 4 |
| % Trucks | 1.7 | - | 0.0 | - | 1.2 | 0.0 | 0.6 | 0.0 | - | 0.5 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.4 | 0.0 | - | 0.4 | 0.5 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 2 |
| % Bicycles on Road | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.3 | 0.0 | - | 0.2 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.4 | 0.0 | - | 0.4 | 0.2 |
| Bicycles on Crosswalk | - | - | - | 2 | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 13.3 | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 13 | - | - | - | - | 3 | - | - | - | - | 15 | - | - | - | - | 11 | - | - |
| % Pedestrians | - | - | - | 86.7 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |



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Centre Access (East) & Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 4



Turning Movement Peak Hour Data Plot (4:45 PM)



LEA Consulting Ltd.
625 Cochrane Drive

Markam, Ontario, Canada L3R 9R9
905-470-0015 x240 Klo@LEA.ca

Count Name: 23181_Westmount Shopping
Centre Access (West) & Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

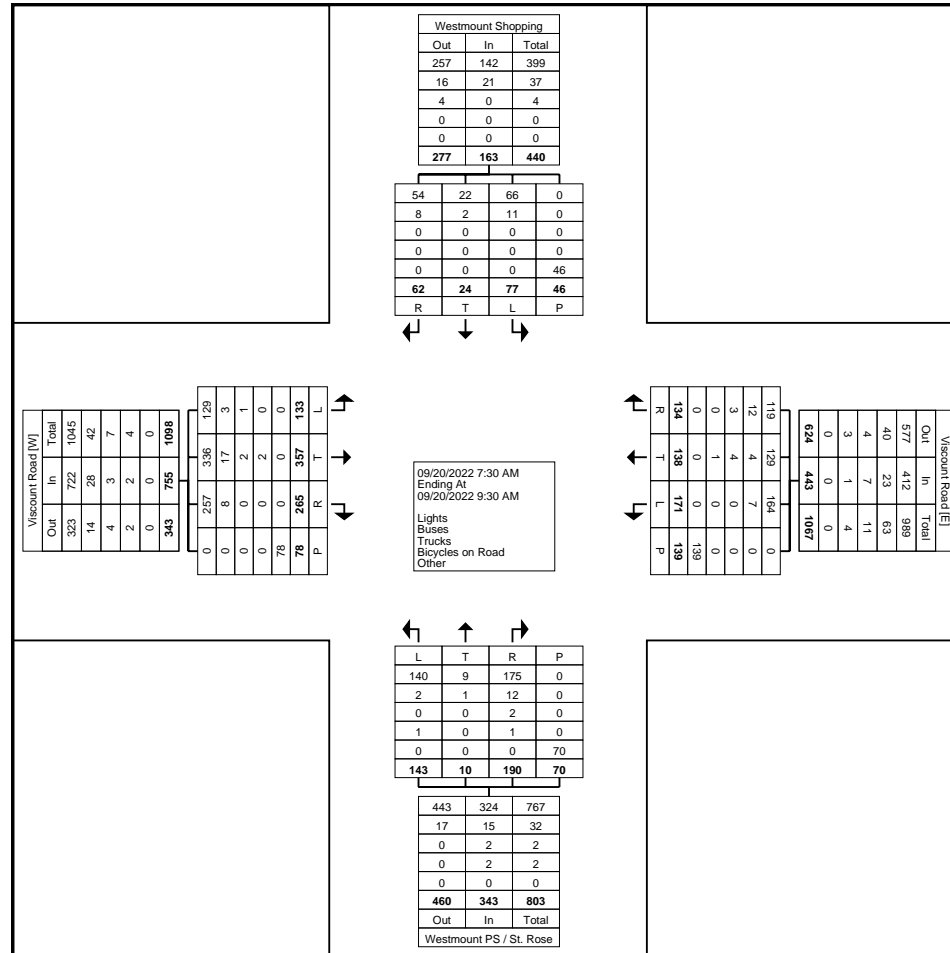
| Start Time | Westmount Shopping Centre Access - West Southbound | | | | | Viscount Road Westbound | | | | | Westmount PS / St. Rose of Lima CS Access Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------------------------|------|-------|-------|------------|-------------------------|------|-------|------|------------|------------------------------------------------------|------|-------|-------|------------|-------------------------|------|-------|-------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 7:30 AM | 8 | 0 | 4 | 0 | 12 | 4 | 14 | 12 | 3 | 30 | 3 | 0 | 10 | 2 | 13 | 16 | 47 | 19 | 1 | 82 | 137 |
| 7:45 AM | 8 | 3 | 2 | 2 | 13 | 23 | 14 | 21 | 23 | 58 | 15 | 1 | 19 | 14 | 35 | 24 | 74 | 45 | 6 | 143 | 249 |
| Hourly Total | 16 | 3 | 6 | 2 | 25 | 27 | 28 | 33 | 26 | 88 | 18 | 1 | 29 | 16 | 48 | 40 | 121 | 64 | 7 | 225 | 386 |
| 8:00 AM | 16 | 16 | 10 | 13 | 42 | 37 | 17 | 29 | 52 | 83 | 33 | 4 | 35 | 27 | 72 | 20 | 67 | 55 | 13 | 142 | 339 |
| 8:15 AM | 3 | 1 | 4 | 4 | 8 | 27 | 25 | 12 | 9 | 64 | 11 | 0 | 15 | 1 | 26 | 9 | 35 | 16 | 2 | 60 | 158 |
| 8:30 AM | 7 | 1 | 7 | 7 | 15 | 23 | 17 | 12 | 12 | 52 | 9 | 0 | 18 | 0 | 27 | 16 | 38 | 31 | 8 | 85 | 179 |
| 8:45 AM | 11 | 3 | 13 | 4 | 27 | 23 | 10 | 15 | 20 | 48 | 22 | 1 | 40 | 10 | 63 | 16 | 32 | 64 | 13 | 112 | 250 |
| Hourly Total | 37 | 21 | 34 | 28 | 92 | 110 | 69 | 68 | 93 | 247 | 75 | 5 | 108 | 38 | 188 | 61 | 172 | 166 | 36 | 399 | 926 |
| 9:00 AM | 16 | 0 | 11 | 8 | 27 | 26 | 24 | 22 | 6 | 72 | 36 | 4 | 41 | 9 | 81 | 13 | 33 | 29 | 28 | 75 | 255 |
| 9:15 AM | 8 | 0 | 11 | 8 | 19 | 8 | 17 | 11 | 14 | 36 | 14 | 0 | 12 | 7 | 26 | 19 | 31 | 6 | 7 | 56 | 137 |
| Grand Total | 77 | 24 | 62 | 46 | 163 | 171 | 138 | 134 | 139 | 443 | 143 | 10 | 190 | 70 | 343 | 133 | 357 | 265 | 78 | 755 | 1704 |
| Approach % | 47.2 | 14.7 | 38.0 | - | - | 38.6 | 31.2 | 30.2 | - | - | 41.7 | 2.9 | 55.4 | - | - | 17.6 | 47.3 | 35.1 | - | - | - |
| Total % | 4.5 | 1.4 | 3.6 | - | 9.6 | 10.0 | 8.1 | 7.9 | - | 26.0 | 8.4 | 0.6 | 11.2 | - | 20.1 | 7.8 | 21.0 | 15.6 | - | 44.3 | - |
| Lights | 66 | 22 | 54 | - | 142 | 164 | 129 | 119 | - | 412 | 140 | 9 | 175 | - | 324 | 129 | 336 | 257 | - | 722 | 1600 |
| % Lights | 85.7 | 91.7 | 87.1 | - | 87.1 | 95.9 | 93.5 | 88.8 | - | 93.0 | 97.9 | 90.0 | 92.1 | - | 94.5 | 97.0 | 94.1 | 97.0 | - | 95.6 | 93.9 |
| Buses | 11 | 2 | 8 | - | 21 | 7 | 4 | 12 | - | 23 | 2 | 1 | 12 | - | 15 | 3 | 17 | 8 | - | 28 | 87 |
| % Buses | 14.3 | 8.3 | 12.9 | - | 12.9 | 4.1 | 2.9 | 9.0 | - | 5.2 | 1.4 | 10.0 | 6.3 | - | 4.4 | 2.3 | 4.8 | 3.0 | - | 3.7 | 5.1 |
| Trucks | 0 | 0 | 0 | - | 0 | 0 | 4 | 3 | - | 7 | 0 | 0 | 2 | - | 2 | 1 | 2 | 0 | - | 3 | 12 |
| % Trucks | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 2.9 | 2.2 | - | 1.6 | 0.0 | 0.0 | 1.1 | - | 0.6 | 0.8 | 0.6 | 0.0 | - | 0.4 | 0.7 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 1 | 0 | 1 | - | 2 | 0 | 2 | 0 | - | 2 | 5 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.7 | 0.0 | - | 0.2 | 0.7 | 0.0 | 0.5 | - | 0.6 | 0.0 | 0.6 | 0.0 | - | 0.3 | 0.3 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 2 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 1.4 | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 46 | - | - | - | - | 137 | - | - | - | - | 70 | - | - | - | - | 78 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 98.6 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |



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Count Name: 23181_Westmount Shopping
Centre Access (West) & Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Count Name: 23181_Westmount Shopping
Centre Access (West) & Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (8:00 AM)

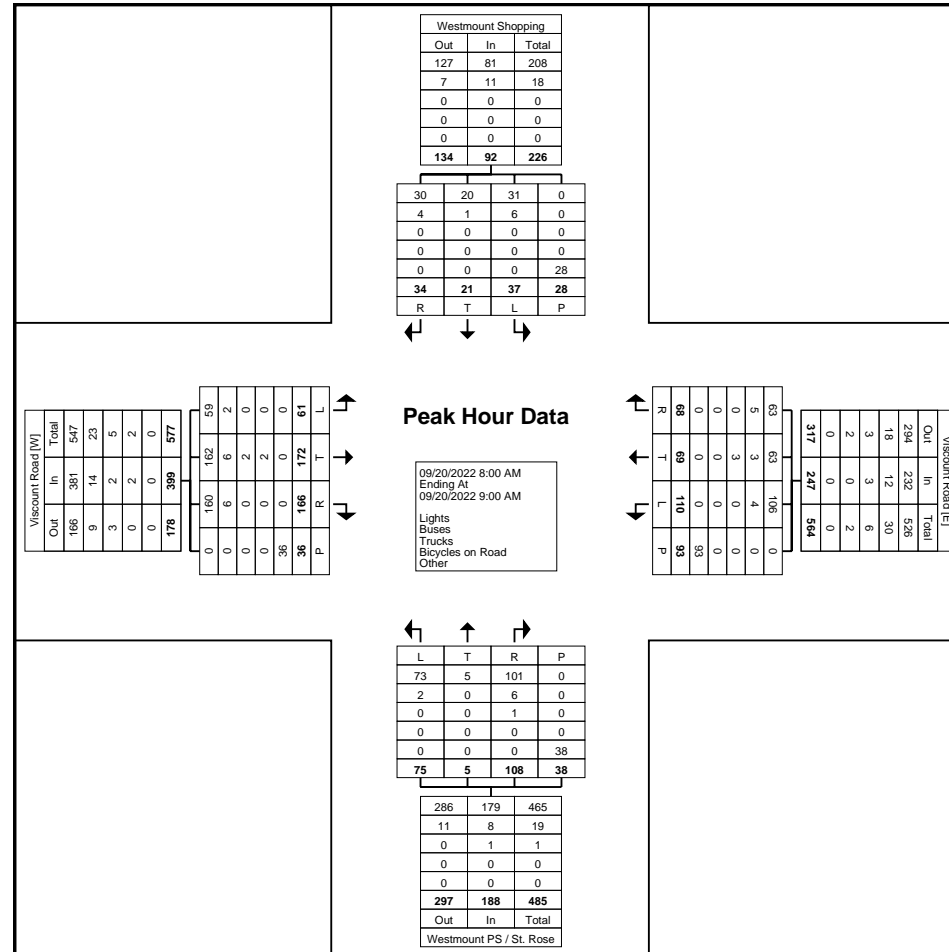
| Start Time | Westmount Shopping Centre Access - West Southbound | | | | | Viscount Road Westbound | | | | | Westmount PS / St. Rose of Lima CS Access Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------------------------|-------|-------|-------|------------|-------------------------|-------|-------|------|------------|------------------------------------------------------|-------|-------|-------|------------|-------------------------|-------|-------|-------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 8:00 AM | 16 | 16 | 10 | 13 | 42 | 37 | 17 | 29 | 52 | 83 | 33 | 4 | 35 | 27 | 72 | 20 | 67 | 55 | 13 | 142 | 339 |
| 8:15 AM | 3 | 1 | 4 | 4 | 8 | 27 | 25 | 12 | 9 | 64 | 11 | 0 | 15 | 1 | 26 | 9 | 35 | 16 | 2 | 60 | 158 |
| 8:30 AM | 7 | 1 | 7 | 7 | 15 | 23 | 17 | 12 | 12 | 52 | 9 | 0 | 18 | 0 | 27 | 16 | 38 | 31 | 8 | 85 | 179 |
| 8:45 AM | 11 | 3 | 13 | 4 | 27 | 23 | 10 | 15 | 20 | 48 | 22 | 1 | 40 | 10 | 63 | 16 | 32 | 64 | 13 | 112 | 250 |
| Total | 37 | 21 | 34 | 28 | 92 | 110 | 69 | 68 | 93 | 247 | 75 | 5 | 108 | 38 | 188 | 61 | 172 | 166 | 36 | 399 | 926 |
| Approach % | 40.2 | 22.8 | 37.0 | - | - | 44.5 | 27.9 | 27.5 | - | - | 39.9 | 2.7 | 57.4 | - | - | 15.3 | 43.1 | 41.6 | - | - | - |
| Total % | 4.0 | 2.3 | 3.7 | - | 9.9 | 11.9 | 7.5 | 7.3 | - | 26.7 | 8.1 | 0.5 | 11.7 | - | 20.3 | 6.6 | 18.6 | 17.9 | - | 43.1 | - |
| PHF | 0.578 | 0.328 | 0.654 | - | 0.548 | 0.743 | 0.690 | 0.586 | - | 0.744 | 0.568 | 0.313 | 0.675 | - | 0.653 | 0.763 | 0.642 | 0.648 | - | 0.702 | 0.683 |
| Lights | 31 | 20 | 30 | - | 81 | 106 | 63 | 63 | - | 232 | 73 | 5 | 101 | - | 179 | 59 | 162 | 160 | - | 381 | 873 |
| % Lights | 83.8 | 95.2 | 88.2 | - | 88.0 | 96.4 | 91.3 | 92.6 | - | 93.9 | 97.3 | 100.0 | 93.5 | - | 95.2 | 96.7 | 94.2 | 96.4 | - | 95.5 | 94.3 |
| Buses | 6 | 1 | 4 | - | 11 | 4 | 3 | 5 | - | 12 | 2 | 0 | 6 | - | 8 | 2 | 6 | 6 | - | 14 | 45 |
| % Buses | 16.2 | 4.8 | 11.8 | - | 12.0 | 3.6 | 4.3 | 7.4 | - | 4.9 | 2.7 | 0.0 | 5.6 | - | 4.3 | 3.3 | 3.5 | 3.6 | - | 3.5 | 4.9 |
| Trucks | 0 | 0 | 0 | - | 0 | 0 | 3 | 0 | - | 3 | 0 | 0 | 1 | - | 1 | 0 | 2 | 0 | - | 2 | 6 |
| % Trucks | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 4.3 | 0.0 | - | 1.2 | 0.0 | 0.0 | 0.9 | - | 0.5 | 0.0 | 1.2 | 0.0 | - | 0.5 | 0.6 |
| Bicycles on Road | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 2 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 1.2 | 0.0 | - | 0.5 | 0.2 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 1 | - | - | - | - | 0 | - | - | - | - | 0 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 1.1 | - | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - |
| Pedestrians | - | - | - | 28 | - | - | - | - | 92 | - | - | - | - | 38 | - | - | - | - | 36 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 98.9 | - | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - |



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Count Name: 23181_Westmount Shopping
Centre Access (West) & Viscount Rd-AM
Site Code: 23181
Start Date: 09/20/2022
Page No: 4



Turning Movement Peak Hour Data Plot (8:00 AM)



LEA Consulting Ltd.
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Count Name: 23181_Westmount Shopping
Centre Access (West) & Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 1

Turning Movement Data

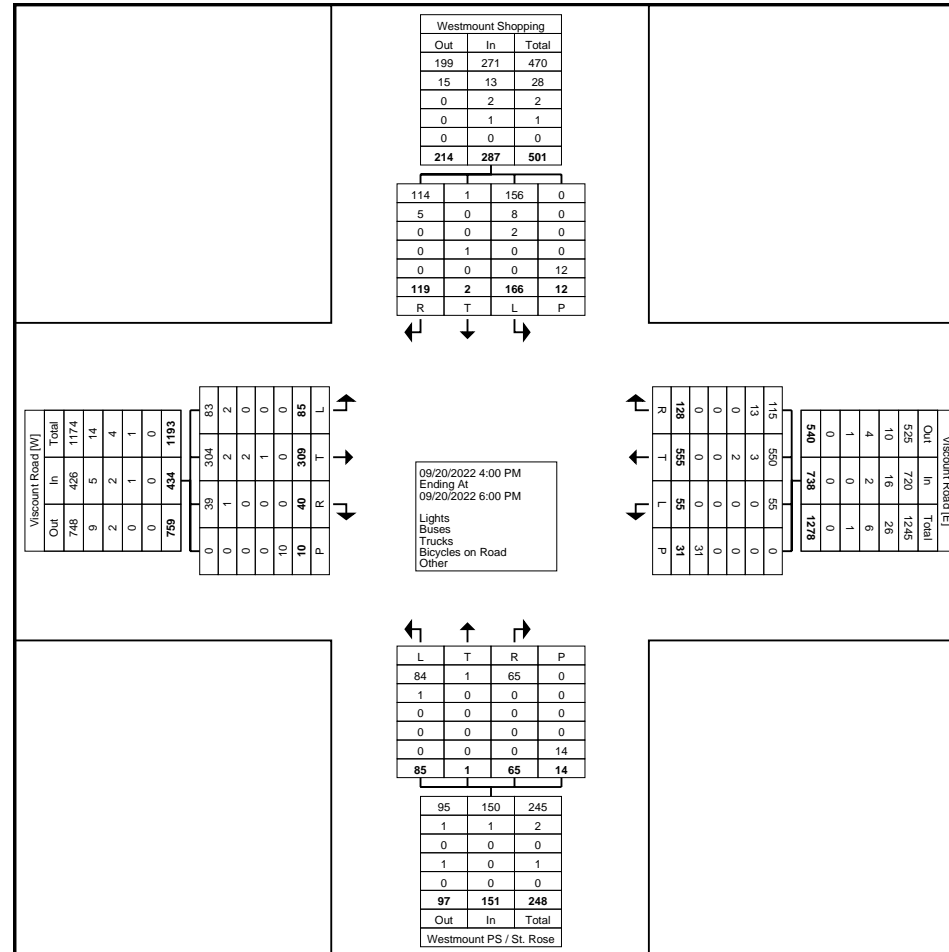
| Start Time | Westmount Shopping Centre Access - West Southbound | | | | | Viscount Road Westbound | | | | | Westmount PS / St. Rose of Lima CS Access Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------------------------|------|-------|------|------------|-------------------------|------|-------|-------|------------|------------------------------------------------------|-------|-------|------|------------|-------------------------|------|-------|------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:00 PM | 29 | 0 | 20 | 1 | 49 | 5 | 72 | 16 | 9 | 93 | 21 | 1 | 21 | 4 | 43 | 7 | 36 | 5 | 2 | 48 | 233 |
| 4:15 PM | 21 | 0 | 16 | 3 | 37 | 5 | 69 | 10 | 1 | 84 | 11 | 0 | 12 | 1 | 23 | 12 | 32 | 2 | 3 | 46 | 190 |
| 4:30 PM | 19 | 0 | 18 | 1 | 37 | 10 | 65 | 23 | 3 | 98 | 10 | 0 | 9 | 1 | 19 | 9 | 34 | 11 | 0 | 54 | 208 |
| 4:45 PM | 23 | 0 | 15 | 0 | 38 | 12 | 61 | 17 | 1 | 90 | 10 | 0 | 6 | 1 | 16 | 15 | 43 | 10 | 0 | 68 | 212 |
| Hourly Total | 92 | 0 | 69 | 5 | 161 | 32 | 267 | 66 | 14 | 365 | 52 | 1 | 48 | 7 | 101 | 43 | 145 | 28 | 5 | 216 | 843 |
| 5:00 PM | 19 | 1 | 18 | 1 | 38 | 5 | 73 | 18 | 2 | 96 | 14 | 0 | 5 | 2 | 19 | 10 | 48 | 8 | 0 | 66 | 219 |
| 5:15 PM | 17 | 1 | 17 | 0 | 35 | 6 | 90 | 13 | 7 | 109 | 10 | 0 | 5 | 3 | 15 | 12 | 37 | 3 | 2 | 52 | 211 |
| 5:30 PM | 17 | 0 | 6 | 3 | 23 | 3 | 76 | 14 | 4 | 93 | 6 | 0 | 4 | 1 | 10 | 13 | 36 | 1 | 3 | 50 | 176 |
| 5:45 PM | 21 | 0 | 9 | 3 | 30 | 9 | 49 | 17 | 4 | 75 | 3 | 0 | 3 | 1 | 6 | 7 | 43 | 0 | 0 | 50 | 161 |
| Hourly Total | 74 | 2 | 50 | 7 | 126 | 23 | 288 | 62 | 17 | 373 | 33 | 0 | 17 | 7 | 50 | 42 | 164 | 12 | 5 | 218 | 767 |
| Grand Total | 166 | 2 | 119 | 12 | 287 | 55 | 555 | 128 | 31 | 738 | 85 | 1 | 65 | 14 | 151 | 85 | 309 | 40 | 10 | 434 | 1610 |
| Approach % | 57.8 | 0.7 | 41.5 | - | - | 7.5 | 75.2 | 17.3 | - | - | 56.3 | 0.7 | 43.0 | - | - | 19.6 | 71.2 | 9.2 | - | - | - |
| Total % | 10.3 | 0.1 | 7.4 | - | 17.8 | 3.4 | 34.5 | 8.0 | - | 45.8 | 5.3 | 0.1 | 4.0 | - | 9.4 | 5.3 | 19.2 | 2.5 | - | 27.0 | - |
| Lights | 156 | 1 | 114 | - | 271 | 55 | 550 | 115 | - | 720 | 84 | 1 | 65 | - | 150 | 83 | 304 | 39 | - | 426 | 1567 |
| % Lights | 94.0 | 50.0 | 95.8 | - | 94.4 | 100.0 | 99.1 | 89.8 | - | 97.6 | 98.8 | 100.0 | 100.0 | - | 99.3 | 97.6 | 98.4 | 97.5 | - | 98.2 | 97.3 |
| Buses | 8 | 0 | 5 | - | 13 | 0 | 3 | 13 | - | 16 | 1 | 0 | 0 | - | 1 | 2 | 2 | 1 | - | 5 | 35 |
| % Buses | 4.8 | 0.0 | 4.2 | - | 4.5 | 0.0 | 0.5 | 10.2 | - | 2.2 | 1.2 | 0.0 | 0.0 | - | 0.7 | 2.4 | 0.6 | 2.5 | - | 1.2 | 2.2 |
| Trucks | 2 | 0 | 0 | - | 2 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 2 | 0 | - | 2 | 6 |
| % Trucks | 1.2 | 0.0 | 0.0 | - | 0.7 | 0.0 | 0.4 | 0.0 | - | 0.3 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.6 | 0.0 | - | 0.5 | 0.4 |
| Bicycles on Road | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 1 | 0 | - | 1 | 2 |
| % Bicycles on Road | 0.0 | 50.0 | 0.0 | - | 0.3 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.3 | 0.0 | - | 0.2 | 0.1 |
| Bicycles on Crosswalk | - | - | - | 2 | - | - | - | - | 0 | - | - | - | - | 3 | - | - | - | - | 1 | - | - |
| % Bicycles on Crosswalk | - | - | - | 16.7 | - | - | - | - | 0.0 | - | - | - | - | 21.4 | - | - | - | - | 10.0 | - | - |
| Pedestrians | - | - | - | 10 | - | - | - | - | 31 | - | - | - | - | 11 | - | - | - | - | 9 | - | - |
| % Pedestrians | - | - | - | 83.3 | - | - | - | - | 100.0 | - | - | - | - | 78.6 | - | - | - | - | 90.0 | - | - |



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Count Name: 23181_Westmount Shopping
Centre Access (West) & Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 2



Turning Movement Data Plot



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Count Name: 23181_Westmount Shopping
Centre Access (West) & Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 3

Turning Movement Peak Hour Data (4:30 PM)

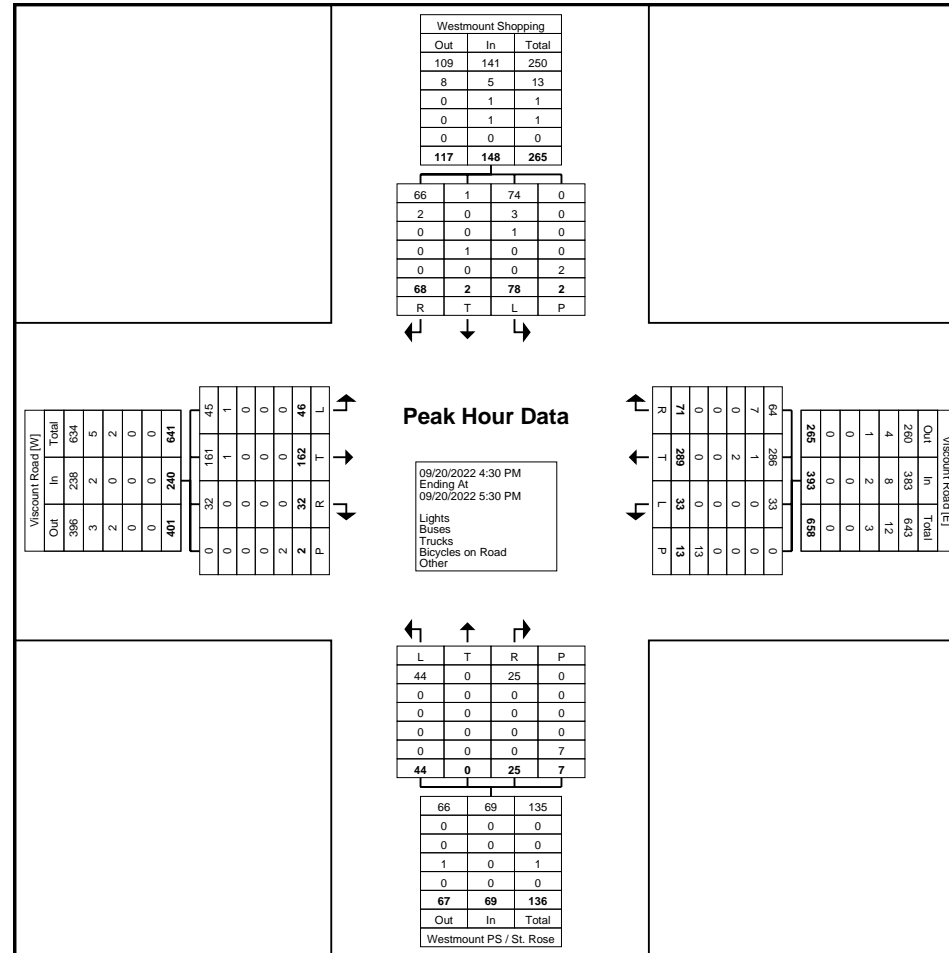
| Start Time | Westmount Shopping Centre Access - West Southbound | | | | | Viscount Road Westbound | | | | | Westmount PS / St. Rose of Lima CS Access Northbound | | | | | Viscount Road Eastbound | | | | | Int. Total |
|-------------------------|----------------------------------------------------|----------|-----------|----------|------------|-------------------------|------------|-----------|-----------|------------|------------------------------------------------------|----------|-----------|----------|------------|-------------------------|------------|-----------|----------|------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | |
| 4:30 PM | 19 | 0 | 18 | 1 | 37 | 10 | 65 | 23 | 3 | 98 | 10 | 0 | 9 | 1 | 19 | 9 | 34 | 11 | 0 | 54 | 208 |
| 4:45 PM | 23 | 0 | 15 | 0 | 38 | 12 | 61 | 17 | 1 | 90 | 10 | 0 | 6 | 1 | 16 | 15 | 43 | 10 | 0 | 68 | 212 |
| 5:00 PM | 19 | 1 | 18 | 1 | 38 | 5 | 73 | 18 | 2 | 96 | 14 | 0 | 5 | 2 | 19 | 10 | 48 | 8 | 0 | 66 | 219 |
| 5:15 PM | 17 | 1 | 17 | 0 | 35 | 6 | 90 | 13 | 7 | 109 | 10 | 0 | 5 | 3 | 15 | 12 | 37 | 3 | 2 | 52 | 211 |
| Total | 78 | 2 | 68 | 2 | 148 | 33 | 289 | 71 | 13 | 393 | 44 | 0 | 25 | 7 | 69 | 46 | 162 | 32 | 2 | 240 | 850 |
| Approach % | 52.7 | 1.4 | 45.9 | - | - | 8.4 | 73.5 | 18.1 | - | - | 63.8 | 0.0 | 36.2 | - | - | 19.2 | 67.5 | 13.3 | - | - | - |
| Total % | 9.2 | 0.2 | 8.0 | - | 17.4 | 3.9 | 34.0 | 8.4 | - | 46.2 | 5.2 | 0.0 | 2.9 | - | 8.1 | 5.4 | 19.1 | 3.8 | - | 28.2 | - |
| PHF | 0.848 | 0.500 | 0.944 | - | 0.974 | 0.688 | 0.803 | 0.772 | - | 0.901 | 0.786 | 0.000 | 0.694 | - | 0.908 | 0.767 | 0.844 | 0.727 | - | 0.882 | 0.970 |
| Lights | 74 | 1 | 66 | - | 141 | 33 | 286 | 64 | - | 383 | 44 | 0 | 25 | - | 69 | 45 | 161 | 32 | - | 238 | 831 |
| % Lights | 94.9 | 50.0 | 97.1 | - | 95.3 | 100.0 | 99.0 | 90.1 | - | 97.5 | 100.0 | - | 100.0 | - | 100.0 | 97.8 | 99.4 | 100.0 | - | 99.2 | 97.8 |
| Buses | 3 | 0 | 2 | - | 5 | 0 | 1 | 7 | - | 8 | 0 | 0 | 0 | - | 0 | 1 | 1 | 0 | - | 2 | 15 |
| % Buses | 3.8 | 0.0 | 2.9 | - | 3.4 | 0.0 | 0.3 | 9.9 | - | 2.0 | 0.0 | - | 0.0 | - | 0.0 | 2.2 | 0.6 | 0.0 | - | 0.8 | 1.8 |
| Trucks | 1 | 0 | 0 | - | 1 | 0 | 2 | 0 | - | 2 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 3 |
| % Trucks | 1.3 | 0.0 | 0.0 | - | 0.7 | 0.0 | 0.7 | 0.0 | - | 0.5 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.4 |
| Bicycles on Road | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 50.0 | 0.0 | - | 0.7 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Bicycles on Crosswalk | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | 1 | - | - | - | - | 1 | - | - |
| % Bicycles on Crosswalk | - | - | - | 0.0 | - | - | - | - | 0.0 | - | - | - | - | 14.3 | - | - | - | - | 50.0 | - | - |
| Pedestrians | - | - | - | 2 | - | - | - | - | 13 | - | - | - | - | 6 | - | - | - | - | 1 | - | - |
| % Pedestrians | - | - | - | 100.0 | - | - | - | - | 100.0 | - | - | - | - | 85.7 | - | - | - | - | 50.0 | - | - |



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Centre Access (West) & Viscount Rd-PM
Site Code: 23181
Start Date: 09/20/2022
Page No: 4



Turning Movement Peak Hour Data Plot (4:30 PM)

LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

Project No.: 23181
Intersection: Woodcrest Blvd & Viscount
Weather: Clear
Surveyor(s): ID

File Name : Woodcrest Blvd & Viscount Rd - AM
Site Code : 00023181
Start Date : 2022-09-20
Page No : 1

Groups Printed- Cars/lights - Trucks - Buses

| Start Time | Woodcrest Blvd Southbound | | | | Viscount Rd Westbound | | | | Viscount Rd Eastbound | | | | Exclu. Total | Inclu. Total | Int. Total |
|---------------|---------------------------|-------|------|------------|-----------------------|-------|------|------------|-----------------------|------|------|------------|--------------|--------------|------------|
| | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | | | |
| 07:30 | 14 | 4 | [1] | 18 | 17 | 3 | [1] | 20 | 0 | 69 | [2] | 69 | 4 | 107 | 111 |
| 07:45 | 17 | 5 | [2] | 22 | 24 | 10 | [0] | 34 | 2 | 129 | [8] | 131 | 10 | 187 | 197 |
| Total | 31 | 9 | [3] | 40 | 41 | 13 | [1] | 54 | 2 | 198 | [10] | 200 | 14 | 294 | 308 |
| 08:00 | 18 | 2 | [9] | 20 | 51 | 12 | [0] | 63 | 5 | 117 | [2] | 122 | 11 | 205 | 216 |
| 08:15 | 4 | 3 | [4] | 7 | 35 | 5 | [0] | 40 | 3 | 51 | [7] | 54 | 11 | 101 | 112 |
| 08:30 | 13 | 11 | [0] | 24 | 27 | 5 | [1] | 32 | 1 | 79 | [15] | 80 | 16 | 136 | 152 |
| 08:45 | 12 | 6 | [2] | 18 | 43 | 7 | [0] | 50 | 6 | 90 | [26] | 96 | 28 | 164 | 192 |
| Total | 47 | 22 | [15] | 69 | 156 | 29 | [1] | 185 | 15 | 337 | [50] | 352 | 66 | 606 | 672 |
| 09:00 | 14 | 3 | [3] | 17 | 51 | 17 | [0] | 68 | 3 | 54 | [7] | 57 | 10 | 142 | 152 |
| 09:15 | 13 | 3 | [7] | 16 | 25 | 15 | [0] | 40 | 3 | 42 | [1] | 45 | 8 | 101 | 109 |
| Grand Total | 105 | 37 | [28] | 142 | 273 | 74 | [2] | 347 | 23 | 631 | [68] | 654 | 98 | 1143 | 1241 |
| Apprch % | 73.9 | 26.1 | | | 78.7 | 21.3 | | | 3.5 | 96.5 | | | | | |
| Total % | 9.2 | 3.2 | | 12.4 | 23.9 | 6.5 | | 30.4 | 2 | 55.2 | | 57.2 | 7.9 | 92.1 | |
| Cars/lights | 104 | 33 | | 165 | 258 | 72 | | 330 | 23 | 602 | | 688 | 0 | 0 | 1183 |
| % Cars/lights | 99 | 89.2 | 100 | 97.1 | 94.5 | 97.3 | 0 | 94.6 | 100 | 95.4 | 92.6 | 95.3 | 0 | 0 | 95.3 |
| Trucks | 0 | 2 | | 2 | 4 | 0 | | 6 | 0 | 3 | | 8 | 0 | 0 | 16 |
| % Trucks | 0 | 5.4 | 0 | 1.2 | 1.5 | 0 | 100 | 1.7 | 0 | 0.5 | 7.4 | 1.1 | 0 | 0 | 1.3 |
| Buses | 1 | 2 | | 3 | 11 | 2 | | 13 | 0 | 26 | | 26 | 0 | 0 | 42 |
| % Buses | 1 | 5.4 | 0 | 1.8 | 4 | 2.7 | 0 | 3.7 | 0 | 4.1 | 0 | 3.6 | 0 | 0 | 3.4 |

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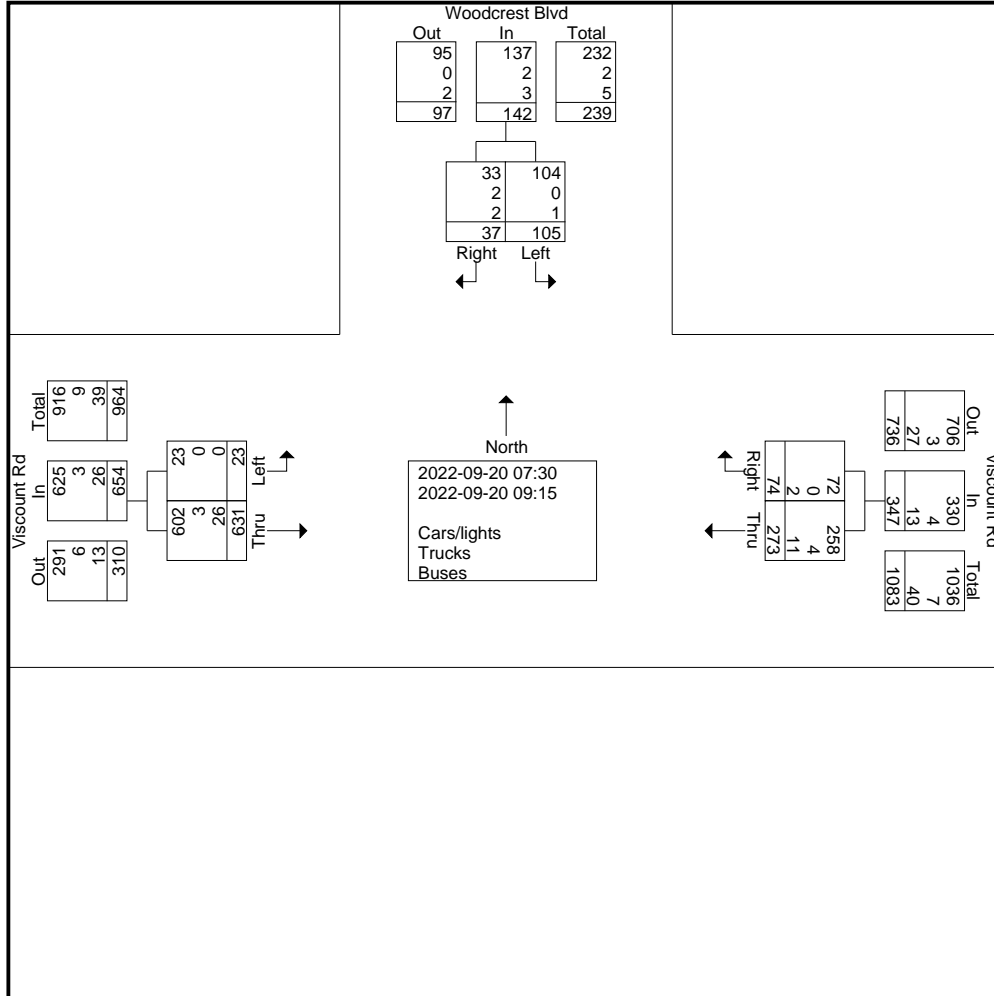
625 Cochrane Drive, 9th Floor
 Markham, ON L3R 9R9

File Name : Woodcrest Blvd & Viscount Rd - AM

Site Code : 00023181

Start Date : 2022-09-20

Page No : 2

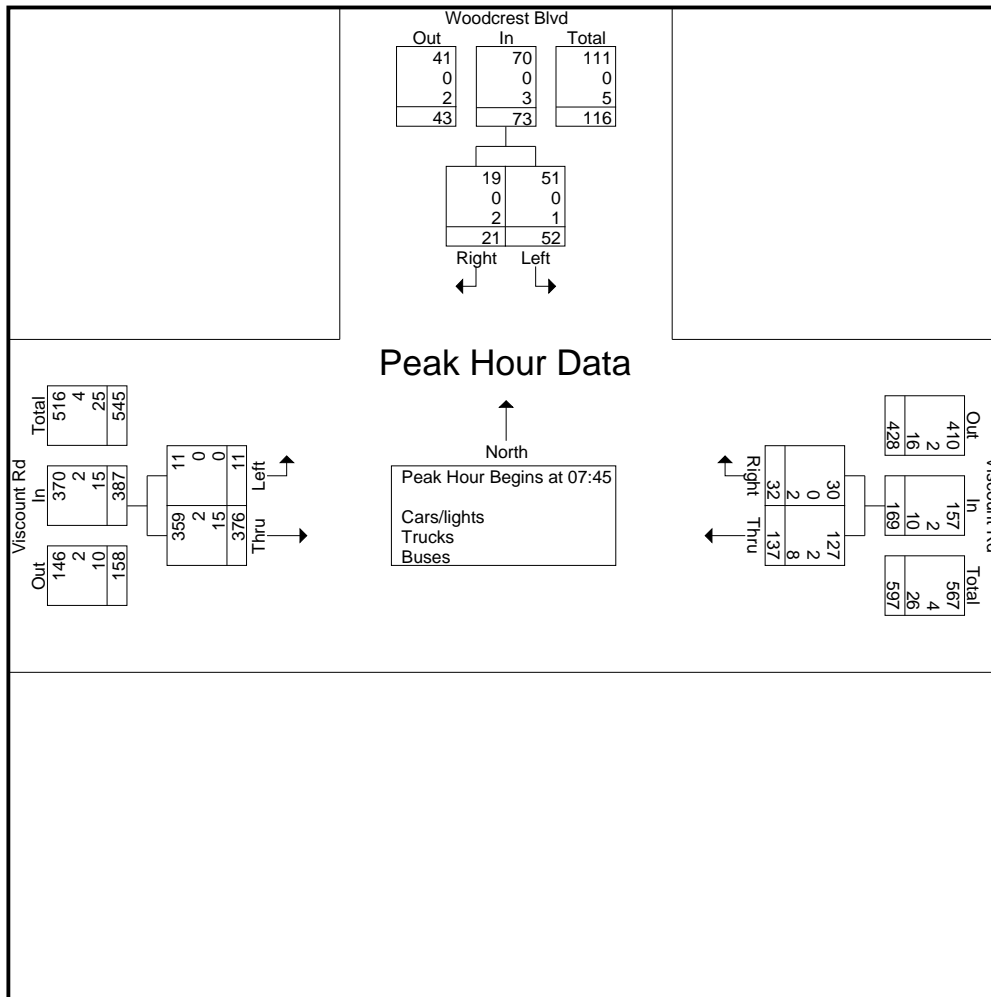


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Markham, ON L3R 9R9

File Name : Woodcrest Blvd & Viscount Rd - AM
Site Code : 00023181
Start Date : 2022-09-20
Page No : 3

| Start Time | Woodcrest Blvd Southbound | | | Viscount Rd Westbound | | | Viscount Rd Eastbound | | | Int. Total |
|------------------------------------------------------|---------------------------|-------|------------|-----------------------|-------|------------|-----------------------|------|------------|------------|
| | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | |
| Peak Hour Analysis From 07:30 to 09:15 - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 | | | | | | | | | | |
| 07:45 | 17 | 5 | 22 | 24 | 10 | 34 | 2 | 129 | 131 | 187 |
| 08:00 | 18 | 2 | 20 | 51 | 12 | 63 | 5 | 117 | 122 | 205 |
| 08:15 | 4 | 3 | 7 | 35 | 5 | 40 | 3 | 51 | 54 | 101 |
| 08:30 | 13 | 11 | 24 | 27 | 5 | 32 | 1 | 79 | 80 | 136 |
| Total Volume | 52 | 21 | 73 | 137 | 32 | 169 | 11 | 376 | 387 | 629 |
| % App. Total | 71.2 | 28.8 | | 81.1 | 18.9 | | 2.8 | 97.2 | | |
| PHF | .722 | .477 | .760 | .672 | .667 | .671 | .550 | .729 | .739 | .767 |
| Cars/lights | 51 | 19 | 70 | 127 | 30 | 157 | 11 | 359 | 370 | 597 |
| % Cars/lights | 98.1 | 90.5 | 95.9 | 92.7 | 93.8 | 92.9 | 100 | 95.5 | 95.6 | 94.9 |
| Trucks | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 2 | 4 |
| % Trucks | 0 | 0 | 0 | 1.5 | 0 | 1.2 | 0 | 0.5 | 0.5 | 0.6 |
| Buses | 1 | 2 | 3 | 8 | 2 | 10 | 0 | 15 | 15 | 28 |
| % Buses | 1.9 | 9.5 | 4.1 | 5.8 | 6.3 | 5.9 | 0 | 4.0 | 3.9 | 4.5 |



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Project No.: 23181
Intersection: Woodcrest Blvd & Viscount
Weather: Clear
Surveyor(s): ID

File Name : Woodcrest Blvd & Viscount Rd - PM
Site Code : 00023181
Start Date : 2022-09-20
Page No : 1

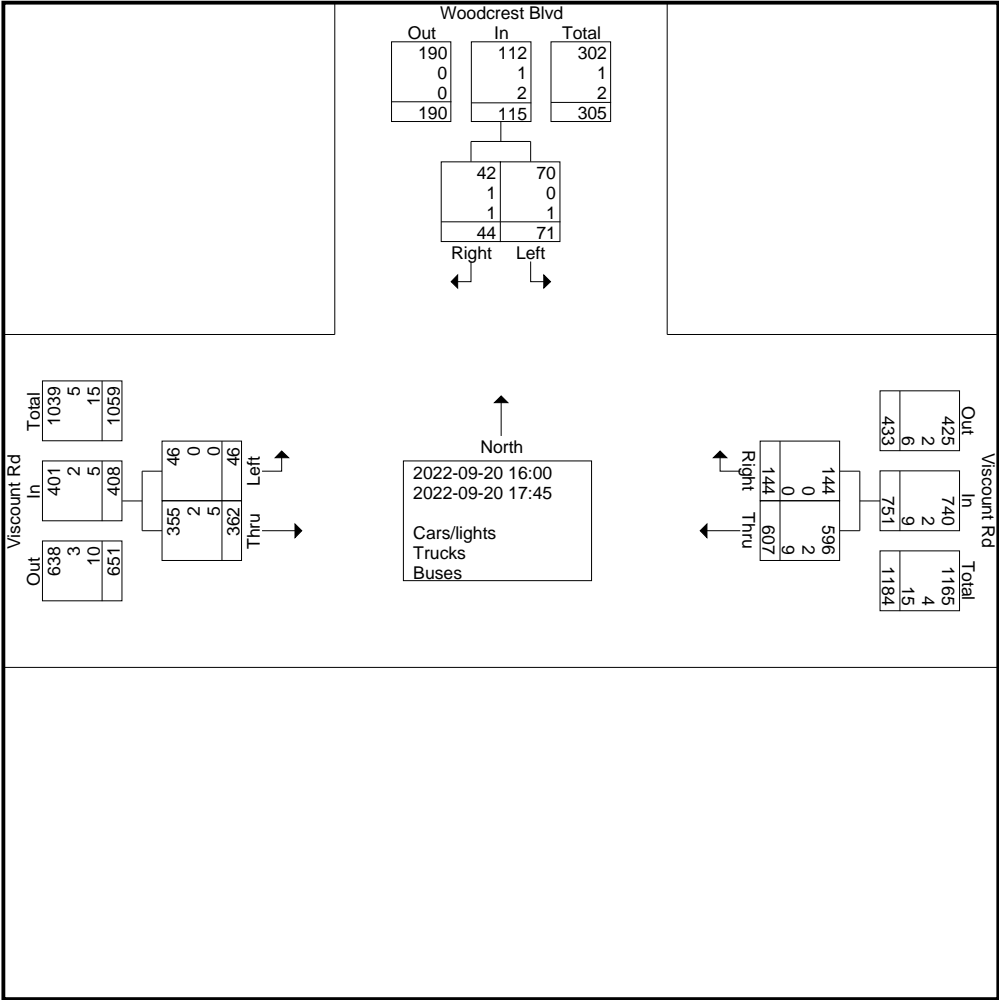
Groups Printed- Cars/lights - Trucks - Buses

| Start Time | Woodcrest Blvd Southbound | | | | Viscount Rd Westbound | | | | Viscount Rd Eastbound | | | | Exclu. Total | Inclu. Total | Int. Total |
|---------------|---------------------------|-------|------|------------|-----------------------|-------|------|------------|-----------------------|------|------|------------|--------------|--------------|------------|
| | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | Left | Thru | Peds | App. Total | | | |
| 16:00 | 10 | 5 | [3] | 15 | 96 | 15 | [1] | 111 | 6 | 43 | [0] | 49 | 4 | 175 | 179 |
| 16:15 | 1 | 4 | [2] | 5 | 77 | 19 | [0] | 96 | 4 | 42 | [5] | 46 | 7 | 147 | 154 |
| 16:30 | 13 | 6 | [3] | 19 | 76 | 17 | [0] | 93 | 6 | 42 | [2] | 48 | 5 | 160 | 165 |
| 16:45 | 14 | 6 | [6] | 20 | 70 | 17 | [0] | 87 | 8 | 54 | [9] | 62 | 15 | 169 | 184 |
| Total | 38 | 21 | [14] | 59 | 319 | 68 | [1] | 387 | 24 | 181 | [16] | 205 | 31 | 651 | 682 |
| 17:00 | 10 | 5 | [4] | 15 | 86 | 18 | [1] | 104 | 6 | 53 | [3] | 59 | 8 | 178 | 186 |
| 17:15 | 6 | 8 | [5] | 14 | 89 | 24 | [1] | 113 | 3 | 47 | [6] | 50 | 12 | 177 | 189 |
| 17:30 | 10 | 4 | [7] | 14 | 72 | 16 | [0] | 88 | 7 | 39 | [1] | 46 | 8 | 148 | 156 |
| 17:45 | 7 | 6 | [3] | 13 | 41 | 18 | [0] | 59 | 6 | 42 | [1] | 48 | 4 | 120 | 124 |
| Total | 33 | 23 | [19] | 56 | 288 | 76 | [2] | 364 | 22 | 181 | [11] | 203 | 32 | 623 | 655 |
| Grand Total | 71 | 44 | [33] | 115 | 607 | 144 | [3] | 751 | 46 | 362 | [27] | 408 | 63 | 1274 | 1337 |
| Apprch % | 61.7 | 38.3 | | | 80.8 | 19.2 | | | 11.3 | 88.7 | | | | | |
| Total % | 5.6 | 3.5 | | 9 | 47.6 | 11.3 | | 58.9 | 3.6 | 28.4 | | 32 | 4.7 | 95.3 | |
| Cars/lights | 70 | 42 | | 144 | 596 | 144 | | 742 | 46 | 355 | | 425 | 0 | 0 | 1311 |
| % Cars/lights | 98.6 | 95.5 | 97 | 97.3 | 98.2 | 100 | 66.7 | 98.4 | 100 | 98.1 | 88.9 | 97.7 | 0 | 0 | 98.1 |
| Trucks | 0 | 1 | | 2 | 2 | 0 | | 3 | 0 | 2 | | 5 | 0 | 0 | 10 |
| % Trucks | 0 | 2.3 | 3 | 1.4 | 0.3 | 0 | 33.3 | 0.4 | 0 | 0.6 | 11.1 | 1.1 | 0 | 0 | 0.7 |
| Buses | 1 | 1 | | 2 | 9 | 0 | | 9 | 0 | 5 | | 5 | 0 | 0 | 16 |
| % Buses | 1.4 | 2.3 | 0 | 1.4 | 1.5 | 0 | 0 | 1.2 | 0 | 1.4 | 0 | 1.1 | 0 | 0 | 1.2 |

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File Name : Woodcrest Blvd & Viscount Rd - PM
 Site Code : 00023181
 Start Date : 2022-09-20
 Page No : 2

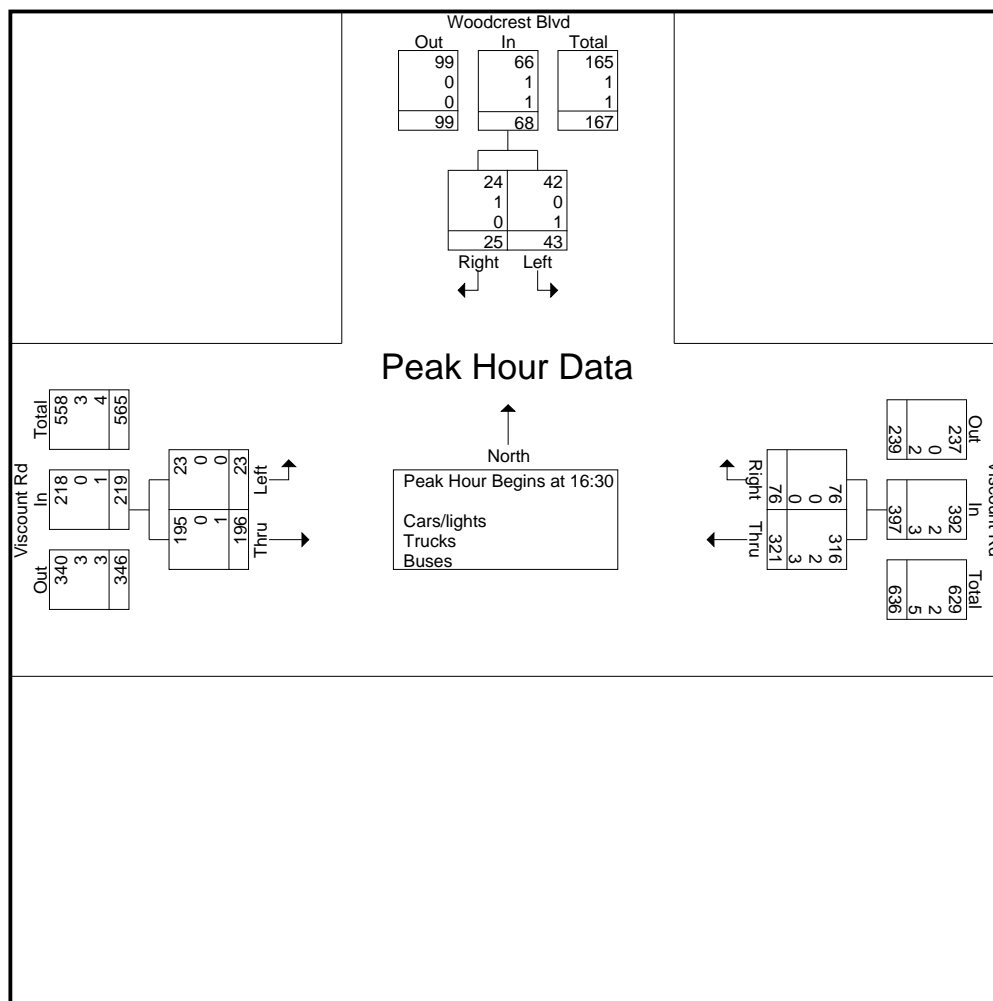


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File Name : Woodcrest Blvd & Viscount Rd - PM
Site Code : 00023181
Start Date : 2022-09-20
Page No : 3

| Start Time | Woodcrest Blvd Southbound | | | Viscount Rd Westbound | | | Viscount Rd Eastbound | | | Int. Total |
|------------------------------------------------------|---------------------------|----------|------------|-----------------------|-----------|------------|-----------------------|-----------|------------|------------|
| | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:30 | | | | | | | | | | |
| 16:30 | 13 | 6 | 19 | 76 | 17 | 93 | 6 | 42 | 48 | 160 |
| 16:45 | 14 | 6 | 20 | 70 | 17 | 87 | 8 | 54 | 62 | 169 |
| 17:00 | 10 | 5 | 15 | 86 | 18 | 104 | 6 | 53 | 59 | 178 |
| 17:15 | 6 | 8 | 14 | 89 | 24 | 113 | 3 | 47 | 50 | 177 |
| Total Volume | 43 | 25 | 68 | 321 | 76 | 397 | 23 | 196 | 219 | 684 |
| % App. Total | 63.2 | 36.8 | | 80.9 | 19.1 | | 10.5 | 89.5 | | |
| PHF | .768 | .781 | .850 | .902 | .792 | .878 | .719 | .907 | .883 | .961 |
| Cars/lights | 42 | 24 | 66 | 316 | 76 | 392 | 23 | 195 | 218 | 676 |
| % Cars/lights | 97.7 | 96.0 | 97.1 | 98.4 | 100 | 98.7 | 100 | 99.5 | 99.5 | 98.8 |
| Trucks | 0 | 1 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 3 |
| % Trucks | 0 | 4.0 | 1.5 | 0.6 | 0 | 0.5 | 0 | 0 | 0 | 0.4 |
| Buses | 1 | 0 | 1 | 3 | 0 | 3 | 0 | 1 | 1 | 5 |
| % Buses | 2.3 | 0 | 1.5 | 0.9 | 0 | 0.8 | 0 | 0.5 | 0.5 | 0.7 |



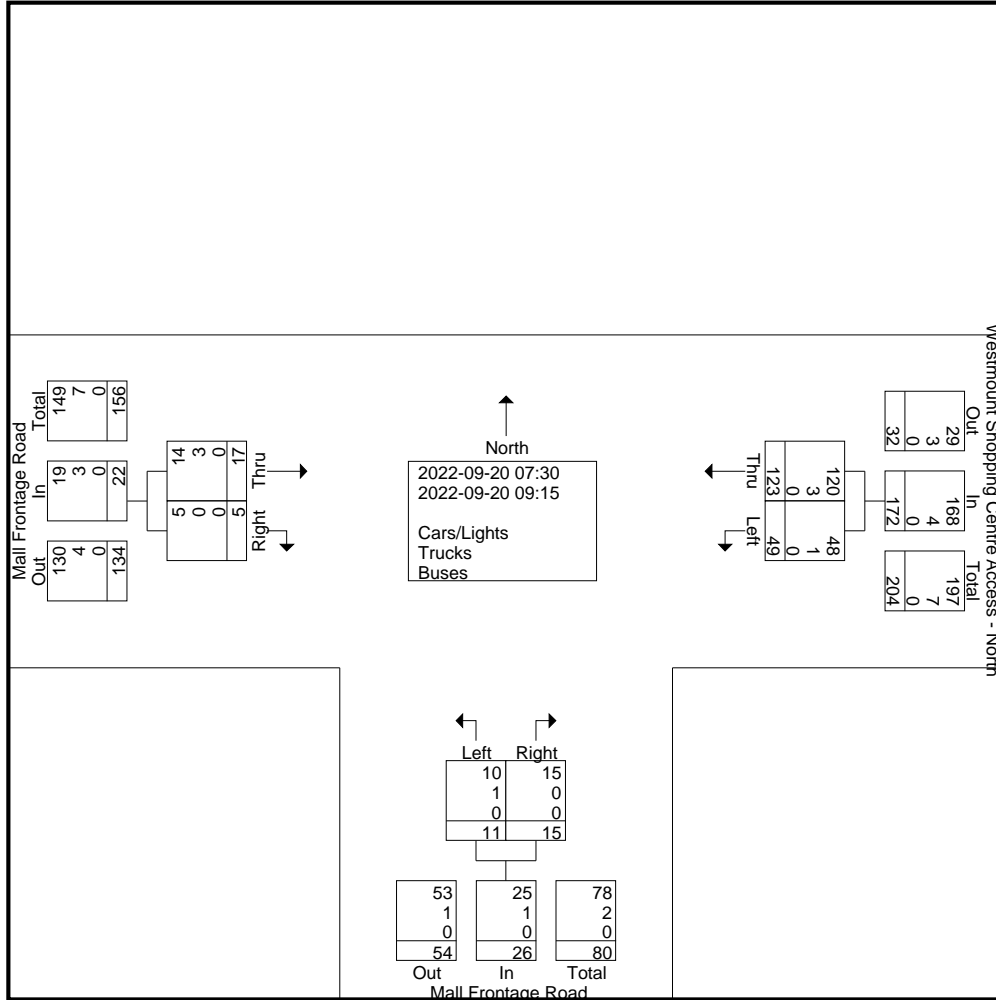
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 Markham, ON L3R 9R9

File Name : Mall Frontage Rd & Westmount Shopping Centre Access (North)-AM
 Site Code : 23181000
 Start Date : 2022-09-20
 Page No : 2

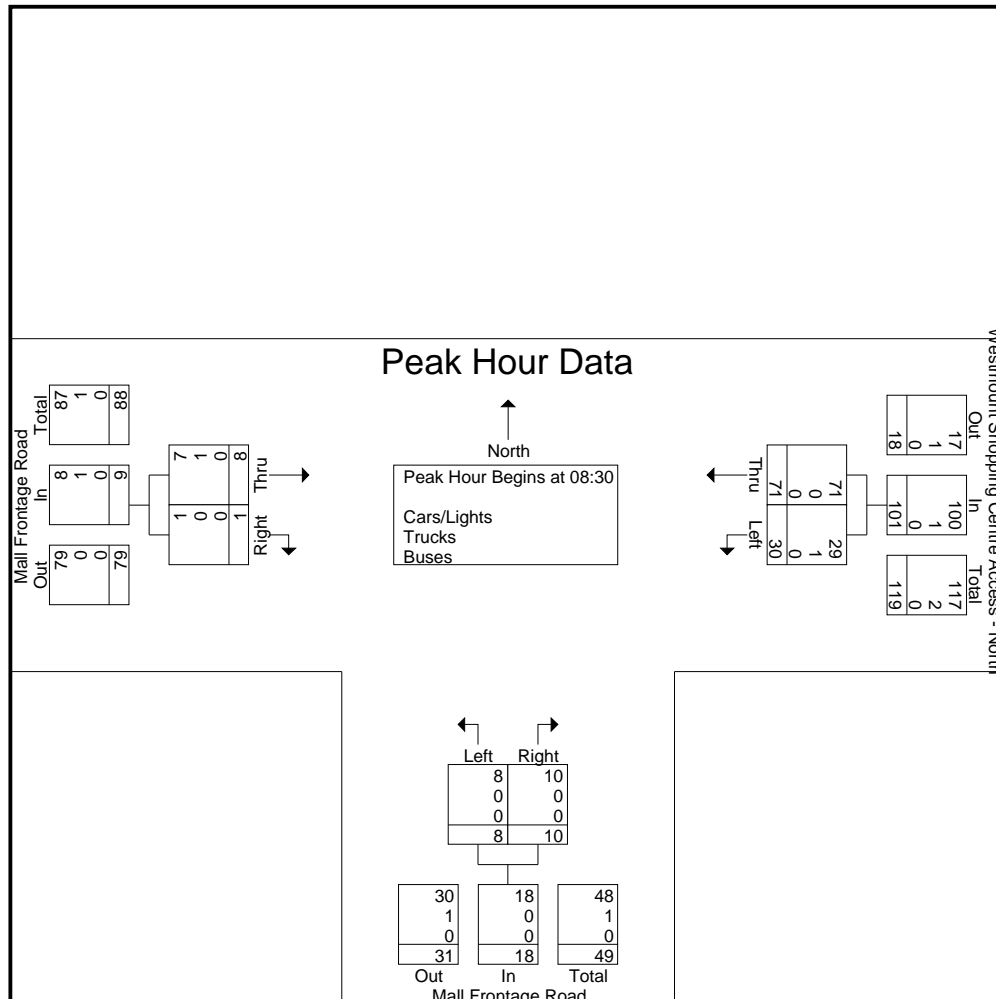


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Markham, ON L3R 9R9

File Name : Mall Frontage Rd & Westmount Shopping Centre Access (North)-AM
Site Code : 23181000
Start Date : 2022-09-20
Page No : 3

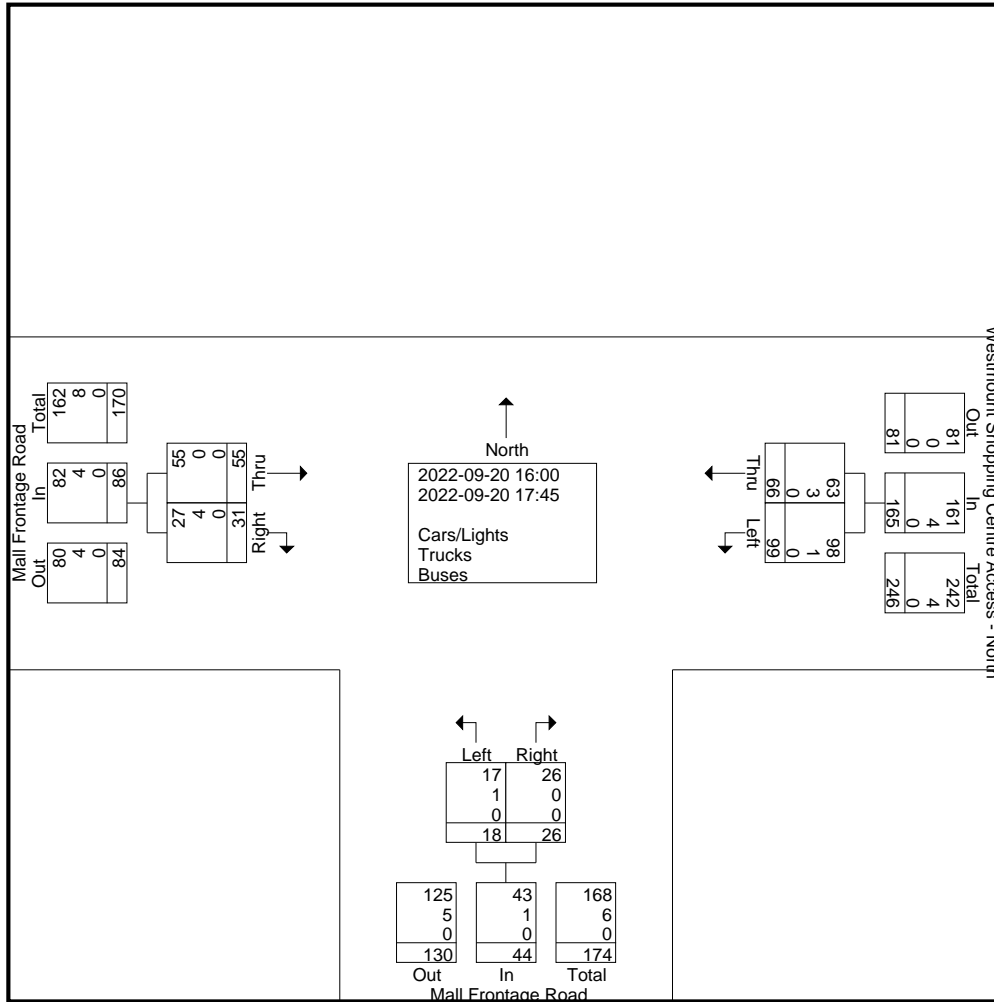
| Start Time | Westmount Shopping Centre Access - North Westbound | | | Mall Frontage Road Northbound | | | Mall Frontage Road Eastbound | | | Int. Total |
|------------------------------------------------------|----------------------------------------------------|------|------------|-------------------------------|-------|------------|------------------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:30 to 09:15 - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 08:30 | | | | | | | | | | |
| 08:30 | 6 | 18 | 24 | 2 | 0 | 2 | 1 | 1 | 2 | 28 |
| 08:45 | 10 | 27 | 37 | 2 | 1 | 3 | 1 | 0 | 1 | 41 |
| 09:00 | 4 | 14 | 18 | 3 | 3 | 6 | 2 | 0 | 2 | 26 |
| 09:15 | 10 | 12 | 22 | 1 | 6 | 7 | 4 | 0 | 4 | 33 |
| Total Volume | 30 | 71 | 101 | 8 | 10 | 18 | 8 | 1 | 9 | 128 |
| % App. Total | 29.7 | 70.3 | | 44.4 | 55.6 | | 88.9 | 11.1 | | |
| PHF | .750 | .657 | .682 | .667 | .417 | .643 | .500 | .250 | .563 | .780 |
| Cars/Lights | 29 | 71 | 100 | 8 | 10 | 18 | 7 | 1 | 8 | 126 |
| % Cars/Lights | 96.7 | 100 | 99.0 | 100 | 100 | 100 | 87.5 | 100 | 88.9 | 98.4 |
| Trucks | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| % Trucks | 3.3 | 0 | 1.0 | 0 | 0 | 0 | 12.5 | 0 | 11.1 | 1.6 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



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File Name : Mall Frontage Rd & Westmount Shopping Centre Access (North)-PM
 Site Code : 23181000
 Start Date : 2022-09-20
 Page No : 2

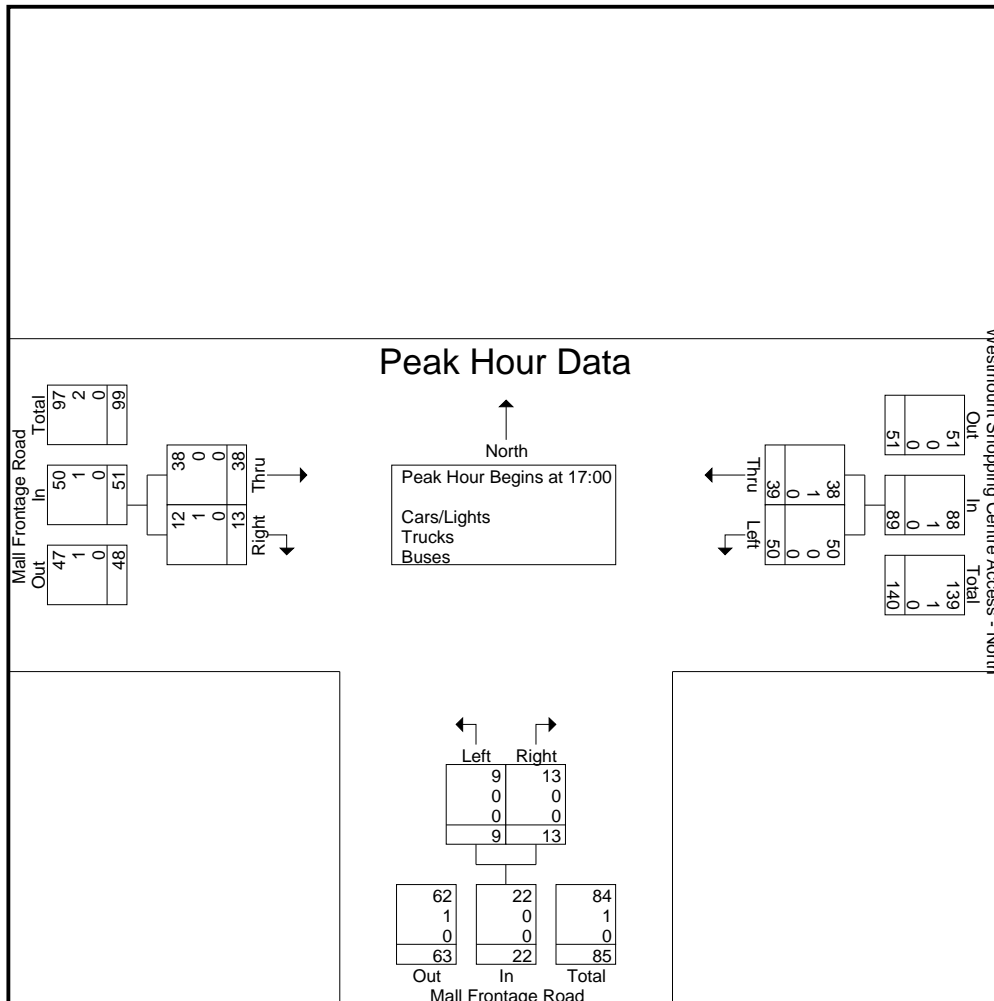


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Markham, ON L3R 9R9

File Name : Mall Frontage Rd & Westmount Shopping Centre Access (North)-PM
Site Code : 23181000
Start Date : 2022-09-20
Page No : 3

| Start Time | Westmount Shopping Centre Access - North Westbound | | | Mall Frontage Road Northbound | | | Mall Frontage Road Eastbound | | | Int. Total |
|------------------------------------------------------|----------------------------------------------------|------|------------|-------------------------------|-------|------------|------------------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 17:00 | | | | | | | | | | |
| 17:00 | 12 | 9 | 21 | 2 | 7 | 9 | 16 | 6 | 22 | 52 |
| 17:15 | 11 | 8 | 19 | 1 | 2 | 3 | 11 | 3 | 14 | 36 |
| 17:30 | 10 | 10 | 20 | 3 | 1 | 4 | 2 | 2 | 4 | 28 |
| 17:45 | 17 | 12 | 29 | 3 | 3 | 6 | 9 | 2 | 11 | 46 |
| Total Volume | 50 | 39 | 89 | 9 | 13 | 22 | 38 | 13 | 51 | 162 |
| % App. Total | 56.2 | 43.8 | | 40.9 | 59.1 | | 74.5 | 25.5 | | |
| PHF | .735 | .813 | .767 | .750 | .464 | .611 | .594 | .542 | .580 | .779 |
| Cars/Lights | 50 | 38 | 88 | 9 | 13 | 22 | 38 | 12 | 50 | 160 |
| % Cars/Lights | 100 | 97.4 | 98.9 | 100 | 100 | 100 | 100 | 92.3 | 98.0 | 98.8 |
| Trucks | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| % Trucks | 0 | 2.6 | 1.1 | 0 | 0 | 0 | 0 | 7.7 | 2.0 | 1.2 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



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Project No.: 23181 File Name : Mall Frontage Rd & Westmount Shopping Centre Access (South)-AM
 Intersection: Mall Frontage Rd & Westmount Shopping Centre Access 23181016
 Weather: Clear Start Date : 2022-09-20
 Surveyor(s): ML Page No : 1

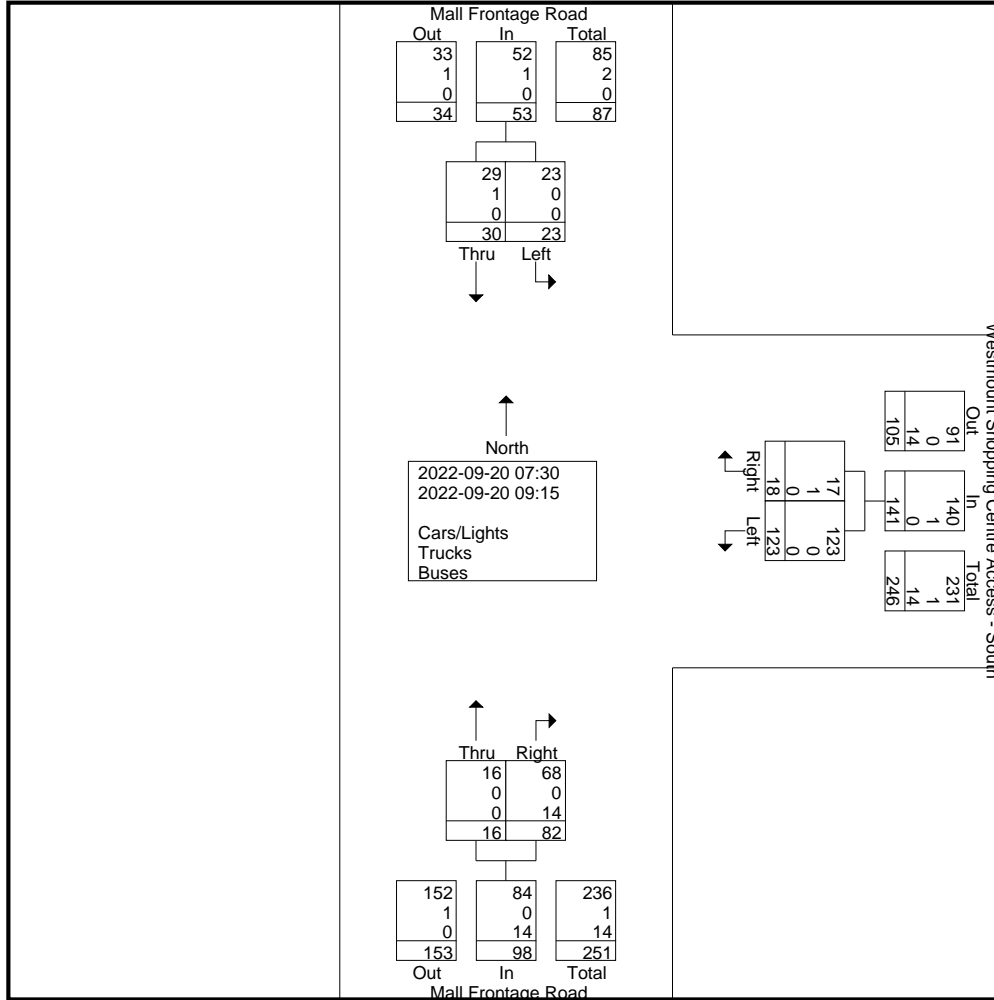
Groups Printed- Cars/Lights - Trucks - Buses

| Start Time | Mall Frontage Road Southbound | | | | Westmount Shopping Centre Access - South Westbound | | | | Mall Frontage Road Northbound | | | | Exclu. Total | Inclu. Total | Int. Total |
|---------------|-------------------------------|------|------|------------|----------------------------------------------------|-------|------|------------|-------------------------------|-------|------|------------|--------------|--------------|------------|
| | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | | | |
| 07:30 | 1 | 0 | [2] | 1 | 3 | 0 | [0] | 3 | 1 | 3 | [0] | 4 | 2 | 8 | 10 |
| 07:45 | 0 | 6 | [1] | 6 | 26 | 1 | [0] | 27 | 1 | 19 | [2] | 20 | 3 | 53 | 56 |
| Total | 1 | 6 | [3] | 7 | 29 | 1 | [0] | 30 | 2 | 22 | [2] | 24 | 5 | 61 | 66 |
| 08:00 | 1 | 13 | [1] | 14 | 34 | 1 | [1] | 35 | 1 | 26 | [0] | 27 | 2 | 76 | 78 |
| 08:15 | 2 | 3 | [0] | 5 | 13 | 1 | [1] | 14 | 0 | 5 | [0] | 5 | 1 | 24 | 25 |
| 08:30 | 4 | 3 | [0] | 7 | 8 | 1 | [0] | 9 | 1 | 4 | [0] | 5 | 0 | 21 | 21 |
| 08:45 | 4 | 3 | [6] | 7 | 12 | 5 | [0] | 17 | 3 | 8 | [5] | 11 | 11 | 35 | 46 |
| Total | 11 | 22 | [7] | 33 | 67 | 8 | [2] | 75 | 5 | 43 | [5] | 48 | 14 | 156 | 170 |
| 09:00 | 3 | 0 | [10] | 3 | 6 | 5 | [0] | 11 | 6 | 4 | [0] | 10 | 10 | 24 | 34 |
| 09:15 | 8 | 2 | [32] | 10 | 21 | 4 | [0] | 25 | 3 | 13 | [0] | 16 | 32 | 51 | 83 |
| Grand Total | 23 | 30 | [52] | 53 | 123 | 18 | [2] | 141 | 16 | 82 | [7] | 98 | 61 | 292 | 353 |
| Apprch % | 43.4 | 56.6 | | | 87.2 | 12.8 | | | 16.3 | 83.7 | | | | | |
| Total % | 7.9 | 10.3 | | 18.2 | 42.1 | 6.2 | | 48.3 | 5.5 | 28.1 | | 33.6 | 17.3 | 82.7 | |
| Cars/Lights | 23 | 29 | | 103 | 123 | 17 | | 142 | 16 | 68 | | 90 | 0 | 0 | 335 |
| % Cars/Lights | 100 | 96.7 | 98.1 | 98.1 | 100 | 94.4 | 100 | 99.3 | 100 | 82.9 | 85.7 | 85.7 | 0 | 0 | 94.9 |
| Trucks | 0 | 1 | | 2 | 0 | 1 | | 1 | 0 | 0 | | 1 | 0 | 0 | 4 |
| % Trucks | 0 | 3.3 | 1.9 | 1.9 | 0 | 5.6 | 0 | 0.7 | 0 | 0 | 14.3 | 1 | 0 | 0 | 1.1 |
| Buses | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 14 | | 14 | 0 | 0 | 14 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17.1 | 0 | 13.3 | 0 | 0 | 4 |

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File Name : Mall Frontage Rd & Westmount Shopping Centre Access (South)-AM
 Site Code : 23181016
 Start Date : 2022-09-20
 Page No : 2

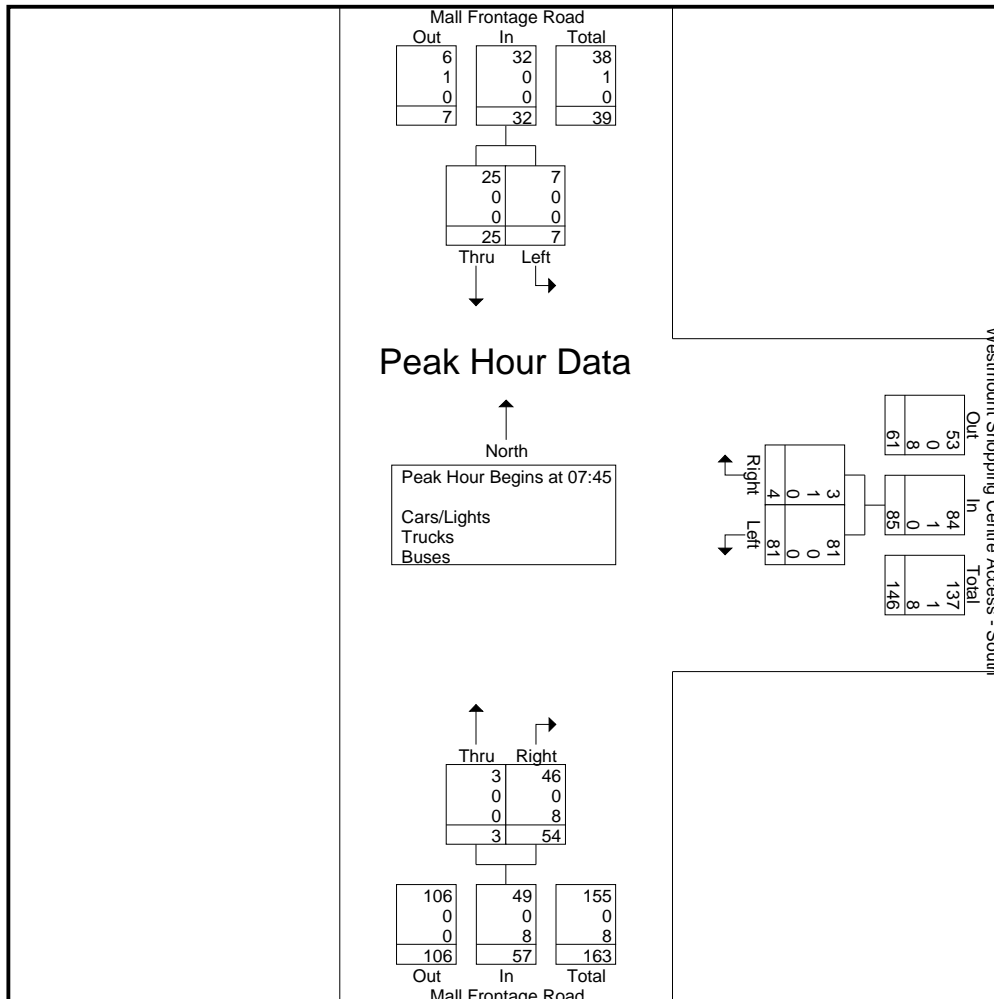


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File Name : Mall Frontage Rd & Westmount Shopping Centre Access (South)-AM
Site Code : 23181016
Start Date : 2022-09-20
Page No : 3

| Start Time | Mall Frontage Road Southbound | | | Westmount Shopping Centre Access - South Westbound | | | Mall Frontage Road Northbound | | | Int. Total |
|------------------------------------------------------|-------------------------------|------|------------|----------------------------------------------------|-------|------------|-------------------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:30 to 09:15 - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 | | | | | | | | | | |
| 07:45 | 0 | 6 | 6 | 26 | 1 | 27 | 1 | 19 | 20 | 53 |
| 08:00 | 1 | 13 | 14 | 34 | 1 | 35 | 1 | 26 | 27 | 76 |
| 08:15 | 2 | 3 | 5 | 13 | 1 | 14 | 0 | 5 | 5 | 24 |
| 08:30 | 4 | 3 | 7 | 8 | 1 | 9 | 1 | 4 | 5 | 21 |
| Total Volume | 7 | 25 | 32 | 81 | 4 | 85 | 3 | 54 | 57 | 174 |
| % App. Total | 21.9 | 78.1 | | 95.3 | 4.7 | | 5.3 | 94.7 | | |
| PHF | .438 | .481 | .571 | .596 | 1.00 | .607 | .750 | .519 | .528 | .572 |
| Cars/Lights | 7 | 25 | 32 | 81 | 3 | 84 | 3 | 46 | 49 | 165 |
| % Cars/Lights | 100 | 100 | 100 | 100 | 75.0 | 98.8 | 100 | 85.2 | 86.0 | 94.8 |
| Trucks | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| % Trucks | 0 | 0 | 0 | 0 | 25.0 | 1.2 | 0 | 0 | 0 | 0.6 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 8 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14.8 | 14.0 | 4.6 |



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Project No.: 23181 File Name : Mall Frontage Rd & Westmount Shopping Centre Access (South)-PM
 Intersection: Mall Frontage Rd & Westmount Shopping Centre Access 23181016
 Weather: Clear Start Date : 2022-09-20
 Surveyor(s): ML Page No : 1

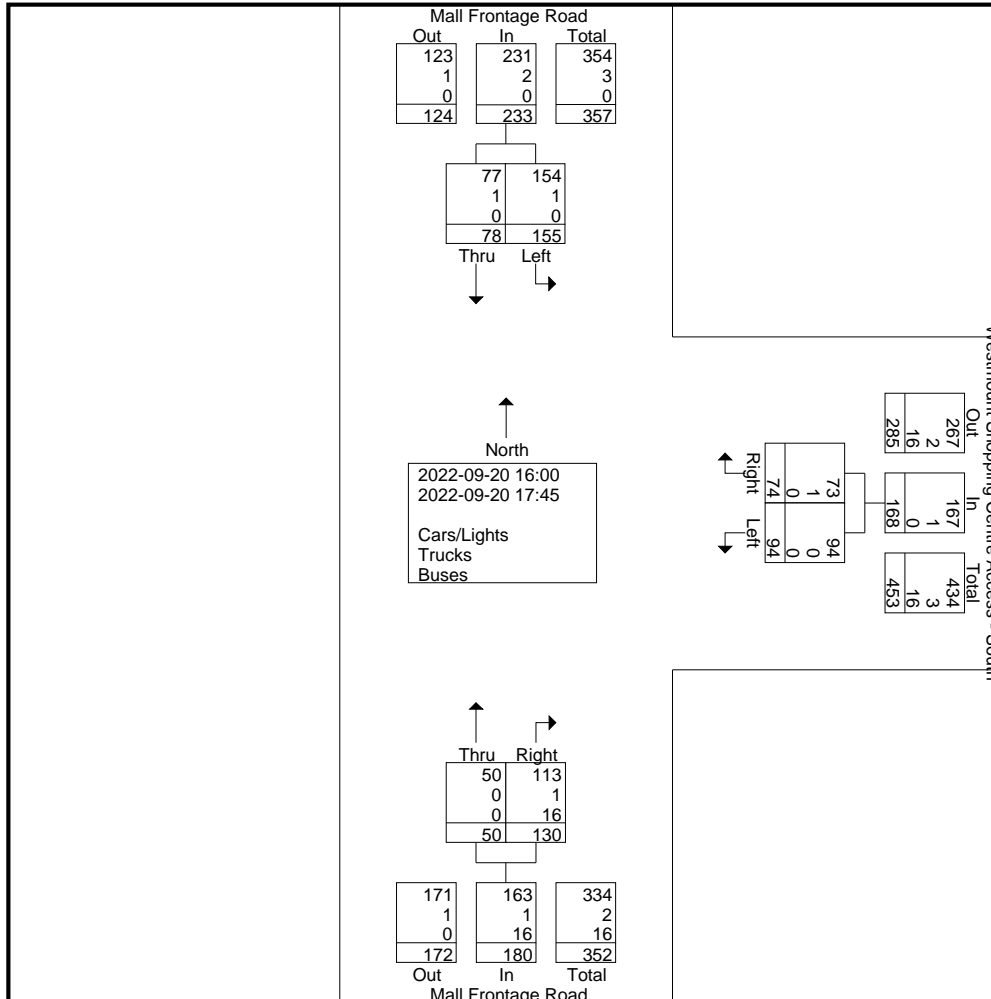
Groups Printed- Cars/Lights - Trucks - Buses

| Start Time | Mall Frontage Road Southbound | | | | Westmount Shopping Centre Access - South Westbound | | | | Mall Frontage Road Northbound | | | | Exclu. Total | Inclu. Total | Int. Total |
|---------------|-------------------------------|------|------|------------|----------------------------------------------------|-------|------|------------|-------------------------------|-------|-------|------------|--------------|--------------|------------|
| | Left | Thru | Peds | App. Total | Left | Right | Peds | App. Total | Thru | Right | Peds | App. Total | | | |
| 16:00 | 22 | 11 | [6] | 33 | 16 | 13 | [2] | 29 | 7 | 29 | [7] | 36 | 15 | 98 | 113 |
| 16:15 | 16 | 9 | [8] | 25 | 11 | 6 | [0] | 17 | 6 | 18 | [12] | 24 | 20 | 66 | 86 |
| 16:30 | 20 | 11 | [11] | 31 | 10 | 6 | [0] | 16 | 7 | 13 | [18] | 20 | 29 | 67 | 96 |
| 16:45 | 16 | 9 | [11] | 25 | 11 | 5 | [1] | 16 | 7 | 19 | [11] | 26 | 23 | 67 | 90 |
| Total | 74 | 40 | [36] | 114 | 48 | 30 | [3] | 78 | 27 | 79 | [48] | 106 | 87 | 298 | 385 |
| 17:00 | 19 | 12 | [9] | 31 | 8 | 7 | [2] | 15 | 5 | 14 | [19] | 19 | 30 | 65 | 95 |
| 17:15 | 18 | 7 | [8] | 25 | 14 | 8 | [1] | 22 | 6 | 12 | [15] | 18 | 24 | 65 | 89 |
| 17:30 | 21 | 9 | [4] | 30 | 14 | 12 | [1] | 26 | 7 | 13 | [21] | 20 | 26 | 76 | 102 |
| 17:45 | 23 | 10 | [15] | 33 | 10 | 17 | [0] | 27 | 5 | 12 | [20] | 17 | 35 | 77 | 112 |
| Total | 81 | 38 | [36] | 119 | 46 | 44 | [4] | 90 | 23 | 51 | [75] | 74 | 115 | 283 | 398 |
| Grand Total | 155 | 78 | [72] | 233 | 94 | 74 | [7] | 168 | 50 | 130 | [123] | 180 | 202 | 581 | 783 |
| Apprch % | 66.5 | 33.5 | | | 56 | 44 | | | 27.8 | 72.2 | | | | | |
| Total % | 26.7 | 13.4 | | 40.1 | 16.2 | 12.7 | | 28.9 | 8.6 | 22.4 | | 31 | 25.8 | 74.2 | |
| Cars/Lights | 154 | 77 | | 296 | 94 | 73 | | 174 | 50 | 113 | | 284 | 0 | 0 | 754 |
| % Cars/Lights | 99.4 | 98.7 | 90.3 | 97 | 100 | 98.6 | 100 | 99.4 | 100 | 86.9 | 98.4 | 93.7 | 0 | 0 | 96.3 |
| Trucks | 1 | 1 | | 9 | 0 | 1 | | 1 | 0 | 1 | | 3 | 0 | 0 | 13 |
| % Trucks | 0.6 | 1.3 | 9.7 | 3 | 0 | 1.4 | 0 | 0.6 | 0 | 0.8 | 1.6 | 1 | 0 | 0 | 1.7 |
| Buses | 0 | 0 | | 0 | 0 | 0 | | 0 | 0 | 16 | | 16 | 0 | 0 | 16 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12.3 | 0 | 5.3 | 0 | 0 | 2 |

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File Name : Mall Frontage Rd & Westmount Shopping Centre Access (South)-PM
 Site Code : 23181016
 Start Date : 2022-09-20
 Page No : 2

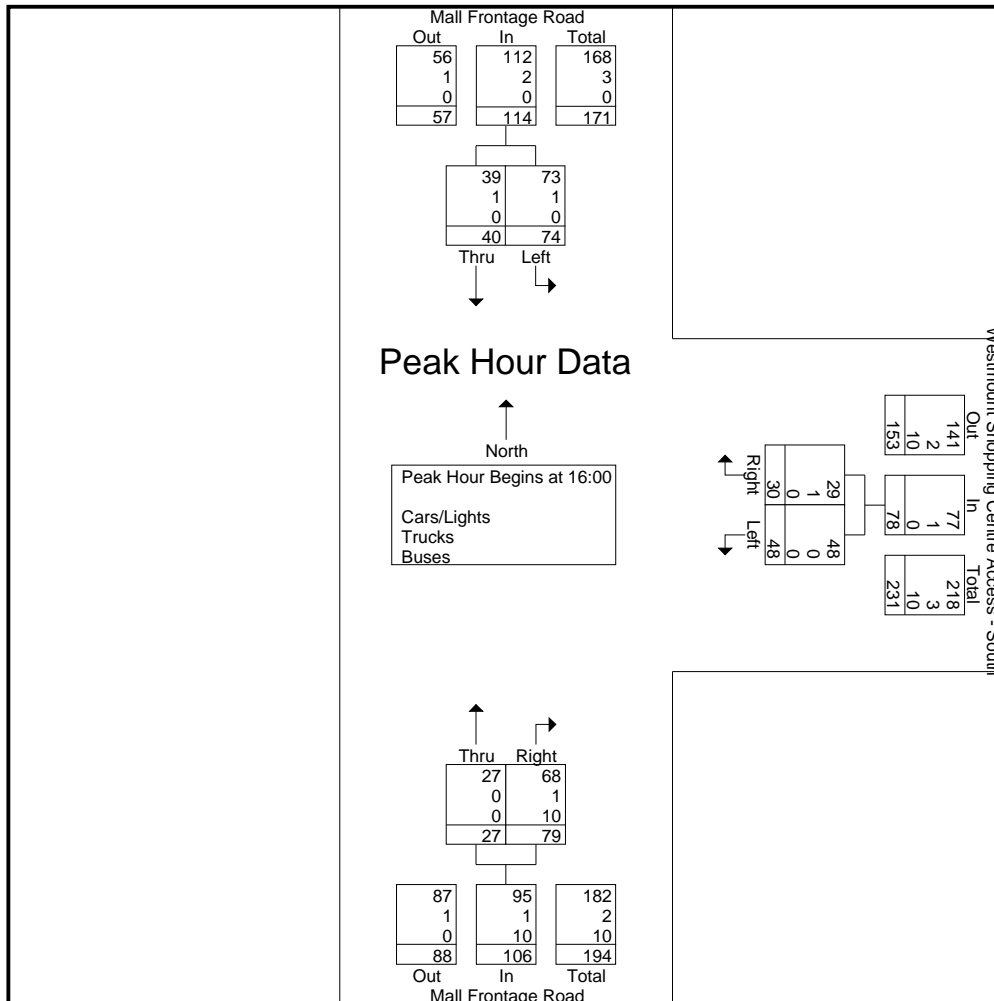


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625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : Mall Frontage Rd & Westmount Shopping Centre Access (South)-PM
Site Code : 23181016
Start Date : 2022-09-20
Page No : 3

| Start Time | Mall Frontage Road Southbound | | | Westmount Shopping Centre Access - South Westbound | | | Mall Frontage Road Northbound | | | Int. Total |
|------------------------------------------------------|-------------------------------|------|------------|----------------------------------------------------|-------|------------|-------------------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:00 | | | | | | | | | | |
| 16:00 | 22 | 11 | 33 | 16 | 13 | 29 | 7 | 29 | 36 | 98 |
| 16:15 | 16 | 9 | 25 | 11 | 6 | 17 | 6 | 18 | 24 | 66 |
| 16:30 | 20 | 11 | 31 | 10 | 6 | 16 | 7 | 13 | 20 | 67 |
| 16:45 | 16 | 9 | 25 | 11 | 5 | 16 | 7 | 19 | 26 | 67 |
| Total Volume | 74 | 40 | 114 | 48 | 30 | 78 | 27 | 79 | 106 | 298 |
| % App. Total | 64.9 | 35.1 | | 61.5 | 38.5 | | 25.5 | 74.5 | | |
| PHF | .841 | .909 | .864 | .750 | .577 | .672 | .964 | .681 | .736 | .760 |
| Cars/Lights | 73 | 39 | 112 | 48 | 29 | 77 | 27 | 68 | 95 | 284 |
| % Cars/Lights | 98.6 | 97.5 | 98.2 | 100 | 96.7 | 98.7 | 100 | 86.1 | 89.6 | 95.3 |
| Trucks | 1 | 1 | 2 | 0 | 1 | 1 | 0 | 1 | 1 | 4 |
| % Trucks | 1.4 | 2.5 | 1.8 | 0 | 3.3 | 1.3 | 0 | 1.3 | 0.9 | 1.3 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 10 | 10 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12.7 | 9.4 | 3.4 |



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625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

Project No.: 23181 File Name : Westmount Shopping Centre Access (East) & Mall Frontage Rd-AM
 Intersection: Mall Access Site Code: 23181005
 Weather: Clear Start Date : 2022-09-20
 Surveyor(s): KL Page No : 1

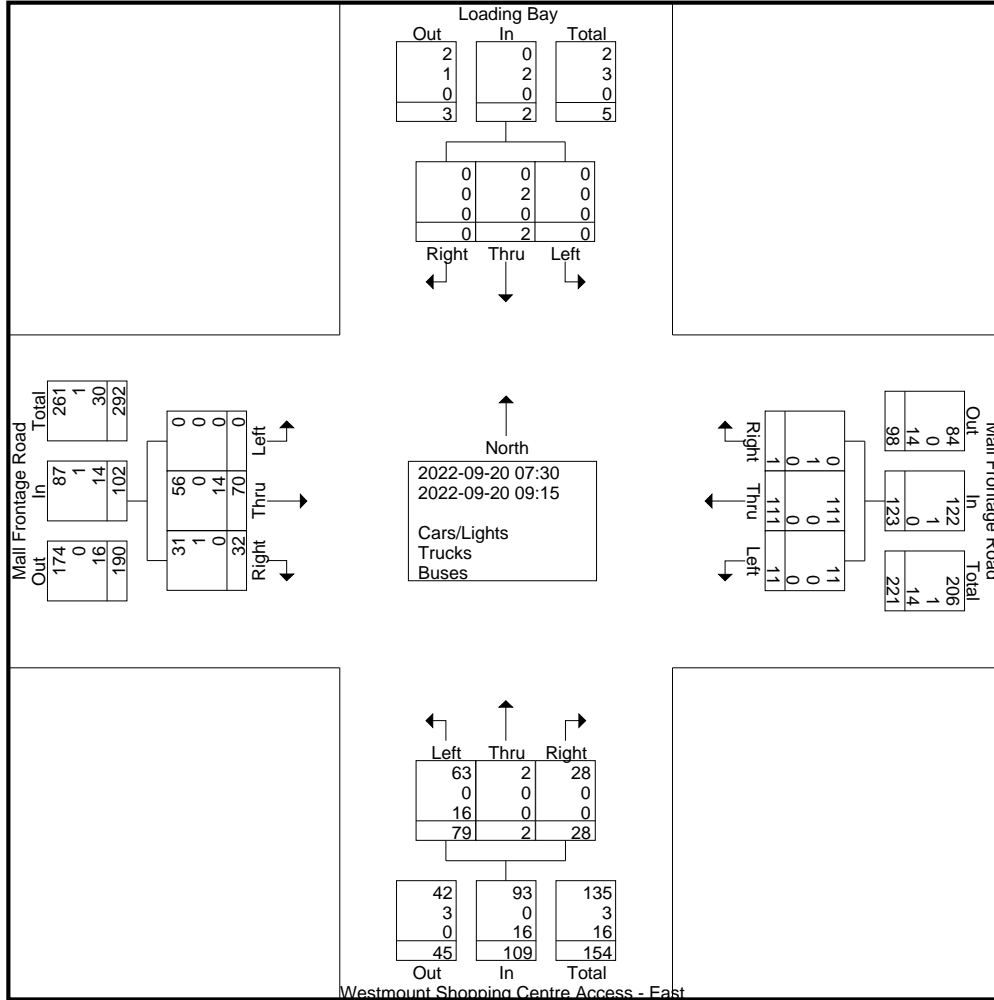
Groups Printed- Cars/Lights - Trucks - Buses

| Start Time | Loading Bay Southbound | | | | | Mall Frontage Road Westbound | | | | | Westmount Shopping Centre Access - East Northbound | | | | | Mall Frontage Road Eastbound | | | | | Exclu. Total | Inclu. Total | Int. Total |
|---------------|------------------------|------|-------|------|------------|------------------------------|------|-------|------|------------|----------------------------------------------------|------|-------|------|------------|------------------------------|------|-------|------|------------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | | | |
| 07:30 | 0 | 1 | 0 | [5] | 1 | 2 | 1 | 0 | [0] | 3 | 4 | 0 | 0 | [0] | 4 | 0 | 4 | 4 | [1] | 8 | 6 | 16 | 22 |
| 07:45 | 0 | 0 | 0 | [6] | 0 | 0 | 18 | 0 | [1] | 18 | 11 | 0 | 5 | [1] | 16 | 0 | 12 | 4 | [0] | 16 | 8 | 50 | 58 |
| Total | 0 | 1 | 0 | [11] | 1 | 2 | 19 | 0 | [1] | 21 | 15 | 0 | 5 | [1] | 20 | 0 | 16 | 8 | [1] | 24 | 14 | 66 | 80 |
| 08:00 | 0 | 0 | 0 | [11] | 0 | 3 | 36 | 0 | [0] | 39 | 18 | 1 | 9 | [1] | 28 | 0 | 19 | 5 | [2] | 24 | 14 | 91 | 105 |
| 08:15 | 0 | 0 | 0 | [2] | 0 | 1 | 16 | 0 | [0] | 17 | 6 | 0 | 1 | [2] | 7 | 0 | 4 | 4 | [4] | 8 | 8 | 32 | 40 |
| 08:30 | 0 | 0 | 0 | [2] | 0 | 1 | 9 | 0 | [7] | 10 | 6 | 0 | 1 | [7] | 7 | 0 | 4 | 2 | [2] | 6 | 18 | 23 | 41 |
| 08:45 | 0 | 1 | 0 | [10] | 1 | 1 | 11 | 1 | [0] | 13 | 10 | 1 | 4 | [1] | 15 | 0 | 6 | 7 | [1] | 13 | 12 | 42 | 54 |
| Total | 0 | 1 | 0 | [25] | 1 | 6 | 72 | 1 | [7] | 79 | 40 | 2 | 15 | [11] | 57 | 0 | 33 | 18 | [9] | 51 | 52 | 188 | 240 |
| 09:00 | 0 | 0 | 0 | [5] | 0 | 1 | 8 | 0 | [2] | 9 | 14 | 0 | 4 | [1] | 18 | 0 | 8 | 2 | [0] | 10 | 8 | 37 | 45 |
| 09:15 | 0 | 0 | 0 | [7] | 0 | 2 | 12 | 0 | [3] | 14 | 10 | 0 | 4 | [1] | 14 | 0 | 13 | 4 | [0] | 17 | 11 | 45 | 56 |
| Grand Total | 0 | 2 | 0 | [48] | 2 | 11 | 111 | 1 | [13] | 123 | 79 | 2 | 28 | [14] | 109 | 0 | 70 | 32 | [10] | 102 | 85 | 336 | 421 |
| Apprch % | 0 | 100 | 0 | | | 8.9 | 90.2 | 0.8 | | | 72.5 | 1.8 | 25.7 | | | 0 | 68.6 | 31.4 | | | | | |
| Total % | 0 | 0.6 | 0 | | 0.6 | 3.3 | 33 | 0.3 | | 36.6 | 23.5 | 0.6 | 8.3 | | 32.4 | 0 | 20.8 | 9.5 | | 30.4 | 20.2 | 79.8 | |
| Cars/Lights | 0 | 0 | 0 | | 48 | 11 | 111 | 0 | | 135 | 63 | 2 | 28 | | 107 | 0 | 56 | 31 | | 97 | 0 | 0 | 387 |
| % Cars/Lights | 0 | 0 | 0 | 100 | 96 | 100 | 100 | 0 | 100 | 99.3 | 79.7 | 100 | 100 | 100 | 87 | 0 | 80 | 96.9 | 100 | 86.6 | 0 | 0 | 91.9 |
| Trucks | 0 | 2 | 0 | | 2 | 0 | 0 | 1 | | 1 | 0 | 0 | 0 | | 0 | 0 | 0 | 1 | | 1 | 0 | 0 | 4 |
| % Trucks | 0 | 100 | 0 | 0 | 4 | 0 | 0 | 100 | 0 | 0.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3.1 | 0 | 0.9 | 0 | 0 | 1 |
| Buses | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 16 | 0 | 0 | | 16 | 0 | 14 | 0 | | 14 | 0 | 0 | 30 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20.3 | 0 | 0 | 0 | 13 | 0 | 20 | 0 | 0 | 12.5 | 0 | 0 | 7.1 |

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625 Cochrane Drive, 9th Floor
 Markham, ON L3R 9R9

File Name : Westmount Shopping Centre Access (East) & Mall Frontage Rd-AM
 Site Code : 23181005
 Start Date : 2022-09-20
 Page No : 2

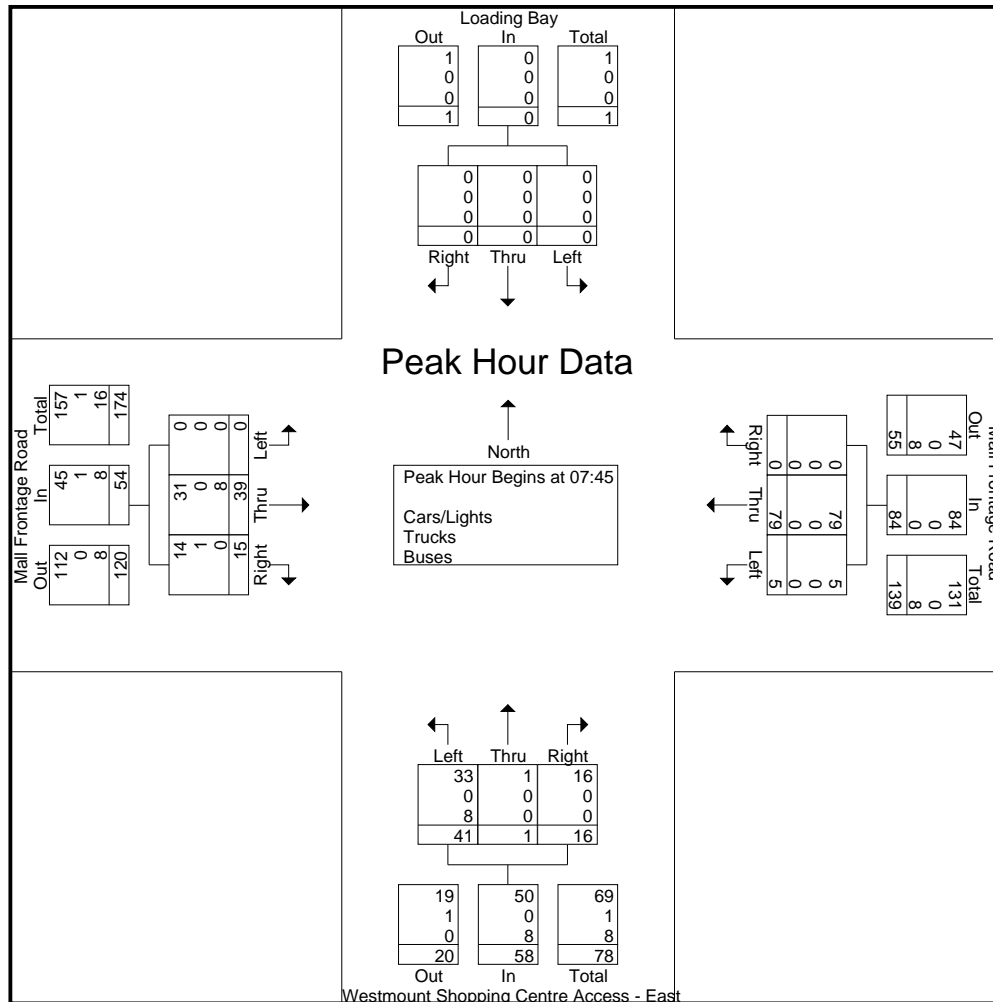


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625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : Westmount Shopping Centre Access (East) & Mall Frontage Rd-AM
Site Code : 23181005
Start Date : 2022-09-20
Page No : 3

| Start Time | Loading Bay Southbound | | | | Mall Frontage Road Westbound | | | | Westmount Shopping Centre Access - East Northbound | | | | Mall Frontage Road Eastbound | | | | Int. Total |
|------------------------------------------------------|------------------------|------|-------|------------|------------------------------|------|-------|------------|----------------------------------------------------|------|-------|------------|------------------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:30 to 09:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 | | | | | | | | | | | | | | | | | |
| 07:45 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 18 | 11 | 0 | 5 | 16 | 0 | 12 | 4 | 16 | 50 |
| 08:00 | 0 | 0 | 0 | 0 | 3 | 36 | 0 | 39 | 18 | 1 | 9 | 28 | 0 | 19 | 5 | 24 | 91 |
| 08:15 | 0 | 0 | 0 | 0 | 1 | 16 | 0 | 17 | 6 | 0 | 1 | 7 | 0 | 4 | 4 | 8 | 32 |
| 08:30 | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 10 | 6 | 0 | 1 | 7 | 0 | 4 | 2 | 6 | 23 |
| Total Volume | 0 | 0 | 0 | 0 | 5 | 79 | 0 | 84 | 41 | 1 | 16 | 58 | 0 | 39 | 15 | 54 | 196 |
| % App. Total | 0 | 0 | 0 | 0 | 6 | 94 | 0 | | 70.7 | 1.7 | 27.6 | | 0 | 72.2 | 27.8 | | |
| PHF | .000 | .000 | .000 | .000 | .417 | .549 | .000 | .538 | .569 | .250 | .444 | .518 | .000 | .513 | .750 | .563 | .538 |
| Cars/Lights | 0 | 0 | 0 | 0 | 5 | 79 | 0 | 84 | 33 | 1 | 16 | 50 | 0 | 31 | 14 | 45 | 179 |
| % Cars/Lights | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 100 | 80.5 | 100 | 100 | 86.2 | 0 | 79.5 | 93.3 | 83.3 | 91.3 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6.7 | 1.9 | 0.5 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 | 8 | 0 | 8 | 16 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19.5 | 0 | 0 | 13.8 | 0 | 20.5 | 0 | 14.8 | 8.2 |



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Markham, ON L3R 9R9

Project No.: 23181 File Name : Westmount Shopping Centre Access (East) & Mall Frontage Rd-PM
 Intersection: Mall Access Site Code: 23181005
 Weather: Clear Start Date : 2022-09-20
 Surveyor(s): KL Page No : 1

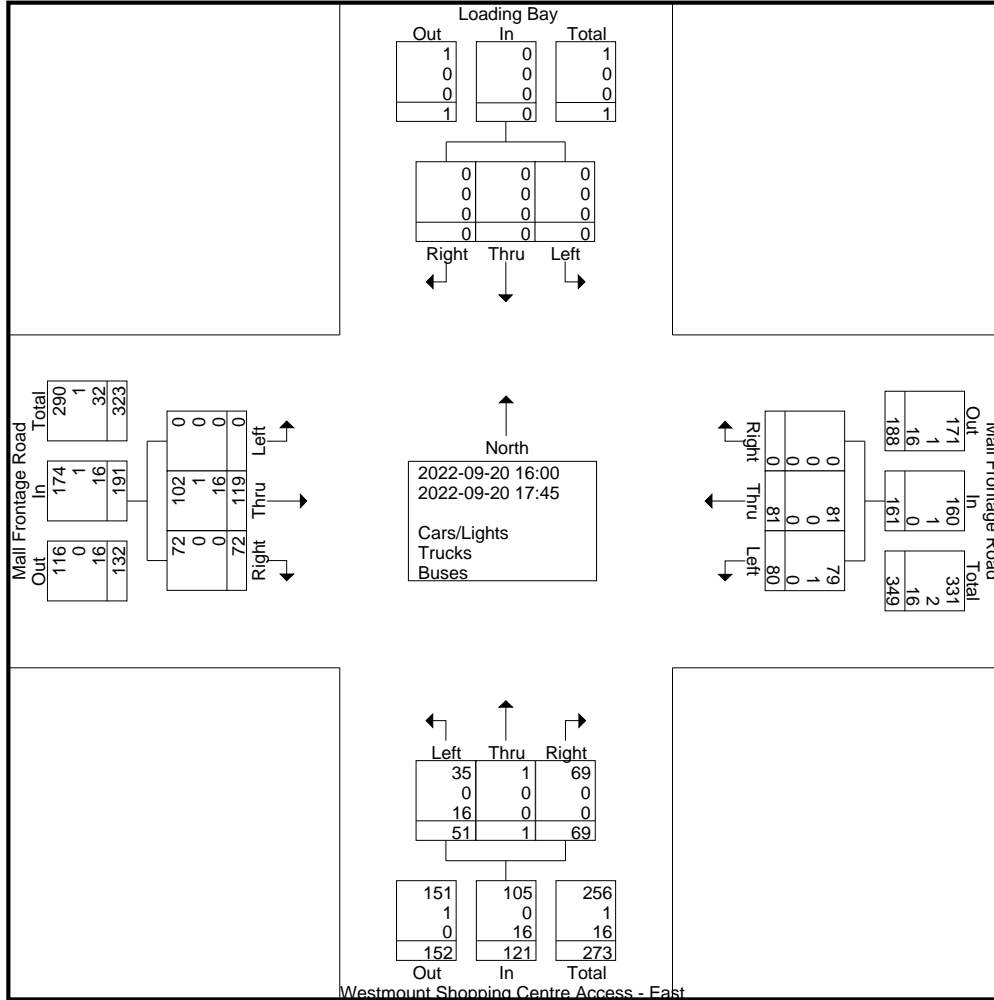
Groups Printed- Cars/Lights - Trucks - Buses

| Start Time | Loading Bay Southbound | | | | | Mall Frontage Road Westbound | | | | | Westmount Shopping Centre Access - East Northbound | | | | | Mall Frontage Road Eastbound | | | | | Exclu. Total | Inclu. Total | Int. Total |
|---------------|------------------------|------|-------|------|------------|------------------------------|------|-------|------|------------|----------------------------------------------------|------|-------|------|------------|------------------------------|------|-------|------|------------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | | | |
| 16:00 | 0 | 0 | 0 | [4] | 0 | 6 | 15 | 0 | [4] | 21 | 2 | 0 | 7 | [0] | 9 | 0 | 25 | 11 | [2] | 36 | 10 | 66 | 76 |
| 16:15 | 0 | 0 | 0 | [4] | 0 | 15 | 13 | 0 | [0] | 28 | 9 | 0 | 7 | [0] | 16 | 0 | 17 | 3 | [2] | 20 | 6 | 64 | 70 |
| 16:30 | 0 | 0 | 0 | [4] | 0 | 9 | 6 | 0 | [2] | 15 | 7 | 0 | 7 | [0] | 14 | 0 | 13 | 14 | [0] | 27 | 6 | 56 | 62 |
| 16:45 | 0 | 0 | 0 | [9] | 0 | 6 | 10 | 0 | [1] | 16 | 6 | 0 | 11 | [0] | 17 | 0 | 18 | 15 | [1] | 33 | 11 | 66 | 77 |
| Total | 0 | 0 | 0 | [21] | 0 | 36 | 44 | 0 | [7] | 80 | 24 | 0 | 32 | [0] | 56 | 0 | 73 | 43 | [5] | 116 | 33 | 252 | 285 |
| 17:00 | 0 | 0 | 0 | [4] | 0 | 12 | 7 | 0 | [4] | 19 | 3 | 0 | 9 | [0] | 12 | 0 | 17 | 9 | [1] | 26 | 9 | 57 | 66 |
| 17:15 | 0 | 0 | 0 | [2] | 0 | 14 | 9 | 0 | [1] | 23 | 6 | 1 | 6 | [3] | 13 | 0 | 10 | 8 | [1] | 18 | 7 | 54 | 61 |
| 17:30 | 0 | 0 | 0 | [2] | 0 | 12 | 12 | 0 | [0] | 24 | 6 | 0 | 18 | [0] | 24 | 0 | 8 | 6 | [0] | 14 | 2 | 62 | 64 |
| 17:45 | 0 | 0 | 0 | [5] | 0 | 6 | 9 | 0 | [1] | 15 | 12 | 0 | 4 | [0] | 16 | 0 | 11 | 6 | [0] | 17 | 6 | 48 | 54 |
| Total | 0 | 0 | 0 | [13] | 0 | 44 | 37 | 0 | [6] | 81 | 27 | 1 | 37 | [3] | 65 | 0 | 46 | 29 | [2] | 75 | 24 | 221 | 245 |
| Grand Total | 0 | 0 | 0 | [34] | 0 | 80 | 81 | 0 | [13] | 161 | 51 | 1 | 69 | [3] | 121 | 0 | 119 | 72 | [7] | 191 | 57 | 473 | 530 |
| Apprch % | 0 | 0 | 0 | | | 49.7 | 50.3 | 0 | | | 42.1 | 0.8 | 57 | | | 0 | 62.3 | 37.7 | | | | | |
| Total % | 0 | 0 | 0 | | | 16.9 | 17.1 | 0 | | 34 | 10.8 | 0.2 | 14.6 | | 25.6 | 0 | 25.2 | 15.2 | | 40.4 | 10.8 | 89.2 | |
| Cars/Lights | 0 | 0 | 0 | | 33 | 79 | 81 | 0 | | 172 | 35 | 1 | 69 | | 108 | 0 | 102 | 72 | | 180 | 0 | 0 | 493 |
| % Cars/Lights | 0 | 0 | 0 | 97.1 | 97.1 | 98.8 | 100 | 0 | 92.3 | 98.9 | 68.6 | 100 | 100 | 100 | 87.1 | 0 | 85.7 | 100 | 85.7 | 90.9 | 0 | 0 | 93 |
| Trucks | 0 | 0 | 0 | | 1 | 1 | 0 | 0 | | 2 | 0 | 0 | 0 | | 0 | 0 | 1 | 0 | | 2 | 0 | 0 | 5 |
| % Trucks | 0 | 0 | 0 | 2.9 | 2.9 | 1.2 | 0 | 0 | 7.7 | 1.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.8 | 0 | 14.3 | 1 | 0 | 0 | 0.9 |
| Buses | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | | 0 | 16 | 0 | 0 | | 16 | 0 | 16 | 0 | | 16 | 0 | 0 | 32 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31.4 | 0 | 0 | 0 | 12.9 | 0 | 13.4 | 0 | 0 | 8.1 | 0 | 0 | 6 |

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File Name : Westmount Shopping Centre Access (East) & Mall Frontage Rd-PM
Site Code : 23181005
Start Date : 2022-09-20
Page No : 2

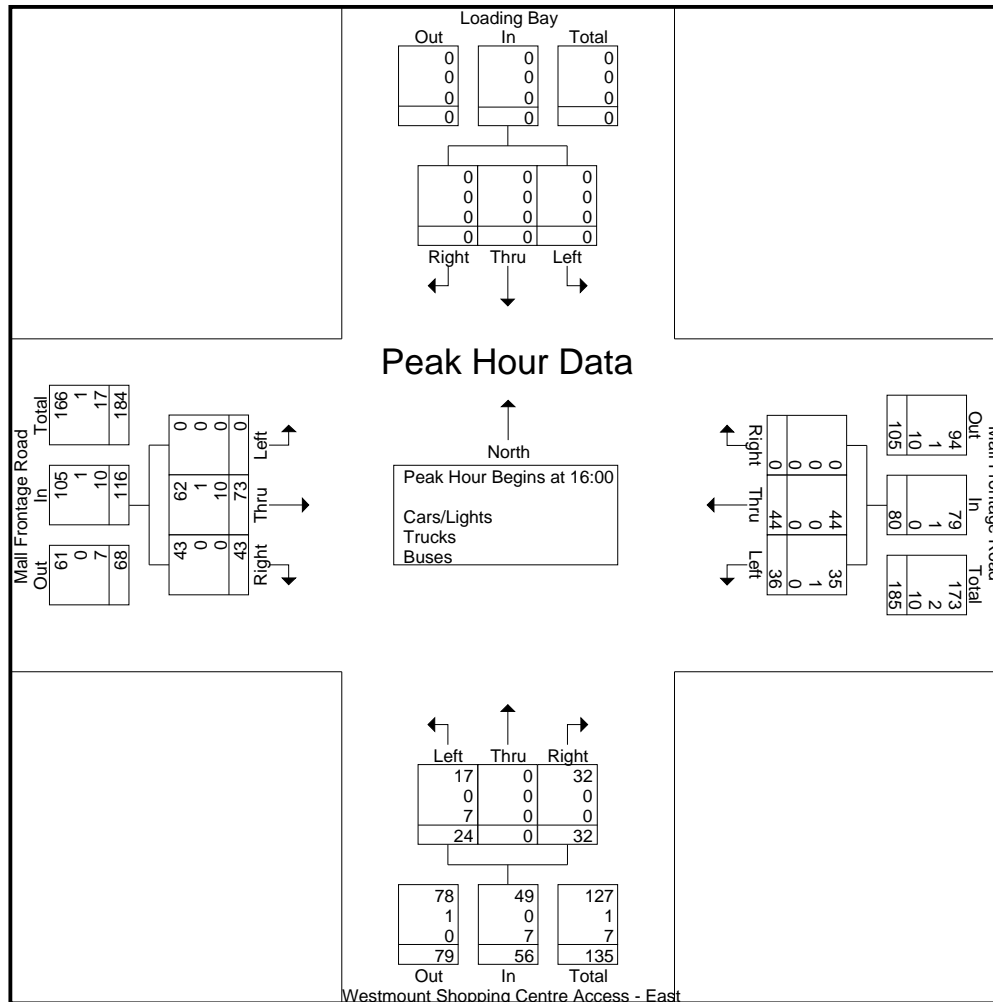


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625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : Westmount Shopping Centre Access (East) & Mall Frontage Rd-PM
Site Code : 23181005
Start Date : 2022-09-20
Page No : 3

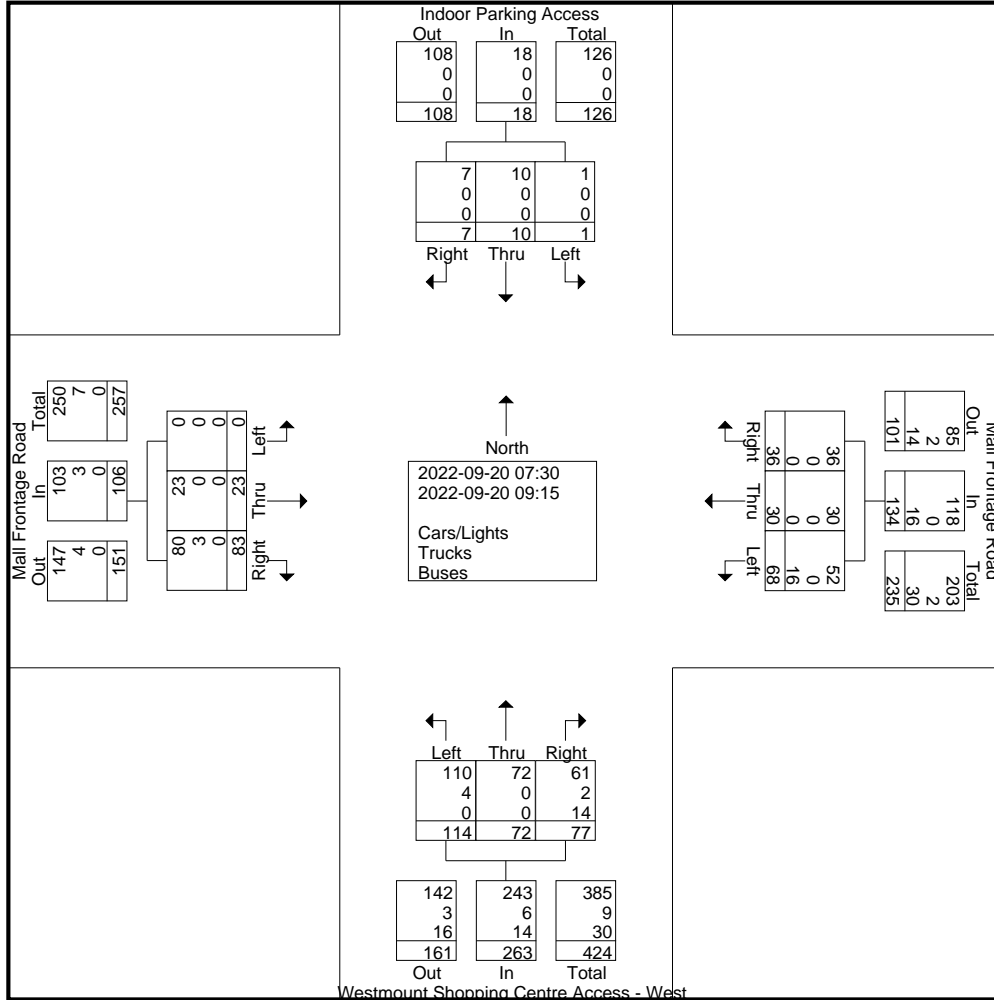
| Start Time | Loading Bay Southbound | | | | Mall Frontage Road Westbound | | | | Westmount Shopping Centre Access - East Northbound | | | | Mall Frontage Road Eastbound | | | | Int. Total |
|------------------------------------------------------|------------------------|------|-------|------------|------------------------------|------|-------|------------|----------------------------------------------------|------|-------|------------|------------------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:00 | | | | | | | | | | | | | | | | | |
| 16:00 | 0 | 0 | 0 | 0 | 6 | 15 | 0 | 21 | 2 | 0 | 7 | 9 | 0 | 25 | 11 | 36 | 66 |
| 16:15 | 0 | 0 | 0 | 0 | 15 | 13 | 0 | 28 | 9 | 0 | 7 | 16 | 0 | 17 | 3 | 20 | 64 |
| 16:30 | 0 | 0 | 0 | 0 | 9 | 6 | 0 | 15 | 7 | 0 | 7 | 14 | 0 | 13 | 14 | 27 | 56 |
| 16:45 | 0 | 0 | 0 | 0 | 6 | 10 | 0 | 16 | 6 | 0 | 11 | 17 | 0 | 18 | 15 | 33 | 66 |
| Total Volume | 0 | 0 | 0 | 0 | 36 | 44 | 0 | 80 | 24 | 0 | 32 | 56 | 0 | 73 | 43 | 116 | 252 |
| % App. Total | 0 | 0 | 0 | 0 | 45 | 55 | 0 | | 42.9 | 0 | 57.1 | | 0 | 62.9 | 37.1 | | |
| PHF | .000 | .000 | .000 | .000 | .600 | .733 | .000 | .714 | .667 | .000 | .727 | .824 | .000 | .730 | .717 | .806 | .955 |
| Cars/Lights | 0 | 0 | 0 | 0 | 35 | 44 | 0 | 79 | 17 | 0 | 32 | 49 | 0 | 62 | 43 | 105 | 233 |
| % Cars/Lights | 0 | 0 | 0 | 0 | 97.2 | 100 | 0 | 98.8 | 70.8 | 0 | 100 | 87.5 | 0 | 84.9 | 100 | 90.5 | 92.5 |
| Trucks | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| % Trucks | 0 | 0 | 0 | 0 | 2.8 | 0 | 0 | 1.3 | 0 | 0 | 0 | 0 | 0 | 1.4 | 0 | 0.9 | 0.8 |
| Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 10 | 0 | 10 | 17 |
| % Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29.2 | 0 | 0 | 12.5 | 0 | 13.7 | 0 | 8.6 | 6.7 |



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625 Cochrane Drive, 9th Floor
 Markham, ON L3R 9R9

File Name : Westmount Shopping Centre Access (West) & Mall Frontage Rd-AM
 Site Code : 23181000
 Start Date : 2022-09-20
 Page No : 2

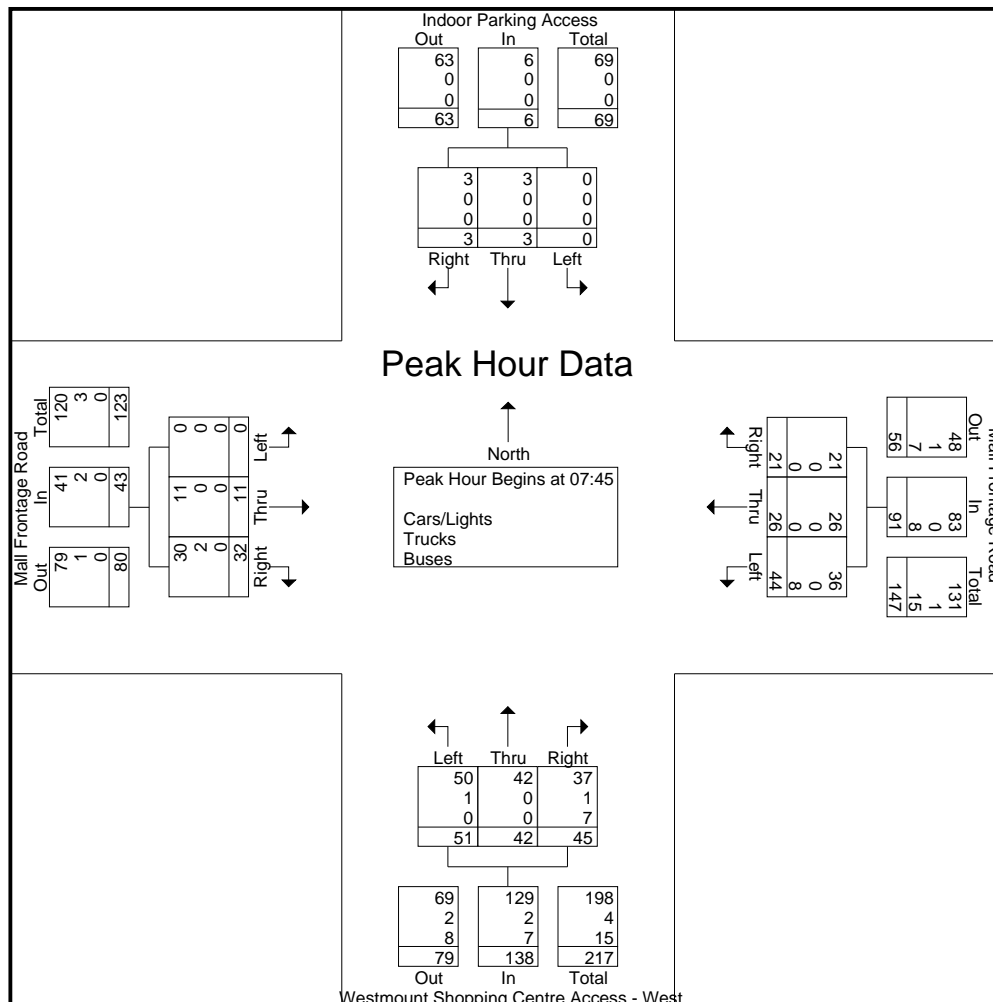


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Markham, ON L3R 9R9

File Name : Westmount Shopping Centre Access (West) & Mall Frontage Rd-AM
Site Code : 23181000
Start Date : 2022-09-20
Page No : 3

| Start Time | Indoor Parking Access Southbound | | | | Mall Frontage Road Westbound | | | | Westmount Shopping Centre Access - West Northbound | | | | Mall Frontage Road Eastbound | | | | Int. Total |
|------------------------------------------------------|----------------------------------|------|-------|------------|------------------------------|------|-------|------------|----------------------------------------------------|------|-------|------------|------------------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:30 to 09:15 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 | | | | | | | | | | | | | | | | | |
| 07:45 | 0 | 1 | 2 | 3 | 9 | 4 | 4 | 17 | 9 | 18 | 15 | 42 | 0 | 3 | 6 | 9 | 71 |
| 08:00 | 0 | 0 | 1 | 1 | 24 | 12 | 7 | 43 | 14 | 13 | 18 | 45 | 0 | 6 | 15 | 21 | 110 |
| 08:15 | 0 | 0 | 0 | 0 | 3 | 7 | 6 | 16 | 12 | 5 | 4 | 21 | 0 | 1 | 5 | 6 | 43 |
| 08:30 | 0 | 2 | 0 | 2 | 8 | 3 | 4 | 15 | 16 | 6 | 8 | 30 | 0 | 1 | 6 | 7 | 54 |
| Total Volume | 0 | 3 | 3 | 6 | 44 | 26 | 21 | 91 | 51 | 42 | 45 | 138 | 0 | 11 | 32 | 43 | 278 |
| % App. Total | 0 | 50 | 50 | | 48.4 | 28.6 | 23.1 | | 37 | 30.4 | 32.6 | | 0 | 25.6 | 74.4 | | |
| PHF | .000 | .375 | .375 | .500 | .458 | .542 | .750 | .529 | .797 | .583 | .625 | .767 | .000 | .458 | .533 | .512 | .632 |
| Cars/Lights | 0 | 3 | 3 | 6 | 36 | 26 | 21 | 83 | 50 | 42 | 37 | 129 | 0 | 11 | 30 | 41 | 259 |
| % Cars/Lights | 0 | 100 | 100 | 100 | 81.8 | 100 | 100 | 91.2 | 98.0 | 100 | 82.2 | 93.5 | 0 | 100 | 93.8 | 95.3 | 93.2 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 2 | 2 | 4 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2.0 | 0 | 2.2 | 1.4 | 0 | 0 | 6.3 | 4.7 | 1.4 |
| Buses | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 | 15 |
| % Buses | 0 | 0 | 0 | 0 | 18.2 | 0 | 0 | 8.8 | 0 | 0 | 15.6 | 5.1 | 0 | 0 | 0 | 0 | 5.4 |



LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor

Markham, ON L3R 9R9

Project No.: 23181 File Name : Westmount Shopping Centre Access (West) & Mall Frontage Rd-PM
 Intersection: Mall Access SW & Mall Frontage Rd 23181000
 Weather: Clear Start Date : 2022-09-20
 Surveyor(s): KL Page No : 1

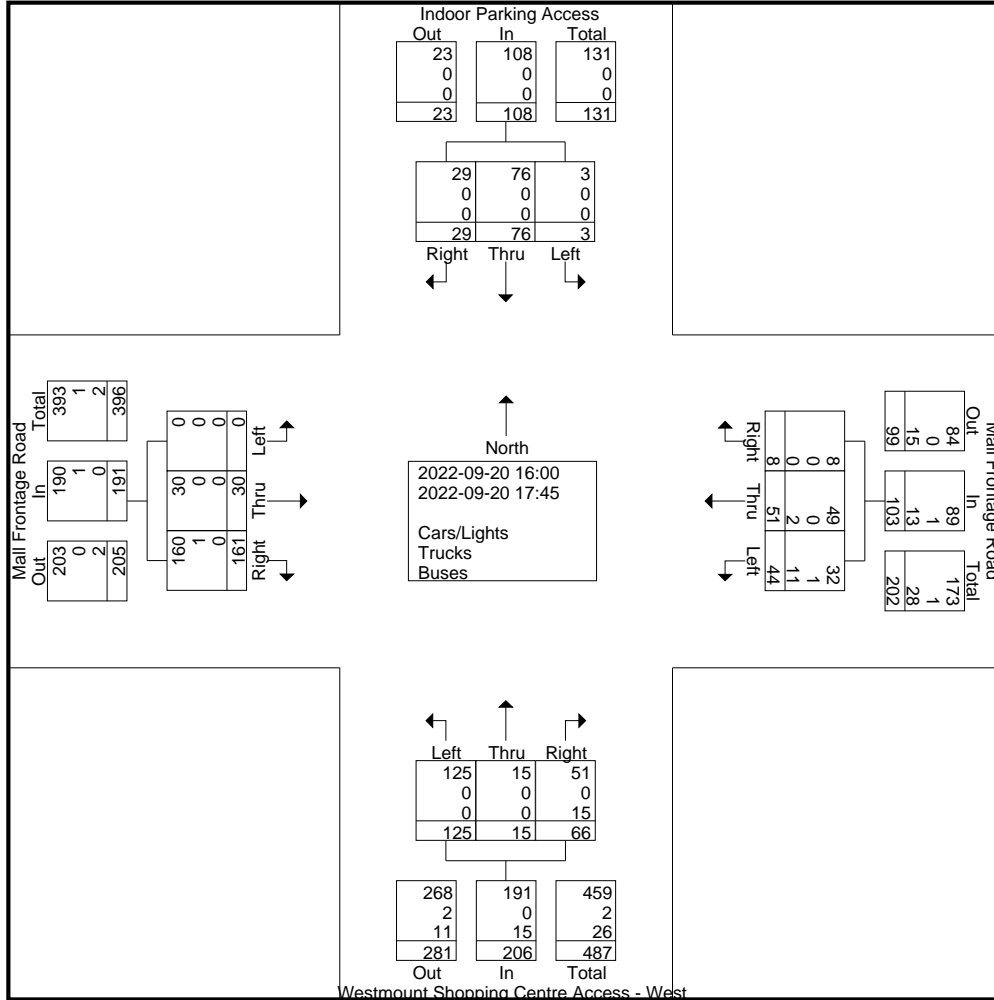
Groups Printed- Cars/Lights - Trucks - Buses

| Start Time | Indoor Parking Access Southbound | | | | | Mall Frontage Road Westbound | | | | | Westmount Shopping Centre Access - West Northbound | | | | | Mall Frontage Road Eastbound | | | | | Exclu. Total | Inclu. Total | Int. Total |
|---------------|----------------------------------|------|-------|------|------------|------------------------------|------|-------|------|------------|----------------------------------------------------|------|-------|------|------------|------------------------------|------|-------|------|------------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | | | |
| 16:00 | 0 | 21 | 7 | [4] | 28 | 8 | 11 | 1 | [1] | 20 | 10 | 3 | 10 | [3] | 23 | 0 | 3 | 22 | [0] | 25 | 8 | 96 | 104 |
| 16:15 | 1 | 9 | 2 | [1] | 12 | 5 | 9 | 3 | [0] | 17 | 14 | 1 | 7 | [0] | 22 | 0 | 4 | 21 | [0] | 25 | 1 | 76 | 77 |
| 16:30 | 0 | 12 | 3 | [2] | 15 | 3 | 5 | 1 | [0] | 9 | 19 | 1 | 12 | [1] | 32 | 0 | 2 | 21 | [0] | 23 | 3 | 79 | 82 |
| 16:45 | 0 | 12 | 8 | [2] | 20 | 6 | 7 | 1 | [0] | 14 | 16 | 1 | 12 | [2] | 29 | 0 | 5 | 19 | [0] | 24 | 4 | 87 | 91 |
| Total | 1 | 54 | 20 | [9] | 75 | 22 | 32 | 6 | [1] | 60 | 59 | 6 | 41 | [6] | 106 | 0 | 14 | 83 | [0] | 97 | 16 | 338 | 354 |
| 17:00 | 0 | 7 | 5 | [3] | 12 | 9 | 2 | 0 | [0] | 11 | 21 | 3 | 4 | [1] | 28 | 0 | 4 | 22 | [0] | 26 | 4 | 77 | 81 |
| 17:15 | 0 | 9 | 0 | [8] | 9 | 4 | 8 | 1 | [0] | 13 | 14 | 2 | 7 | [2] | 23 | 0 | 6 | 21 | [0] | 27 | 10 | 72 | 82 |
| 17:30 | 0 | 5 | 0 | [4] | 5 | 3 | 5 | 0 | [0] | 8 | 19 | 1 | 8 | [0] | 28 | 0 | 4 | 14 | [0] | 18 | 4 | 59 | 63 |
| 17:45 | 2 | 1 | 4 | [12] | 7 | 6 | 4 | 1 | [0] | 11 | 12 | 3 | 6 | [2] | 21 | 0 | 2 | 21 | [0] | 23 | 14 | 62 | 76 |
| Total | 2 | 22 | 9 | [27] | 33 | 22 | 19 | 2 | [0] | 43 | 66 | 9 | 25 | [5] | 100 | 0 | 16 | 78 | [0] | 94 | 32 | 270 | 302 |
| Grand Total | 3 | 76 | 29 | [36] | 108 | 44 | 51 | 8 | [1] | 103 | 125 | 15 | 66 | [11] | 206 | 0 | 30 | 161 | [0] | 191 | 48 | 608 | 656 |
| Apprch % | 2.8 | 70.4 | 26.9 | | | 42.7 | 49.5 | 7.8 | | | 60.7 | 7.3 | 32 | | | 0 | 15.7 | 84.3 | | | | | |
| Total % | 0.5 | 12.5 | 4.8 | | 17.8 | 7.2 | 8.4 | 1.3 | | 16.9 | 20.6 | 2.5 | 10.9 | | 33.9 | 0 | 4.9 | 26.5 | | 31.4 | 7.3 | 92.7 | |
| Cars/Lights | 3 | 76 | 29 | | 144 | 32 | 49 | 8 | | 90 | 125 | 15 | 51 | | 194 | 0 | 30 | 160 | | 190 | 0 | 0 | 618 |
| % Cars/Lights | 100 | 100 | 100 | | 100 | 72.7 | 96.1 | 100 | | 86.5 | 100 | 100 | 77.3 | | 89.4 | 0 | 100 | 99.4 | | 99.5 | 0 | 0 | 94.2 |
| Trucks | 0 | 0 | 0 | | 0 | 1 | 0 | 0 | | 1 | 0 | 0 | 0 | | 8 | 0 | 0 | 1 | | 1 | 0 | 0 | 10 |
| % Trucks | 0 | 0 | 0 | | 0 | 2.3 | 0 | 0 | | 1 | 0 | 0 | 0 | | 3.7 | 0 | 0 | 0.6 | | 0.5 | 0 | 0 | 1.5 |
| Buses | 0 | 0 | 0 | | 0 | 11 | 2 | 0 | | 13 | 0 | 0 | 15 | | 15 | 0 | 0 | 0 | | 0 | 0 | 0 | 28 |
| % Buses | 0 | 0 | 0 | | 0 | 25 | 3.9 | 0 | | 12.5 | 0 | 0 | 22.7 | | 6.9 | 0 | 0 | 0 | | 0 | 0 | 0 | 4.3 |

LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
 Markham, ON L3R 9R9

File Name : Westmount Shopping Centre Access (West) & Mall Frontage Rd-PM
 Site Code : 23181000
 Start Date : 2022-09-20
 Page No : 2

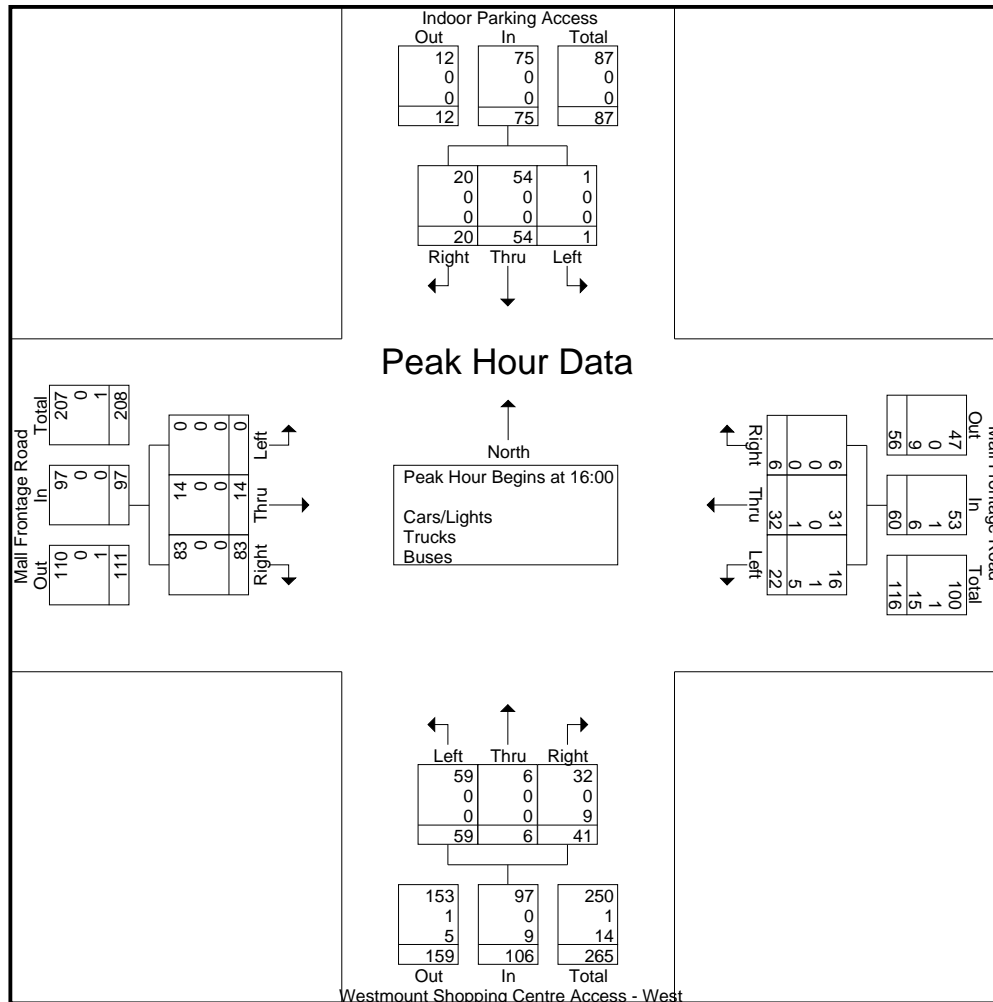


LEA Consulting Ltd.

625 Cochrane Drive, 9th Floor
Markham, ON L3R 9R9

File Name : Westmount Shopping Centre Access (West) & Mall Frontage Rd-PM
Site Code : 23181000
Start Date : 2022-09-20
Page No : 3

| Start Time | Indoor Parking Access Southbound | | | | Mall Frontage Road Westbound | | | | Westmount Shopping Centre Access - West Northbound | | | | Mall Frontage Road Eastbound | | | | Int. Total |
|------------------------------------------------------|----------------------------------|------|-------|------------|------------------------------|------|-------|------------|----------------------------------------------------|------|-------|------------|------------------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:00 | | | | | | | | | | | | | | | | | |
| 16:00 | 0 | 21 | 7 | 28 | 8 | 11 | 1 | 20 | 10 | 3 | 10 | 23 | 0 | 3 | 22 | 25 | 96 |
| 16:15 | 1 | 9 | 2 | 12 | 5 | 9 | 3 | 17 | 14 | 1 | 7 | 22 | 0 | 4 | 21 | 25 | 76 |
| 16:30 | 0 | 12 | 3 | 15 | 3 | 5 | 1 | 9 | 19 | 1 | 12 | 32 | 0 | 2 | 21 | 23 | 79 |
| 16:45 | 0 | 12 | 8 | 20 | 6 | 7 | 1 | 14 | 16 | 1 | 12 | 29 | 0 | 5 | 19 | 24 | 87 |
| Total Volume | 1 | 54 | 20 | 75 | 22 | 32 | 6 | 60 | 59 | 6 | 41 | 106 | 0 | 14 | 83 | 97 | 338 |
| % App. Total | 1.3 | 72 | 26.7 | | 36.7 | 53.3 | 10 | | 55.7 | 5.7 | 38.7 | | 0 | 14.4 | 85.6 | | |
| PHF | .250 | .643 | .625 | .670 | .688 | .727 | .500 | .750 | .776 | .500 | .854 | .828 | .000 | .700 | .943 | .970 | .880 |
| Cars/Lights | 1 | 54 | 20 | 75 | 16 | 31 | 6 | 53 | 59 | 6 | 32 | 97 | 0 | 14 | 83 | 97 | 322 |
| % Cars/Lights | 100 | 100 | 100 | 100 | 72.7 | 96.9 | 100 | 88.3 | 100 | 100 | 78.0 | 91.5 | 0 | 100 | 100 | 100 | 95.3 |
| Trucks | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Trucks | 0 | 0 | 0 | 0 | 4.5 | 0 | 0 | 1.7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.3 |
| Buses | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 6 | 0 | 0 | 9 | 9 | 0 | 0 | 0 | 0 | 15 |
| % Buses | 0 | 0 | 0 | 0 | 22.7 | 3.1 | 0 | 10.0 | 0 | 0 | 22.0 | 8.5 | 0 | 0 | 0 | 0 | 4.4 |





Signal Timing Report

132: Wonderland Road S/Commissioners Road

4.3.1 Vehicle Detector Diagnostics Set 1 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Switch Phase | Phase | 6 | 0 | 8 | 0 | 2 | 0 | 4 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 60 | 0 | 0 | 0 | 60 | 0 | 0 | 0 |
| Max Presence | Min | 60 | 0 | 60 | 60 | 60 | 0 | 60 | 60 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.3.2 Vehicle Detector Diagnostics Set 2 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.4.1 Pedestrian Detector Diagnostics Set 1 (Detector -> Ped Parameter 1-8)

| Ped Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---|---|---|----|---|---|---|----|
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 60 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

5.1 Coordination Constants (Coordination -> Parameter)

| Coord Param | Units | Val |
|------------------|-------|------------|
| Operational Mode | Enum | Automatic |
| Correction Mode | Enum | shortway |
| Maximum Mode | Enum | maxInhibit |
| Force Mode | Enum | fixed |



Signal Timing Report

132: Wonderland Road S/Commissioners Road

5.2 Patterns (Coordination -> Pattern 1-32)

| Coord Pattern | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|----------|-----|---|-----|---|-----|---|---|---|
| Cycle Time | Sec | 120 | 0 | 120 | 0 | 130 | 0 | 0 | 0 |
| Offset | Sec | 26 | 0 | 107 | 0 | 122 | 0 | 0 | 0 |
| Split | Split | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---------------|----------|---|-----|-----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 120 | 120 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 20 | 24 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 17 | 18 | 19 | 20 | 21 | 22 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

5.3 Coordination Split (Coordination -> Splits)

| Coord Split | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------|-------|-------|------|-------|-------|-------|------|-------|-------|
| SPLIT 1 - TIME | Sec | 24 | 46 | 15 | 35 | 10 | 60 | 15 | 35 |
| SPLIT 1 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 3 - TIME | Sec | 20 | 44 | 13 | 43 | 10 | 54 | 21 | 35 |
| SPLIT 3 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 5 - TIME | Sec | 24 | 53 | 13 | 40 | 10 | 67 | 18 | 35 |
| SPLIT 5 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 10 - TIME | Sec | 13 | 55 | 13 | 39 | 13 | 55 | 13 | 39 |
| SPLIT 10 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 11 - TIME | Sec | 17 | 54 | 13 | 36 | 10 | 61 | 14 | 35 |
| SPLIT 10 - TIME | Enum | false | true | false | false | false | true | false | false |

| Coord Split | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------|-------|---|----|----|----|----|----|----|----|
|-------------|-------|---|----|----|----|----|----|----|----|

6.3.2 Daylight Saving Time – Schedule (Time Base -> Daylight Saving)

| TB DST | Units | Val |
|------------------|-------|----------|
| Begin Month | Enum | absolute |
| Begin Occurrence | Enum | first |
| Begin DOW | Enum | sunday |
| Begin DOM | Date | 13 |



Signal Timing Report

132: Wonderland Road S/Commissioners Road

7.1 - 7.3 Preempt (Preemption -> Parameter 1-6)

| Preempt Param | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|---------|-------------|-------------|------|------|------|------|----|----|
| Control | Bit | Non-Locking | Non-Locking | 0 | 0 | 0 | 0 | | |
| Link | Preempt | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Delay | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Duration | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Green | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Min Walk | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Enter Ped Clear | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Track Green | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Dwell | Sec | 20 | 20 | 0 | 0 | 0 | 0 | | |
| Max Presence | Sec | 120 | 120 | 0 | 0 | 0 | 0 | | |
| [P2] Track Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Phase | Phase | (2,6) | (4,8) | () | () | () | () | () | () |
| [P2] Dwell Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Exit Phase | Phase | (4,8) | (2,6) | () | () | () | () | () | () |
| [S] State | Enum | | | | | | | | |
| [P2] Track Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling | Phase | () | () | () | () | () | () | () | () |
| Enter Yellow | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Enter Red Clear | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Yellow | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Red Clear | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |



Signal Timing Report

138: Village Green Avenue/Wonderland Road S

4.3.1 Vehicle Detector Diagnostics Set 1 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.3.2 Vehicle Detector Diagnostics Set 2 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.4.1 Pedestrian Detector Diagnostics Set 1 (Detector -> Ped Parameter 1-8)

| Ped Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---|---|---|----|---|---|---|---|
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

5.1 Coordination Constants (Coordination -> Parameter)

| Coord Param | Units | Val |
|------------------|-------|------------|
| Operational Mode | Enum | Automatic |
| Correction Mode | Enum | shortway |
| Maximum Mode | Enum | maxInhibit |
| Force Mode | Enum | fixed |



Signal Timing Report

138: Village Green Avenue/Wonderland Road S

5.2 Patterns (Coordination -> Pattern 1-32)

| Coord Pattern | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|----------|-----|---|-----|---|-----|---|---|---|
| Cycle Time | Sec | 120 | 0 | 120 | 0 | 130 | 0 | 0 | 0 |
| Offset | Sec | 114 | 0 | 86 | 0 | 98 | 0 | 0 | 0 |
| Split | Split | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---------------|----------|---|-----|-----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 120 | 120 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 11 | 118 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 17 | 18 | 19 | 20 | 21 | 22 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

5.3 Coordination Split (Coordination -> Splits)

| Coord Split | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| SPLIT 1 - TIME | Sec | 0 | 84 | 0 | 36 | 0 | 0 | 0 | 0 |
| SPLIT 1 - COORD | Enum | false | true | false | false | false | false | false | false |
| SPLIT 3 - TIME | Sec | 0 | 84 | 0 | 36 | 0 | 0 | 0 | 0 |
| SPLIT 3 - COORD | Enum | false | true | false | false | false | false | false | false |
| SPLIT 5 - TIME | Sec | 0 | 94 | 0 | 36 | 0 | 0 | 0 | 0 |
| SPLIT 5 - COORD | Enum | false | true | false | false | false | false | false | false |
| SPLIT 10 - TIME | Sec | 0 | 78 | 0 | 42 | 0 | 0 | 0 | 0 |
| SPLIT 10 - COORD | Enum | false | true | false | false | false | false | false | false |
| SPLIT 11 - TIME | Sec | 0 | 84 | 0 | 36 | 0 | 0 | 0 | 0 |
| SPLIT 10 - TIME | Enum | false | true | false | false | false | false | false | false |

| Coord Split | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------|-------|---|----|----|----|----|----|----|----|
|-------------|-------|---|----|----|----|----|----|----|----|

6.3.2 Daylight Saving Time – Schedule (Time Base -> Daylight Saving)

| TB DST | Units | Val |
|------------------|-------|----------|
| Begin Month | Enum | absolute |
| Begin Occurrence | Enum | first |
| Begin DOW | Enum | sunday |
| Begin DOM | Date | 13 |



Signal Timing Report

138: Village Green Avenue/Wonderland Road S

7.1 - 7.3 Preempt (Preemption -> Parameter 1-6)

| Preempt Param | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|---------|-------------|-------------|------|------|------|------|----|----|
| Control | Bit | Non-Locking | Non-Locking | 0 | 0 | 0 | 0 | | |
| Link | Preempt | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Delay | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Duration | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Green | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Min Walk | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Enter Ped Clear | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Track Green | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Dwell | Sec | 20 | 20 | 0 | 0 | 0 | 0 | | |
| Max Presence | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| [P2] Track Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Phase | Phase | (2) | (4) | () | () | () | () | () | () |
| [P2] Dwell Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Exit Phase | Phase | (4) | (2) | () | () | () | () | () | () |
| [S] State | Enum | | | | | | | | |
| [P2] Track Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling | Phase | () | () | () | () | () | () | () | () |
| Enter Yellow | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Enter Red Clear | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Yellow | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Red Clear | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |



Signal Timing Report

148: Westmount Mall Entrance/Wonderland Road S

4.3.1 Vehicle Detector Diagnostics Set 1 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 60 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.3.2 Vehicle Detector Diagnostics Set 2 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.4.1 Pedestrian Detector Diagnostics Set 1 (Detector -> Ped Parameter 1-8)

| Ped Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---|---|---|----|---|---|---|----|
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 60 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

5.1 Coordination Constants (Coordination -> Parameter)

| Coord Param | Units | Val |
|------------------|-------|------------|
| Operational Mode | Enum | Automatic |
| Correction Mode | Enum | shortway |
| Maximum Mode | Enum | maxInhibit |
| Force Mode | Enum | fixed |



Signal Timing Report

148: Westmount Mall Entrance/Wonderland Road S

5.2 Patterns (Coordination -> Pattern 1-32)

| Coord Pattern | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|----------|-----|---|-----|---|-----|---|---|---|
| Cycle Time | Sec | 120 | 0 | 120 | 0 | 130 | 0 | 0 | 0 |
| Offset | Sec | 63 | 0 | 24 | 0 | 40 | 0 | 0 | 0 |
| Split | Split | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---------------|----------|---|-----|-----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 120 | 120 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 61 | 62 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 17 | 18 | 19 | 20 | 21 | 22 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

5.3 Coordination Split (Coordination -> Splits)

| Coord Split | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------|-------|-------|------|-------|-------|-------|------|-------|-------|
| SPLIT 1 - TIME | Sec | 0 | 81 | 0 | 39 | 0 | 81 | 0 | 39 |
| SPLIT 1 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 3 - TIME | Sec | 0 | 75 | 0 | 45 | 0 | 75 | 0 | 45 |
| SPLIT 3 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 5 - TIME | Sec | 0 | 91 | 0 | 39 | 0 | 91 | 0 | 39 |
| SPLIT 5 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 10 - TIME | Sec | 0 | 79 | 0 | 41 | 0 | 79 | 0 | 41 |
| SPLIT 10 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 11 - TIME | Sec | 0 | 81 | 0 | 39 | 0 | 81 | 0 | 39 |
| SPLIT 10 - TIME | Enum | false | true | false | false | false | true | false | false |

| Coord Split | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------|-------|---|----|----|----|----|----|----|----|
|-------------|-------|---|----|----|----|----|----|----|----|

6.3.2 Daylight Saving Time – Schedule (Time Base -> Daylight Saving)

| TB DST | Units | Val |
|------------------|-------|----------|
| Begin Month | Enum | absolute |
| Begin Occurrence | Enum | first |
| Begin DOW | Enum | sunday |
| Begin DOM | Date | 13 |



Signal Timing Report

148: Westmount Mall Entrance/Wonderland Road S

7.1 - 7.3 Preempt (Preemption -> Parameter 1-6)

| Preempt Param | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|---------|-------------|-------------|------|------|------|------|----|----|
| Control | Bit | Non-Locking | Non-Locking | 0 | 0 | 0 | 0 | | |
| Link | Preempt | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Delay | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Duration | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Green | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Min Walk | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Enter Ped Clear | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Track Green | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Dwell | Sec | 20 | 20 | 0 | 0 | 0 | 0 | | |
| Max Presence | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| [P2] Track Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Phase | Phase | (2,6) | (4,8) | () | () | () | () | () | () |
| [P2] Dwell Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Exit Phase | Phase | (4,8) | (2,6) | () | () | () | () | () | () |
| [S] State | Enum | | | | | | | | |
| [P2] Track Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling | Phase | () | () | () | () | () | () | () | () |
| Enter Yellow | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Enter Red Clear | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Yellow | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Red Clear | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |



Signal Timing Report

146: Viscount Road/Wonderland Road S

4.3.1 Vehicle Detector Diagnostics Set 1 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---------|---------|----------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Red Lock | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 4 | 8 |
| Switch Phase | Phase | 6 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 60 | 0 | 0 | 0 | 60 | 0 | 0 | 0 |
| Max Presence | Min | 60 | 0 | 60 | 60 | 60 | 0 | 0 | 60 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.3.2 Vehicle Detector Diagnostics Set 2 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.4.1 Pedestrian Detector Diagnostics Set 1 (Detector -> Ped Parameter 1-8)

| Ped Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---|---|---|----|---|---|---|----|
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 60 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

5.1 Coordination Constants (Coordination -> Parameter)

| Coord Param | Units | Val |
|------------------|-------|------------|
| Operational Mode | Enum | Automatic |
| Correction Mode | Enum | shortway |
| Maximum Mode | Enum | maxInhibit |
| Force Mode | Enum | fixed |



Signal Timing Report

146: Viscount Road/Wonderland Road S

5.2 Patterns (Coordination -> Pattern 1-32)

| Coord Pattern | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|----------|-----|---|-----|---|-----|---|---|---|
| Cycle Time | Sec | 120 | 0 | 120 | 0 | 130 | 0 | 0 | 0 |
| Offset | Sec | 75 | 0 | 37 | 0 | 59 | 0 | 0 | 0 |
| Split | Split | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---------------|----------|---|-----|-----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 120 | 120 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 78 | 75 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 17 | 18 | 19 | 20 | 21 | 22 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

5.3 Coordination Split (Coordination -> Splits)

| Coord Split | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------|-------|-------|------|-------|-------|-------|------|-------|-------|
| SPLIT 1 - TIME | Sec | 10 | 56 | 10 | 44 | 13 | 53 | 0 | 54 |
| SPLIT 1 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 3 - TIME | Sec | 12 | 54 | 10 | 44 | 13 | 53 | 0 | 54 |
| SPLIT 3 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 5 - TIME | Sec | 12 | 64 | 10 | 44 | 16 | 60 | 0 | 54 |
| SPLIT 5 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 10 - TIME | Sec | 14 | 48 | 14 | 44 | 14 | 48 | 0 | 58 |
| SPLIT 10 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 11 - TIME | Sec | 12 | 54 | 10 | 44 | 15 | 51 | 0 | 54 |
| SPLIT 10 - TIME | Enum | false | true | false | false | false | true | false | false |

| Coord Split | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------|-------|---|----|----|----|----|----|----|----|
|-------------|-------|---|----|----|----|----|----|----|----|

6.3.2 Daylight Saving Time – Schedule (Time Base -> Daylight Saving)

| TB DST | Units | Val |
|------------------|-------|----------|
| Begin Month | Enum | absolute |
| Begin Occurrence | Enum | first |
| Begin DOW | Enum | sunday |
| Begin DOM | Date | 13 |



Signal Timing Report

146: Viscount Road/Wonderland Road S

7.1 - 7.3 Preempt (Preemption -> Parameter 1-6)

| Preempt Param | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|---------|-------------|-------------|------|------|------|------|----|----|
| Control | Bit | Non-Locking | Non-Locking | 0 | 0 | 0 | 0 | | |
| Link | Preempt | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Delay | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Duration | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Green | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Min Walk | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Enter Ped Clear | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Track Green | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Dwell | Sec | 20 | 20 | 0 | 0 | 0 | 0 | | |
| Max Presence | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| [P2] Track Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Phase | Phase | (2,6) | (4,8) | () | () | () | () | () | () |
| [P2] Dwell Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Exit Phase | Phase | (4,8) | (2,6) | () | () | () | () | () | () |
| [S] State | Enum | | | | | | | | |
| [P2] Track Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling | Phase | () | () | () | () | () | () | () | () |
| Enter Yellow | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Enter Red Clear | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Yellow | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Red Clear | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |



Signal Timing Report

160: Wonderland Road S/Southdale Road

4.3.1 Vehicle Detector Diagnostics Set 1 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Switch Phase | Phase | 6 | 0 | 8 | 0 | 2 | 0 | 4 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 60 | 0 | 0 | 0 | 60 | 0 | 0 | 0 |
| Max Presence | Min | 60 | 0 | 60 | 60 | 60 | 0 | 60 | 60 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.3.2 Vehicle Detector Diagnostics Set 2 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.4.1 Pedestrian Detector Diagnostics Set 1 (Detector -> Ped Parameter 1-8)

| Ped Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---|---|---|----|---|---|---|----|
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 60 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

5.1 Coordination Constants (Coordination -> Parameter)

| Coord Param | Units | Val |
|------------------|-------|------------|
| Operational Mode | Enum | Automatic |
| Correction Mode | Enum | shortway |
| Maximum Mode | Enum | maxInhibit |
| Force Mode | Enum | fixed |



Signal Timing Report

160: Wonderland Road S/Southdale Road

5.2 Patterns (Coordination -> Pattern 1-32)

| Coord Pattern | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|----------|-----|---|-----|---|-----|---|---|---|
| Cycle Time | Sec | 120 | 0 | 120 | 0 | 130 | 0 | 0 | 0 |
| Offset | Sec | 34 | 0 | 113 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---------------|----------|---|-----|-----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 120 | 120 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 82 | 17 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 17 | 18 | 19 | 20 | 21 | 22 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

5.3 Coordination Split (Coordination -> Splits)

| Coord Split | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|------------------|-------|-------|------|-------|-------|-------|------|-------|-------|
| SPLIT 1 - TIME | Sec | 30 | 36 | 11 | 43 | 10 | 56 | 10 | 44 |
| SPLIT 1 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 3 - TIME | Sec | 28 | 36 | 15 | 41 | 16 | 48 | 14 | 42 |
| SPLIT 3 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 5 - TIME | Sec | 26 | 48 | 12 | 44 | 23 | 51 | 16 | 40 |
| SPLIT 5 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 10 - TIME | Sec | 24 | 47 | 10 | 39 | 10 | 61 | 0 | 49 |
| SPLIT 10 - COORD | Enum | false | true | false | false | false | true | false | false |
| SPLIT 11 - TIME | Sec | 24 | 43 | 13 | 40 | 18 | 49 | 13 | 40 |
| SPLIT 10 - TIME | Enum | false | true | false | false | false | true | false | false |

| Coord Split | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------|-------|---|----|----|----|----|----|----|----|
|-------------|-------|---|----|----|----|----|----|----|----|

6.3.2 Daylight Saving Time – Schedule (Time Base -> Daylight Saving)

| TB DST | Units | Val |
|------------------|-------|----------|
| Begin Month | Enum | absolute |
| Begin Occurrence | Enum | first |
| Begin DOW | Enum | sunday |
| Begin DOM | Date | 13 |



Signal Timing Report

160: Wonderland Road S/Southdale Road

7.1 - 7.3 Preempt (Preemption -> Parameter 1-6)

| Preempt Param | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|---------|-------------|-------------|------|------|------|------|----|----|
| Control | Bit | Non-Locking | Non-Locking | 0 | 0 | 0 | 0 | | |
| Link | Preempt | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Delay | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Duration | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Green | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Min Walk | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Enter Ped Clear | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Track Green | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Dwell | Sec | 20 | 20 | 0 | 0 | 0 | 0 | | |
| Max Presence | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| [P2] Track Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Phase | Phase | (2,6) | (4,8) | () | () | () | () | () | () |
| [P2] Dwell Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Exit Phase | Phase | (4,8) | (2,6) | () | () | () | () | () | () |
| [S] State | Enum | | | | | | | | |
| [P2] Track Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling | Phase | () | () | () | () | () | () | () | () |
| Enter Yellow | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Enter Red Clear | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Yellow | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Red Clear | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |



Signal Timing Report

137: Viscount Road/Westmount Mall Entrance

4.3.1 Vehicle Detector Diagnostics Set 1 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.3.2 Vehicle Detector Diagnostics Set 2 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.4.1 Pedestrian Detector Diagnostics Set 1 (Detector -> Ped Parameter 1-8)

| Ped Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---|---|---|---|---|---|---|---|
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

5.1 Coordination Constants (Coordination -> Parameter)

| Coord Param | Units | Val |
|------------------|-------|------------|
| Operational Mode | Enum | Automatic |
| Correction Mode | Enum | shortway |
| Maximum Mode | Enum | maxInhibit |
| Force Mode | Enum | fixed |



Signal Timing Report

137: Viscount Road/Westmount Mall Entrance

5.2 Patterns (Coordination -> Pattern 1-32)

| Coord Pattern | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|----------|----|---|---|---|----|---|---|---|
| Cycle Time | Sec | 60 | 0 | 0 | 0 | 65 | 0 | 0 | 0 |
| Offset | Sec | 47 | 0 | 0 | 0 | 12 | 0 | 0 | 0 |
| Split | Split | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---------------|----------|---|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 60 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 17 | 18 | 19 | 20 | 21 | 22 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

5.3 Coordination Split (Coordination -> Splits)

| Coord Split | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| SPLIT 1 - TIME | Sec | 0 | 34 | 0 | 26 | 0 | 0 | 0 | 0 |
| SPLIT 1 - COORD | Enum | false | true | false | false | false | false | false | false |
| SPLIT 5 - TIME | Sec | 0 | 36 | 0 | 29 | 0 | 0 | 0 | 0 |
| SPLIT 5 - COORD | Enum | false | true | false | false | false | false | false | false |
| SPLIT 11 - TIME | Sec | 0 | 34 | 0 | 26 | 0 | 0 | 0 | 0 |
| SPLIT 10 - TIME | Enum | false | true | false | false | false | false | false | false |

| Coord Split | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------|-------|---|----|----|----|----|----|----|----|
|-------------|-------|---|----|----|----|----|----|----|----|

6.3.2 Daylight Saving Time – Schedule (Time Base -> Daylight Saving)

| TB DST | Units | Val |
|------------------|-------|----------|
| Begin Month | Enum | absolute |
| Begin Occurrence | Enum | first |
| Begin DOW | Enum | sunday |
| Begin DOM | Date | 13 |
| Begin Seconds | Sec | 9943200 |
| End Month | Enum | 1 |
| End Occurrence | Enum | 1 |
| End DOW | Enum | 1 |
| End DOM | Date | 1 |



Signal Timing Report

137: Viscount Road/Westmount Mall Entrance

7.1 - 7.3 Preempt (Preemption -> Parameter 1-6)

| Preempt Param | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|---------|------|------|------|-------------|------|------|----|----|
| Control | Bit | 0 | 0 | 0 | Non-Locking | 0 | 0 | | |
| Link | Preempt | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Delay | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Duration | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Green | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Min Walk | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Enter Ped Clear | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Track Green | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Dwell | Sec | 20 | 20 | 0 | 0 | 0 | 0 | | |
| Max Presence | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| [P2] Track Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Phase | Phase | (2) | (4) | () | () | () | () | () | () |
| [P2] Dwell Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Exit Phase | Phase | (4) | (2) | () | () | () | () | () | () |
| [S] State | Enum | | | | | | | | |
| [P2] Track Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling | Phase | () | () | () | () | () | () | () | () |
| Enter Yellow | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Enter Red Clear | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Yellow | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Red Clear | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |



Signal Timing Report

819: Viscount Road/Woodcrest Boulevard

4.3.1 Vehicle Detector Diagnostics Set 1 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Options | Bit | Passage | Passage | Passage | Passage | Passage | Passage | Passage | Passage |
| Call Phase | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.3.2 Vehicle Detector Diagnostics Set 2 (Detector -> Veh Parameter 1-16)

| Veh Detector | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----------------|------------|-----|-----|-----|-----|-----|-----|-----|-----|
| Options | Bit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Call Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Switch Phase | Phase | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Delay | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Extend | Sec | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Queue Limit | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Fail Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| [S] Alarms | Bit | | | | | | | | |
| [S] Reported | Bit | | | | | | | | |
| [C] Reset | Enum | | | | | | | | |

4.4.1 Pedestrian Detector Diagnostics Set 1 (Detector -> Ped Parameter 1-8)

| Ped Detector | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|----------------|------------|---|---|---|----|---|---|---|---|
| Call Phase | Phase | 0 | 2 | 0 | 4 | 0 | 6 | 0 | 8 |
| No Activity | Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Max Presence | Min | 0 | 0 | 0 | 60 | 0 | 0 | 0 | 0 |
| Erratic Counts | Counts/Min | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

5.1 Coordination Constants (Coordination -> Parameter)

| Coord Param | Units | Val |
|------------------|-------|------------|
| Operational Mode | Enum | Automatic |
| Correction Mode | Enum | shortway |
| Maximum Mode | Enum | maxInhibit |
| Force Mode | Enum | fixed |



Signal Timing Report

819: Viscount Road/Woodcrest Boulevard

5.2 Patterns (Coordination -> Pattern 1-32)

| Coord Pattern | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|----------|---|---|---|---|---|---|---|---|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---------------|----------|---|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 17 | 18 | 19 | 20 | 21 | 22 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

| Coord Pattern | Units | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|---------------|----------|----|----|----|----|----|----|----|----|
| Cycle Time | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Offset | Sec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Split | Split | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Sequence | Sequence | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

5.3 Coordination Split (Coordination -> Splits)

| Coord Split | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------------|-------|---|---|---|---|---|---|---|---|
|-------------|-------|---|---|---|---|---|---|---|---|

| Coord Split | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------|-------|---|----|----|----|----|----|----|----|
|-------------|-------|---|----|----|----|----|----|----|----|

6.3.2 Daylight Saving Time – Schedule (Time Base -> Daylight Saving)

| TB DST | Units | Val |
|------------------|-------|----------|
| Begin Month | Enum | absolute |
| Begin Occurrence | Enum | first |
| Begin DOW | Enum | sunday |
| Begin DOM | Date | 13 |
| Begin Seconds | Sec | 9943200 |
| End Month | Enum | 1 |
| End Occurrence | Enum | 1 |
| End DOW | Enum | 1 |
| End DOM | Date | 1 |
| End Seconds | Sec | 25668000 |
| Adjustment | Sec | 3600 |



Signal Timing Report

819: Viscount Road/Woodcrest Boulevard

6.6.1 Action Parameters (Time Base -> Action 1-32)

| TB Action | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-----------------|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Pattern | Enum | Pattern 1 | Pattern 2 | Pattern 3 | Pattern 4 | Pattern 5 | Pattern 6 | Pattern 7 | Pattern 8 |
| Aux. Functions | Bit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spec. Functions | Bit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| TB Action | Units | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-----------------|-------|-----------|------------|------------|------------|------------|------------|------------|------------|
| Pattern | Enum | Pattern 9 | Pattern 10 | Pattern 11 | Pattern 12 | Pattern 13 | Pattern 14 | Pattern 15 | Pattern 16 |
| Aux. Functions | Bit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spec. Functions | Bit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| TB Action | Units | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|-----------------|-------|------------|------------|------------|------------|------------|------------|--------------|--------------|
| Pattern | Enum | Pattern 17 | Pattern 18 | Pattern 19 | Pattern 20 | Pattern 21 | Pattern 22 | Interconnect | Interconnect |
| Aux. Functions | Bit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spec. Functions | Bit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| TB Action | Units | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
|-----------------|-------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Pattern | Enum | Interconnect | Interconnect | Interconnect | Interconnect | Interconnect | Interconnect | Interconnect | Interconnect |
| Aux. Functions | Bit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spec. Functions | Bit | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

7.1 - 7.3 Preempt (Preemption -> Parameter 1-6)

| Preempt Param | Units | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------------|---------|-------------|------|------|-------------|------|------|----|----|
| Control | Bit | Non-Locking | 0 | 0 | Non-Locking | 0 | 0 | | |
| Link | Preempt | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Delay | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Duration | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Green | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Min Walk | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Enter Ped Clear | Sec | 255 | 255 | 255 | 255 | 255 | 255 | | |
| Track Green | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Min Dwell | Sec | 20 | 0 | 0 | 0 | 0 | 0 | | |
| Max Presence | Sec | 0 | 0 | 0 | 0 | 0 | 0 | | |
| [P2] Track Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Phase | Phase | (2) | () | () | () | () | () | () | () |
| [P2] Dwell Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Exit Phase | Phase | (2) | () | () | () | () | () | () | () |
| [S] State | Enum | | | | | | | | |
| [P2] Track Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Dwell Overlap | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Phase | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling Ped | Phase | () | () | () | () | () | () | () | () |
| [P2] Cycling | Phase | () | () | () | () | () | () | () | () |
| Enter Yellow | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Enter Red Clear | Sec | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Yellow | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |
| Track Red Clear | Sec | 0.0 | 0.0 | 25.5 | 25.5 | 25.5 | 25.5 | | |

APPENDIX B

Corridor Growth Calculation



SOUTHDALE RD W @ WONDERLAND RD S

| | Weekday PM Peak Hour | | | |
|--------------------------------|----------------------|----------------------|---------------------|---------------------|
| | Wonderland Growth | | Southdale Growth | |
| | Northbound Movements | Southbound Movements | Eastbound Movements | Westbound Movements |
| Thursday, 21 March, 2013 | 930 | 1217 | 632 | 793 |
| Tuesday, 20 September, 2022 | 1106 | 1210 | 675 | 802 |
| Average Growth | 16% | -1% | 6% | 1% |
| Compound Growth | 1.9% | -0.1% | 0.7% | 0.1% |
| Corridor Average Annual Growth | 0.9% | | 0.4% | |

APPENDIX C

Trip Generation and Distribution



| Trip Generation | | | | | | | |
|-------------------------------------------------------|--------------------|----------------------|-------|-------|----------------------|-------|-------|
| Land Use | Calculation | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
| | | In | Out | Total | In | Out | Total |
| ITE Number: 222 876 Rounded 880 Units | Percentage Split | 50% | 50% | 100% | 50% | 50% | 100% |
| | Person Trip Rate | 0.17 | 0.17 | 0.34 | 0.18 | 0.18 | 0.35 |
| | Person Trips | 150 | 150 | 299 | 154 | 154 | 308 |
| | Internal Reduction | 3 | 4 | 7 | 77 | 35 | 112 |
| | Net Person Trips | 147 | 145 | 292 | 77 | 119 | 196 |
| | TMP Vehicle Share | 0.6 | 0.6 | | 0.6 | 0.6 | |
| | Vehicle Trips | 88 | 87 | 175 | 46 | 71 | 117 |
| ITE Number: 220 24 Rounded 25 Units | Percentage Split | 45% | 55% | 100% | 53% | 47% | 100% |
| | Person Trip Rate | 0.39 | 0.47 | 0.86 | 0.53 | 0.47 | 1.00 |
| | Person Trips | 10 | 12 | 22 | 13 | 12 | 25 |
| | Internal Reduction | | | | | | |
| | Net Person Trips | 10 | 12 | 22 | 13 | 12 | 25 |
| | TMP Vehicle Share | 0.6 | 0.6 | | 0.6 | 0.6 | |
| | Vehicle Trips | 6 | 7 | 13 | 8 | 7 | 15 |
| Total Residential Vehicle Trips | | 94 | 94 | 188 | 54 | 78 | 132 |
| ITE Number: 710 431 1000 sqft | Percentage Split | 87% | 13% | 100% | 15% | 85% | 100% |
| | Person Trip Rate | 1.37 | 0.20 | 1.57 | 0.23 | 1.29 | 1.52 |
| | Person Trips | 589 | 88 | 677 | 98 | 557 | 655 |
| | Internal Reduction | 27 | 25 | 51 | 14 | 29 | 43 |
| | Net Person Trips | 562 | 63 | 625 | 85 | 528 | 612 |
| | TTS Vehicle Share | 0.735 | 0.735 | | 0.735 | 0.735 | |
| | Vehicle Trips | 413 | 47 | 460 | 62 | 388 | 450 |
| Total Office Vehicle Trips | | 413 | 47 | 460 | 62 | 388 | 450 |
| Proxy Commercial 201 1000 sqft | Percentage Split | 69% | 31% | 100% | 43% | 57% | 100% |
| | Vehicle Trip Rate | 1.23 | 0.55 | 1.78 | 1.05 | 1.37 | 2.41 |
| | Person Trips | 335 | 151 | 486 | 286 | 374 | 660 |
| | Internal Reduction | 26 | 27 | 53 | 51 | 78 | 130 |
| | Net Person Trips | 309 | 124 | 433 | 235 | 296 | 530 |
| | TTS Vehicle Share | 0.735 | 0.735 | | 0.735 | 0.735 | |
| | Vehicle Trips | 227 | 91 | 318 | 172 | 217 | 389 |
| Total Retail Vehicle Trips | | 227 | 91 | 318 | 172 | 217 | 389 |
| Total Site Vehicle Trips | | 734 | 232 | 966 | 288 | 683 | 971 |
| Existing Site Vehicle Trips (Removed) | | 391 | 176 | 567 | 334 | 436 | 770 |
| Net Site Vehicle Trips | | 343 | 56 | 399 | -46 | 247 | 201 |

Retail/Office Mode Split
73.5

| Internal Reduction | | | | | | |
|--------------------|---------------|-------------------|---------|-------|---------|-------|
| From | To | | AM | AM | PM | PM |
| | | | Percent | Trips | Percent | Trips |
| Residential | Retail (Mall) | Origin-Based | 1% | 1 | 42% | 65 |
| | | Destination-Based | 17% | 57 | 10% | 29 |
| | | Resultant | | 1 | | 29 |
| Retail (Mall) | Residential | Origin-Based | 14% | 21 | 26% | 97 |
| | | Destination-Based | 2% | 3 | 46% | 71 |
| | | Resultant | | 3 | | 71 |
| Office | Retail (Mall) | Origin-Based | 28% | 25 | 20% | 111 |
| | | Destination-Based | 32% | 107 | 8% | 23 |
| | | Resultant | | 25 | | 23 |
| Retail (Mall) | Office | Origin-Based | 29% | 44 | 2% | 7 |
| | | Destination-Based | 4% | 24 | 31% | 30 |
| | | Resultant | | 24 | | 7 |
| Residential | Office | Origin-Based | 2% | 3 | 4% | 6 |
| | | Destination-Based | 3% | 18 | 57% | 56 |
| | | Resultant | | 3 | | 6 |
| Office | Residential | Origin-Based | 1% | 1 | 2% | 11 |
| | | Destination-Based | 0% | 0 | 4% | 6 |
| | | Resultant | | 0 | | 6 |

| Existing Site Trip Generation | | | | | | | |
|-------------------------------|---------------------|----------------------|------|-------|----------------------|------|-------|
| Land Use | Calculation | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
| | | In | Out | Total | In | Out | Total |
| Existing 319 | Directional Split | 69% | 31% | 100% | 43% | 57% | 100% |
| | Existing Site Trips | 391 | 176 | 567 | 334 | 436 | 770 |
| | Vehicle Trip Rate | 1.23 | 0.55 | 1.78 | 1.05 | 1.37 | 2.41 |

| | |
|---------------------|----------------------|
| Existing Leased GFA | |
| | 29657 m ² |
| | 319 1000sqft |

Table 6.2 Unconstrained Internal Person Trip Capture Rates for Trip Destinations within a Mixed-Use Development

| | From | Weekday | |
|-------------------------|---------------------------|--------------|--------------|
| | | AM Peak Hour | PM Peak Hour |
| To OFFICE | From Retail | 4% | 31% |
| | From Restaurant | 14% | 30% |
| | From Cinema/Entertainment | 0% | 6% |
| | From Residential | 3% | 57% |
| To RETAIL | From Hotel | 3% | 0% |
| | From Office | 32% | 8% |
| | From Restaurant | 8% | 50% |
| | From Cinema/Entertainment | 0% | 4% |
| To RESTAURANT | From Residential | 17% | 10% |
| | From Hotel | 4% | 2% |
| | From Office | 23% | 2% |
| | From Retail | 50% | 29% |
| To CINEMA/ENTERTAINMENT | From Residential | 0% | 3% |
| | From Restaurant | 20% | 14% |
| | From Hotel | 6% | 5% |
| | From Office | 0% | 1% |
| To RESIDENTIAL | From Retail | 0% | 26% |
| | From Restaurant | 0% | 32% |
| | From Cinema/Entertainment | 0% | 0% |
| | From Hotel | 0% | 0% |
| To HOTEL | From Office | 0% | 4% |
| | From Retail | 2% | 46% |
| | From Restaurant | 5% | 16% |
| | From Cinema/Entertainment | 0% | 4% |
| From OFFICE | To Retail | 0% | 0% |
| | To Restaurant | 4% | 71% |
| | To Cinema/Entertainment | 0% | 1% |
| | To Residential | 0% | 12% |

Source: Bohner, B., K. Hooper, B. Sperry, and R. Dunphy. NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments. Washington, DC: Transportation Research Board, Tables 101 and 102, 2011.

Table 6.1 Unconstrained Internal Person Trip Capture Rates for Trip Origins within a Mixed-Use Development

| | To | WEEKDAY | |
|---------------------------|-------------------------|--------------|--------------|
| | | AM Peak Hour | PM Peak Hour |
| From OFFICE | To Retail | 28% | 20% |
| | To Restaurant | 63% | 4% |
| | To Cinema/Entertainment | 0% | 0% |
| | To Residential | 1% | 2% |
| From RETAIL | To Hotel | 0% | 0% |
| | To Office | 29% | 2% |
| | To Restaurant | 13% | 29% |
| | To Cinema/Entertainment | 0% | 4% |
| From RESTAURANT | To Residential | 14% | 26% |
| | To Hotel | 0% | 5% |
| | To Office | 31% | 3% |
| | To Retail | 14% | 41% |
| From CINEMA/ENTERTAINMENT | To Cinema/Entertainment | 0% | 8% |
| | To Residential | 4% | 18% |
| | To Hotel | 3% | 7% |
| | To Office | 0% | 2% |
| From RESIDENTIAL | To Retail | 0% | 21% |
| | To Restaurant | 0% | 31% |
| | To Residential | 0% | 8% |
| | To Hotel | 0% | 2% |
| From HOTEL | To Office | 2% | 4% |
| | To Retail | 1% | 42% |
| | To Restaurant | 20% | 21% |
| | To Cinema/Entertainment | 0% | 0% |
| From OFFICE | To Hotel | 0% | 3% |
| | To Office | 75% | 0% |
| | To Retail | 14% | 16% |
| | To Restaurant | 9% | 68% |
| From RETAIL | To Cinema/Entertainment | 0% | 0% |
| | To Residential | 0% | 2% |

Source: Bohner, B., K. Hooper, B. Sperry, and R. Dunphy. NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments. Washington, DC: Transportation Research Board, Tables 99 and 100, 2011.

Residential/Office Distribution

| Gateways | Total | 401 Traffic and | | | | |
|---------------------|-------|-----------------|----------|-------|------|------|
| | | South | Downtown | North | East | West |
| South (Wonderland) | 20% | | 20% | | | |
| East (Commissioner) | 10% | | | | | 10% |
| East (Southdale) | 5% | | | | | 5% |
| North (Wonderland) | 55% | | | 30% | 20% | 5% |
| West (Commissioner) | 5% | | | | | 5% |
| West (Southdale) | 5% | | | | | 5% |
| Total | 100% | | | | | |

| Site Entry and Exit Assumptions Access | Assumed | To/From | |
|-------------------------------------------|---------|---------|-------|
| | | EB/NB | WB/SB |
| Viscount South Access (W) | 24% | | 24% |
| Viscount South Access (E) | 0% | | |
| Wonderland East Access (S) | 59% | 56% | 3% |
| Wonderland East Access (N) | 17% | 14% | 3% |
| Total | | | 100% |

| | SBL/WBR | SBR/EBL | EBL/SBR | EBR/NBL |
|----------------------------|---------|---------|---------|---------|
| Viscount South Access (W) | 24% | | 0% | |
| Viscount South Access (E) | 0% | | 0% | |
| Wonderland East Access (S) | | | 56% | 3% |
| Wonderland East Access (N) | | | 14% | 3% |

APPENDIX D

Intersection Capacity Analysis



EXISTING



CANADA | INDIA | AFRICA | MIDDLE EAST

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-19-2022

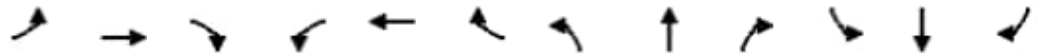


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↕ | ↗ | ↘ | ↕ | ↗ | ↘ | ↕ | ↗ | ↘ | ↕ | ↗ |
| Traffic Volume (vph) | 221 | 452 | 89 | 218 | 276 | 285 | 74 | 927 | 191 | 335 | 907 | 53 |
| Future Volume (vph) | 221 | 452 | 89 | 218 | 276 | 285 | 74 | 927 | 191 | 335 | 907 | 53 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | | 0.97 | 0.99 | | 0.98 | 1.00 | | 0.95 | | 1.00 | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.992 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 3539 | 1455 | 1703 | 3343 | 1568 | 1656 | 3409 | 1497 | 1787 | 3413 | 0 |
| Flt Permitted | 0.508 | | | 0.275 | | | 0.279 | | | 0.124 | | |
| Satd. Flow (perm) | 941 | 3539 | 1418 | 490 | 3343 | 1535 | 486 | 3409 | 1428 | 233 | 3413 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 143 | | | 297 | | | 142 | | | 6 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 242.3 | | | 231.0 | | | 353.5 | | | 276.8 | |
| Travel Time (s) | | 17.4 | | | 16.6 | | | 25.5 | | | 19.9 | |
| Confl. Peds. (#/hr) | 7 | | 10 | 10 | | 7 | 5 | | 25 | 25 | | 5 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 2% | 11% | 6% | 8% | 3% | 9% | 4% | 4% | 1% | 4% | 19% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | 0 |
| Adj. Flow (vph) | 230 | 471 | 93 | 227 | 288 | 297 | 77 | 966 | 199 | 349 | 945 | 55 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 230 | 471 | 93 | 227 | 288 | 297 | 77 | 966 | 199 | 349 | 1000 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.02 | 1.05 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-19-2022

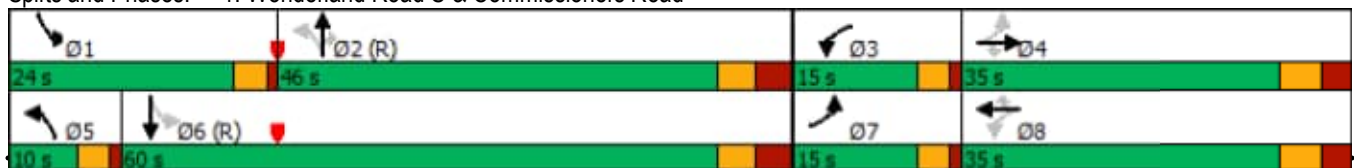


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 | |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 15.0 | 35.0 | 35.0 | 10.0 | 46.0 | 46.0 | 24.0 | 60.0 | |
| Total Split (%) | 12.5% | 29.2% | 29.2% | 12.5% | 29.2% | 29.2% | 8.3% | 38.3% | 38.3% | 20.0% | 50.0% | |
| Maximum Green (s) | 11.0 | 28.4 | 28.4 | 11.0 | 28.4 | 28.4 | 6.0 | 39.3 | 39.3 | 20.0 | 53.3 | |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | |
| Flash Dont Walk (s) | | 20.0 | 20.0 | | 20.0 | 20.0 | | 19.0 | 19.0 | | 19.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | |
| Act Effct Green (s) | 34.9 | 21.3 | 21.3 | 34.9 | 21.3 | 21.3 | 53.3 | 43.3 | 43.3 | 73.1 | 61.0 | |
| Actuated g/C Ratio | 0.29 | 0.18 | 0.18 | 0.29 | 0.18 | 0.18 | 0.44 | 0.36 | 0.36 | 0.61 | 0.51 | |
| v/c Ratio | 0.66 | 0.75 | 0.25 | 0.90 | 0.48 | 0.57 | 0.27 | 0.79 | 0.33 | 0.79 | 0.58 | |
| Control Delay | 41.6 | 54.4 | 3.1 | 69.4 | 46.6 | 9.2 | 14.0 | 36.7 | 8.9 | 37.9 | 23.4 | |
| 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 | 41.6 | 54.4 | 3.1 | 69.4 | 46.6 | 9.2 | 14.0 | 36.7 | 8.9 | 37.9 | 23.4 | |
| LOS | D | D | A | E | D | A | B | D | A | D | C | |
| Approach Delay | | 44.7 | | | 39.3 | | | 30.8 | | | 27.1 | |
| Approach LOS | | D | | | D | | | C | | | C | |

Intersection Summary

| | |
|-----------------------------------|-----------------------------------------------------------------|
| Area Type: | Other |
| Cycle Length: | 120 |
| Actuated Cycle Length: | 120 |
| Offset: | 26 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green |
| Natural Cycle: | 95 |
| Control Type: | Actuated-Coordinated |
| Maximum v/c Ratio: | 0.90 |
| Intersection Signal Delay: | 33.9 |
| Intersection LOS: | C |
| Intersection Capacity Utilization | 89.3% |
| ICU Level of Service | E |
| Analysis Period (min) | 15 |

Splits and Phases: 1: Wonderland Road S & Commissioners Road



EX AM 10:57 am 09-19-2022 Baseline

Timings

1: Wonderland Road S & Commissioners Road

10-19-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↗ | ↘ | ↖ | ↗ | ↘ | ↖ | ↗ | ↘ | ↖ | ↗ |
| Traffic Volume (vph) | 221 | 452 | 89 | 218 | 276 | 285 | 74 | 927 | 191 | 335 | 907 |
| Future Volume (vph) | 221 | 452 | 89 | 218 | 276 | 285 | 74 | 927 | 191 | 335 | 907 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 15.0 | 35.0 | 35.0 | 10.0 | 46.0 | 46.0 | 24.0 | 60.0 |
| Total Split (%) | 12.5% | 29.2% | 29.2% | 12.5% | 29.2% | 29.2% | 8.3% | 38.3% | 38.3% | 20.0% | 50.0% |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effct Green (s) | 34.9 | 21.3 | 21.3 | 34.9 | 21.3 | 21.3 | 53.3 | 43.3 | 43.3 | 73.1 | 61.0 |
| Actuated g/C Ratio | 0.29 | 0.18 | 0.18 | 0.29 | 0.18 | 0.18 | 0.44 | 0.36 | 0.36 | 0.61 | 0.51 |
| v/c Ratio | 0.66 | 0.75 | 0.25 | 0.90 | 0.48 | 0.57 | 0.27 | 0.79 | 0.33 | 0.79 | 0.58 |
| Control Delay | 41.6 | 54.4 | 3.1 | 69.4 | 46.6 | 9.2 | 14.0 | 36.7 | 8.9 | 37.9 | 23.4 |
| 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 | 41.6 | 54.4 | 3.1 | 69.4 | 46.6 | 9.2 | 14.0 | 36.7 | 8.9 | 37.9 | 23.4 |
| LOS | D | D | A | E | D | A | B | D | A | D | C |
| Approach Delay | | 44.7 | | | 39.3 | | | 30.8 | | | 27.1 |
| Approach LOS | | D | | | D | | | C | | | C |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 26 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 33.9

Intersection LOS: C

Intersection Capacity Utilization 89.3%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Queues

1: Wonderland Road S & Commissioners Road

10-19-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|------|-------|------|-------|-------|-------|------|--------|------|--------|-------|
| Lane Group Flow (vph) | 230 | 471 | 93 | 227 | 288 | 297 | 77 | 966 | 199 | 349 | 1000 |
| v/c Ratio | 0.66 | 0.75 | 0.25 | 0.90 | 0.48 | 0.57 | 0.27 | 0.79 | 0.33 | 0.79 | 0.58 |
| Control Delay | 41.6 | 54.4 | 3.1 | 69.4 | 46.6 | 9.2 | 14.0 | 36.7 | 8.9 | 37.9 | 23.4 |
| 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 | 41.6 | 54.4 | 3.1 | 69.4 | 46.6 | 9.2 | 14.0 | 36.7 | 8.9 | 37.9 | 23.4 |
| Queue Length 50th (m) | 44.2 | 59.0 | 0.0 | 43.8 | 34.2 | 0.0 | 6.2 | 129.9 | 15.2 | 54.3 | 90.7 |
| Queue Length 95th (m) | 62.7 | 73.6 | 3.7 | #65.4 | 45.8 | 23.6 | 8.7 | #157.7 | 29.1 | #110.9 | 123.6 |
| Internal Link Dist (m) | | 218.3 | | | 207.0 | | | 329.5 | | | 252.8 |
| Turn Bay Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | |
| Base Capacity (vph) | 349 | 837 | 444 | 253 | 791 | 589 | 287 | 1230 | 606 | 444 | 1738 |
| 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 | 0.66 | 0.56 | 0.21 | 0.90 | 0.36 | 0.50 | 0.27 | 0.79 | 0.33 | 0.79 | 0.58 |

























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Wonderland Road S & Commissioners Road

10-19-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 221 | 452 | 89 | 218 | 276 | 285 | 74 | 927 | 191 | 335 | 907 | 53 |
| Future Volume (vph) | 221 | 452 | 89 | 218 | 276 | 285 | 74 | 927 | 191 | 335 | 907 | 53 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1765 | 3539 | 1418 | 1701 | 3343 | 1535 | 1655 | 3409 | 1428 | 1787 | 3412 | |
| Flt Permitted | 0.51 | 1.00 | 1.00 | 0.27 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 | 0.12 | 1.00 | |
| Satd. Flow (perm) | 944 | 3539 | 1418 | 492 | 3343 | 1535 | 487 | 3409 | 1428 | 234 | 3412 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 230 | 471 | 93 | 227 | 288 | 297 | 77 | 966 | 199 | 349 | 945 | 55 |
| RTOR Reduction (vph) | 0 | 0 | 76 | 0 | 0 | 244 | 0 | 0 | 91 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 230 | 471 | 17 | 227 | 288 | 53 | 77 | 966 | 108 | 349 | 997 | 0 |
| Confl. Peds. (#/hr) | 7 | | 10 | 10 | | 7 | 5 | | 25 | 25 | | 5 |
| Heavy Vehicles (%) | 2% | 2% | 11% | 6% | 8% | 3% | 9% | 4% | 4% | 1% | 4% | 19% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Actuated Green, G (s) | 32.3 | 21.3 | 21.3 | 32.3 | 21.3 | 21.3 | 49.5 | 43.3 | 43.3 | 70.4 | 60.2 | |
| Effective Green, g (s) | 32.3 | 21.3 | 21.3 | 32.3 | 21.3 | 21.3 | 49.5 | 43.3 | 43.3 | 70.4 | 60.2 | |
| Actuated g/C Ratio | 0.27 | 0.18 | 0.18 | 0.27 | 0.18 | 0.18 | 0.41 | 0.36 | 0.36 | 0.59 | 0.50 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 329 | 628 | 251 | 243 | 593 | 272 | 261 | 1230 | 515 | 436 | 1711 | |
| v/s Ratio Prot | 0.06 | 0.13 | | c0.09 | 0.09 | | 0.02 | 0.28 | | c0.15 | 0.29 | |
| v/s Ratio Perm | 0.12 | | 0.01 | c0.17 | | 0.03 | 0.11 | | 0.08 | c0.32 | | |
| v/c Ratio | 0.70 | 0.75 | 0.07 | 0.93 | 0.49 | 0.19 | 0.30 | 0.79 | 0.21 | 0.80 | 0.58 | |
| Uniform Delay, d1 | 37.4 | 46.8 | 41.1 | 39.4 | 44.4 | 42.0 | 21.7 | 34.2 | 26.5 | 27.7 | 21.1 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.93 | 0.89 | 0.77 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 6.4 | 5.0 | 0.1 | 39.8 | 0.6 | 0.3 | 0.6 | 4.8 | 0.9 | 10.1 | 1.5 | |
| Delay (s) | 43.7 | 51.8 | 41.2 | 79.2 | 45.0 | 42.4 | 20.8 | 35.3 | 21.4 | 37.9 | 22.5 | |
| Level of Service | D | D | D | E | D | D | C | D | C | D | C | |
| Approach Delay (s) | | 48.2 | | | 53.6 | | | 32.2 | | | 26.5 | |
| Approach LOS | | D | | | D | | | C | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 37.5 | | | HCM 2000 Level of Service | | | D | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.87 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | Sum of lost time (s) | | | 21.3 | | | |
| Intersection Capacity Utilization | | | 89.3% | | | ICU Level of Service | | | E | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Lanes, Volumes, Timings
2: Wonderland Road S & Village Green Ave

10-19-2022

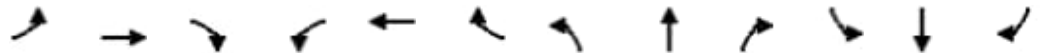


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1117 | 34 | 44 | 1307 | 24 |
| Future Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1117 | 34 | 44 | 1307 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (m) | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Storage Length (m) | 30.0 | | 0.0 | 20.0 | | 0.0 | 35.0 | | 0.0 | 28.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | 0.99 | | 0.99 | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.925 | | | 0.880 | | | 0.996 | | | 0.997 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1636 | 1741 | 0 | 1685 | 1594 | 0 | 1685 | 3360 | 0 | 1652 | 3393 | 0 |
| Flt Permitted | 0.717 | | | 0.723 | | | 0.182 | | | 0.226 | | |
| Satd. Flow (perm) | 1227 | 1741 | 0 | 1274 | 1594 | 0 | 323 | 3360 | 0 | 393 | 3393 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 26 | | | 49 | | | 5 | | | | 3 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | | 50 |
| Link Distance (m) | | 279.4 | | | 195.9 | | | 119.4 | | | | 353.5 |
| Travel Time (s) | | 20.1 | | | 14.1 | | | 8.6 | | | | 25.5 |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 9 | | 16 | 16 | | 19 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 2 | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 17% | 0% | 0% | 5% | 0% | 2% | 4% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 9 | 9 |
| Adj. Flow (vph) | 36 | 26 | 26 | 27 | 12 | 49 | 8 | 1152 | 35 | 45 | 1347 | 25 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 36 | 52 | 0 | 27 | 61 | 0 | 8 | 1187 | 0 | 45 | 1372 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.0 | | | 3.0 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.09 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.02 | 1.00 | 1.09 | 1.02 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |

Lanes, Volumes, Timings

2: Wonderland Road S & Village Green Ave

10-19-2022

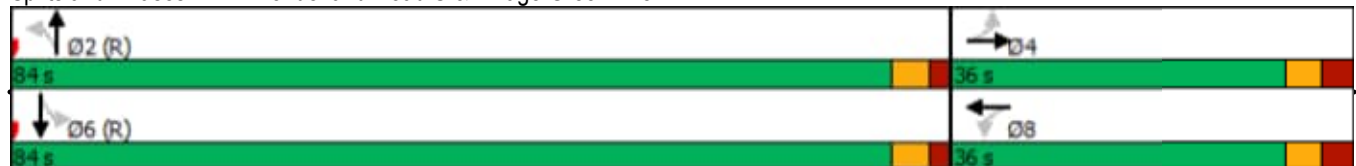


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Detector 2 Type | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 34.6 | 34.6 | | 34.6 | 34.6 | | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (s) | 36.0 | 36.0 | | 36.0 | 36.0 | | 84.0 | 84.0 | | 84.0 | 84.0 | |
| Total Split (%) | 30.0% | 30.0% | | 30.0% | 30.0% | | 70.0% | 70.0% | | 70.0% | 70.0% | |
| Maximum Green (s) | 29.7 | 29.7 | | 29.7 | 29.7 | | 78.6 | 78.6 | | 78.6 | 78.6 | |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 2.1 | 2.1 | | 2.1 | 2.1 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 21.0 | 21.0 | | 21.0 | 21.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 9.3 | 9.3 | | 9.3 | 9.3 | | 102.7 | 102.7 | | 102.7 | 102.7 | |
| Actuated g/C Ratio | 0.08 | 0.08 | | 0.08 | 0.08 | | 0.86 | 0.86 | | 0.86 | 0.86 | |
| v/c Ratio | 0.38 | 0.33 | | 0.27 | 0.36 | | 0.03 | 0.41 | | 0.13 | 0.47 | |
| Control Delay | 63.1 | 35.7 | | 58.0 | 24.6 | | 1.6 | 1.5 | | 2.9 | 2.6 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 63.1 | 35.7 | | 58.0 | 24.6 | | 1.6 | 1.5 | | 2.9 | 2.6 | |
| LOS | E | D | | E | C | | A | A | | A | A | |
| Approach Delay | 46.9 | | | 34.9 | | | 1.5 | | | 2.6 | | |
| Approach LOS | D | | | C | | | A | | | A | | |

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 114 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 4.5
 Intersection Capacity Utilization 57.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

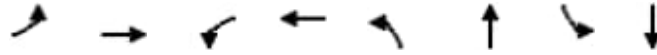
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Timings

2: Wonderland Road S & Village Green Ave

10-19-2022

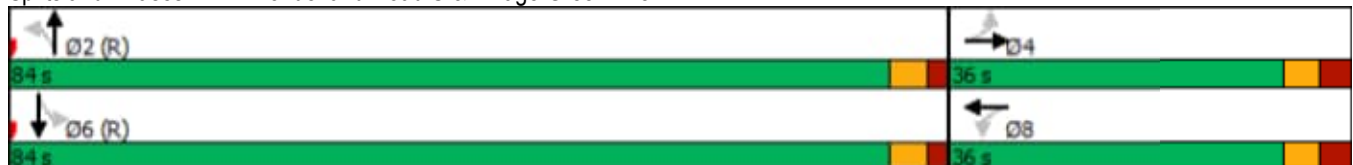


| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↗ | ↖ | ↗ | ↖ | ↗ | ↖ | ↗ |
| Traffic Volume (vph) | 35 | 25 | 26 | 12 | 8 | 1117 | 44 | 1307 |
| Future Volume (vph) | 35 | 25 | 26 | 12 | 8 | 1117 | 44 | 1307 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA |
| Protected Phases | | 4 | | 8 | | 2 | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 34.6 | 34.6 | 34.6 | 34.6 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.1 | 2.1 | 2.1 | 2.1 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 5.4 | 5.4 | 5.4 | 5.4 |
| Lead/Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| Act Effect Green (s) | 9.3 | 9.3 | 9.3 | 9.3 | 102.7 | 102.7 | 102.7 | 102.7 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.08 | 0.08 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.38 | 0.33 | 0.27 | 0.36 | 0.03 | 0.41 | 0.13 | 0.47 |
| Control Delay | 63.1 | 35.7 | 58.0 | 24.6 | 1.6 | 1.5 | 2.9 | 2.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.1 | 35.7 | 58.0 | 24.6 | 1.6 | 1.5 | 2.9 | 2.6 |
| LOS | E | D | E | C | A | A | A | A |
| Approach Delay | | 46.9 | | 34.9 | | 1.5 | | 2.6 |
| Approach LOS | | D | | C | | A | | A |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 114 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.47
 Intersection Signal Delay: 4.5
 Intersection Capacity Utilization 57.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

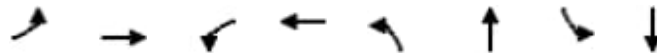
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Queues

2: Wonderland Road S & Village Green Ave

10-19-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|------|-------|------|-------|------|------|------|-------|
| Lane Group Flow (vph) | 36 | 52 | 27 | 61 | 8 | 1187 | 45 | 1372 |
| v/c Ratio | 0.38 | 0.33 | 0.27 | 0.36 | 0.03 | 0.41 | 0.13 | 0.47 |
| Control Delay | 63.1 | 35.7 | 58.0 | 24.6 | 1.6 | 1.5 | 2.9 | 2.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.1 | 35.7 | 58.0 | 24.6 | 1.6 | 1.5 | 2.9 | 2.6 |
| Queue Length 50th (m) | 8.7 | 6.2 | 6.5 | 2.8 | 0.0 | 2.2 | 1.4 | 25.2 |
| Queue Length 95th (m) | 19.5 | 18.6 | 15.9 | 16.2 | m0.6 | 20.8 | m3.0 | 42.7 |
| Internal Link Dist (m) | | 255.4 | | 171.9 | | 95.4 | | 329.5 |
| Turn Bay Length (m) | 30.0 | | 20.0 | | 35.0 | | 28.0 | |
| Base Capacity (vph) | 303 | 450 | 315 | 431 | 276 | 2876 | 336 | 2904 |
| 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 | 0.12 | 0.12 | 0.09 | 0.14 | 0.03 | 0.41 | 0.13 | 0.47 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Wonderland Road S & Village Green Ave

10-19-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|------|------|------|------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | |
| Traffic Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1117 | 34 | 44 | 1307 | 24 |
| Future Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1117 | 34 | 44 | 1307 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Total Lost time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 0.93 | | 1.00 | 0.88 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1626 | 1738 | | 1675 | 1593 | | 1678 | 3358 | | 1636 | 3394 | |
| Flt Permitted | 0.72 | 1.00 | | 0.72 | 1.00 | | 0.18 | 1.00 | | 0.23 | 1.00 | |
| Satd. Flow (perm) | 1228 | 1738 | | 1275 | 1593 | | 322 | 3358 | | 389 | 3394 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 36 | 26 | 26 | 27 | 12 | 49 | 8 | 1152 | 35 | 45 | 1347 | 25 |
| RTOR Reduction (vph) | 0 | 24 | 0 | 0 | 46 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 36 | 28 | 0 | 27 | 15 | 0 | 8 | 1186 | 0 | 45 | 1372 | 0 |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 9 | | 16 | 16 | | 19 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 2 | | | |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 17% | 0% | 0% | 5% | 0% | 2% | 4% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 9 | 9 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 7.9 | 7.9 | | 7.9 | 7.9 | | 100.4 | 100.4 | | 100.4 | 100.4 | |
| Effective Green, g (s) | 7.9 | 7.9 | | 7.9 | 7.9 | | 100.4 | 100.4 | | 100.4 | 100.4 | |
| Actuated g/C Ratio | 0.07 | 0.07 | | 0.07 | 0.07 | | 0.84 | 0.84 | | 0.84 | 0.84 | |
| Clearance Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 80 | 114 | | 83 | 104 | | 269 | 2809 | | 325 | 2839 | |
| v/s Ratio Prot | | 0.02 | | | 0.01 | | | 0.35 | | | c0.40 | |
| v/s Ratio Perm | c0.03 | | | 0.02 | | | 0.02 | | | 0.12 | | |
| v/c Ratio | 0.45 | 0.24 | | 0.33 | 0.15 | | 0.03 | 0.42 | | 0.14 | 0.48 | |
| Uniform Delay, d1 | 54.0 | 53.2 | | 53.5 | 52.9 | | 1.6 | 2.5 | | 1.8 | 2.7 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.60 | 0.38 | | 0.83 | 0.71 | |
| Incremental Delay, d2 | 4.0 | 1.1 | | 2.3 | 0.7 | | 0.2 | 0.4 | | 0.8 | 0.5 | |
| Delay (s) | 57.9 | 54.3 | | 55.8 | 53.5 | | 1.2 | 1.4 | | 2.3 | 2.4 | |
| Level of Service | E | D | | E | D | | A | A | | A | A | |
| Approach Delay (s) | | 55.8 | | | 54.2 | | | 1.4 | | | 2.4 | |
| Approach LOS | | E | | | D | | | A | | | A | |

Intersection Summary

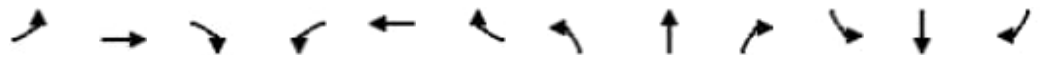
| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 5.3 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.48 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 11.7 |
| Intersection Capacity Utilization | 57.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings

3: Wonderland Road S & Mall Access East (N)/Private Access

10-19-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 3 | 0 | 9 | 6 | 0 | 24 | 18 | 1043 | 2 | 15 | 1229 | 76 |
| Future Volume (vph) | 3 | 0 | 9 | 6 | 0 | 24 | 18 | 1043 | 2 | 15 | 1229 | 76 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 50.0 | | 0.0 | 30.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.894 | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.990 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 0 | 1214 | 0 | 1630 | 0 | 1805 | 3438 | 0 | 1805 | 3471 | 1568 |
| Flt Permitted | 0.950 | | | | 0.990 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 0 | 1214 | 0 | 1630 | 0 | 1805 | 3438 | 0 | 1805 | 3471 | 1568 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | 50 | |
| Link Distance (m) | | 100.3 | | | 66.2 | | | 161.3 | | | 119.4 | |
| Travel Time (s) | | 18.1 | | | 11.9 | | | 11.6 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 11 | | 24 | 24 | | 11 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 33% | 0% | 0% | 4% | 0% | 5% | 0% | 0% | 4% | 3% |
| Adj. Flow (vph) | 3 | 0 | 10 | 7 | 0 | 26 | 20 | 1134 | 2 | 16 | 1336 | 83 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 3 | 0 | 10 | 0 | 33 | 0 | 20 | 1136 | 0 | 16 | 1336 | 83 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 50.6% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

3: Wonderland Road S & Mall Access East (N)/Private Access

10-19-2022

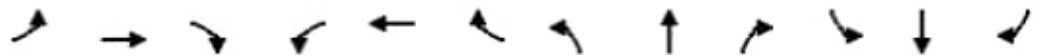


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|------|----------------------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 0 | 9 | 6 | 0 | 24 | 18 | 1043 | 2 | 15 | 1229 | 76 |
| Future Volume (Veh/h) | 3 | 0 | 9 | 6 | 0 | 24 | 18 | 1043 | 2 | 15 | 1229 | 76 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 3 | 0 | 10 | 7 | 0 | 26 | 20 | 1134 | 2 | 16 | 1336 | 83 |
| Pedestrians | 11 | | | 24 | | | | | | | | |
| Lane Width (m) | 3.6 | | | 3.6 | | | | | | | | |
| Walking Speed (m/s) | 1.2 | | | 1.2 | | | | | | | | |
| Percent Blockage | 1 | | | 2 | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | 161 | | | 119 | | |
| pX, platoon unblocked | 0.94 | 0.94 | 0.89 | 0.94 | 0.94 | 0.91 | 0.89 | | | | 0.91 | |
| vC, conflicting volume | 2012 | 2579 | 679 | 1909 | 2661 | 592 | 1430 | | | | 1160 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1516 | 2121 | 399 | 1406 | 2209 | 355 | 1240 | | | | 979 | |
| tC, single (s) | 7.5 | 6.5 | 7.6 | 7.5 | 6.5 | 7.0 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.6 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 96 | 100 | 98 | 92 | 100 | 95 | 96 | | | | 97 | |
| cM capacity (veh/h) | 69 | 43 | 461 | 84 | 38 | 567 | 502 | | | | 636 | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | SB 4 | | |
| Volume Total | 3 | 10 | 33 | 20 | 756 | 380 | 16 | 668 | 668 | 83 | | |
| Volume Left | 3 | 0 | 7 | 20 | 0 | 0 | 16 | 0 | 0 | 0 | | |
| Volume Right | 0 | 10 | 26 | 0 | 0 | 2 | 0 | 0 | 0 | 83 | | |
| cSH | 69 | 461 | 256 | 502 | 1700 | 1700 | 636 | 1700 | 1700 | 1700 | | |
| Volume to Capacity | 0.04 | 0.02 | 0.13 | 0.04 | 0.44 | 0.22 | 0.03 | 0.39 | 0.39 | 0.05 | | |
| Queue Length 95th (m) | 1.1 | 0.5 | 3.5 | 1.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | | |
| Control Delay (s) | 59.6 | 13.0 | 21.1 | 12.5 | 0.0 | 0.0 | 10.8 | 0.0 | 0.0 | 0.0 | | |
| Lane LOS | F | B | C | B | | | | B | | | | |
| Approach Delay (s) | 23.8 | 21.1 | | 0.2 | | | | 0.1 | | | | |
| Approach LOS | C | C | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 0.5 | | | | | | | | | | | |
| Intersection Capacity Utilization | 50.6% | | ICU Level of Service | | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-19-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↗ | | ↔ | | ↗ | ↕ | | ↗ | ↕ | ↗ |
| Traffic Volume (vph) | 51 | 1 | 11 | 6 | 1 | 8 | 11 | 1063 | 5 | 8 | 1157 | 75 |
| Future Volume (vph) | 51 | 1 | 11 | 6 | 1 | 8 | 11 | 1063 | 5 | 8 | 1157 | 75 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 35.0 | | 0.0 | 40.0 | | 35.0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | 1.00 | 0.98 | | 0.99 | | 1.00 | 1.00 | | 0.99 | | 0.98 |
| Frt | | | 0.850 | | 0.929 | | | 0.999 | | | | 0.850 |
| Flt Protected | | 0.953 | | | 0.980 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1539 | 1482 | 0 | 1715 | 0 | 1656 | 3434 | 0 | 1805 | 3471 | 1512 |
| Flt Permitted | | 0.718 | | | 0.846 | | 0.202 | | | 0.226 | | |
| Satd. Flow (perm) | 0 | 1154 | 1446 | 0 | 1473 | 0 | 352 | 3434 | 0 | 424 | 3471 | 1475 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 25 | | 9 | | | 1 | | | | 53 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | | 50 |
| Link Distance (m) | | 105.0 | | | 57.0 | | | 158.8 | | | | 161.3 |
| Travel Time (s) | | 18.9 | | | 10.3 | | | 11.4 | | | | 11.6 |
| Confl. Peds. (#/hr) | 3 | | 9 | 9 | | 3 | 9 | | 37 | 37 | | 9 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 18% | 0% | 9% | 0% | 0% | 0% | 9% | 5% | 0% | 0% | 4% | 3% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Adj. Flow (vph) | 56 | 1 | 12 | 7 | 1 | 9 | 12 | 1168 | 5 | 9 | 1271 | 82 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 57 | 12 | 0 | 17 | 0 | 12 | 1173 | 0 | 9 | 1271 | 82 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.05 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-19-2022

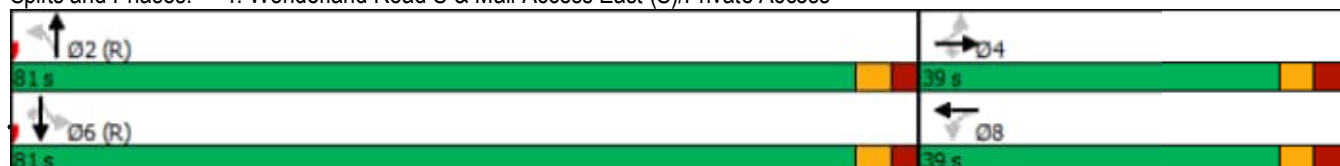


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | | 28.7 | 28.7 | | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | | 81.0 | 81.0 | | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 32.5% | 32.5% | 32.5% | 32.5% | | 67.5% | 67.5% | | 67.5% | 67.5% | 67.5% |
| Maximum Green (s) | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | | 75.3 | 75.3 | | 75.3 | 75.3 | 75.3 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 19.0 | 19.0 | 19.0 | 16.0 | 16.0 | | 16.0 | 16.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | | 11.4 | 11.4 | | 11.4 | | 100.1 | 100.1 | | 100.1 | 100.1 | 100.1 |
| Actuated g/C Ratio | | 0.10 | 0.10 | | 0.10 | | 0.83 | 0.83 | | 0.83 | 0.83 | 0.83 |
| v/c Ratio | | 0.52 | 0.08 | | 0.12 | | 0.04 | 0.41 | | 0.03 | 0.44 | 0.07 |
| Control Delay | | 67.8 | 7.8 | | 33.1 | | 2.1 | 2.2 | | 1.6 | 1.6 | 0.2 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.1 | 0.0 |
| Total Delay | | 67.8 | 7.8 | | 33.1 | | 2.1 | 2.3 | | 1.6 | 1.7 | 0.2 |
| LOS | | E | A | | C | | A | A | | A | A | A |
| Approach Delay | | 57.3 | | | 33.1 | | | 2.3 | | | 1.6 | |
| Approach LOS | | E | | | C | | | A | | | A | |

Intersection Summary

| | |
|------------------------------------|-----------------------------------------------------------------|
| Area Type: | Other |
| Cycle Length: | 120 |
| Actuated Cycle Length: | 120 |
| Offset: | 63 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green |
| Natural Cycle: | 65 |
| Control Type: | Actuated-Coordinated |
| Maximum v/c Ratio: | 0.52 |
| Intersection Signal Delay: | 3.6 |
| Intersection LOS: | A |
| Intersection Capacity Utilization: | 64.9% |
| ICU Level of Service: | C |
| Analysis Period (min): | 15 |

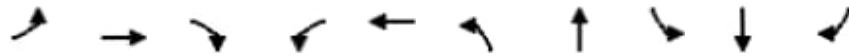
Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-19-2022

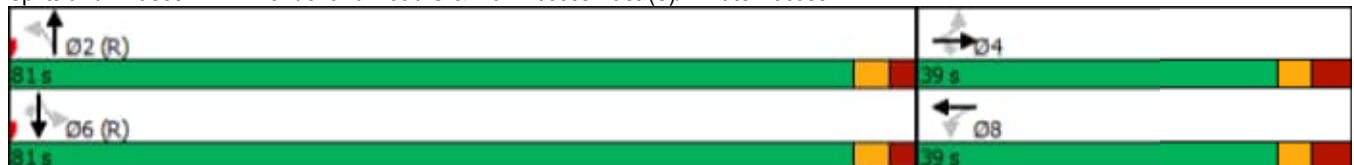


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↔ | | ↔ | ↔ | ↔ | ↔ | ↔ | ↔ |
| Traffic Volume (vph) | 51 | 1 | 11 | 6 | 1 | 11 | 1063 | 8 | 1157 | 75 |
| Future Volume (vph) | 51 | 1 | 11 | 6 | 1 | 11 | 1063 | 8 | 1157 | 75 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | 28.7 | 28.7 | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 32.5% | 32.5% | 32.5% | 32.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | | 11.4 | 11.4 | | 11.4 | 100.1 | 100.1 | 100.1 | 100.1 | 100.1 |
| Actuated g/C Ratio | | 0.10 | 0.10 | | 0.10 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| v/c Ratio | | 0.52 | 0.08 | | 0.12 | 0.04 | 0.41 | 0.03 | 0.44 | 0.07 |
| Control Delay | | 67.8 | 7.8 | | 33.1 | 2.1 | 2.2 | 1.6 | 1.6 | 0.2 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Delay | | 67.8 | 7.8 | | 33.1 | 2.1 | 2.3 | 1.6 | 1.7 | 0.2 |
| LOS | | E | A | | C | A | A | A | A | A |
| Approach Delay | | 57.3 | | | 33.1 | | 2.3 | | 1.6 | |
| Approach LOS | | E | | | C | | A | | A | |

Intersection Summary

| | |
|-------------------------------------------------------------------------|------------------------|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 63 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.52 | |
| Intersection Signal Delay: 3.6 | Intersection LOS: A |
| Intersection Capacity Utilization 64.9% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Queues

4: Wonderland Road S & Mall Access East (S)/Private Access

10-19-2022



| Lane Group | EBT | EBR | WBT | NBL | NBT | SBL | SBT | SBR |
|------------------------|------|------|------|------|-------|------|-------|------|
| Lane Group Flow (vph) | 57 | 12 | 17 | 12 | 1173 | 9 | 1271 | 82 |
| v/c Ratio | 0.52 | 0.08 | 0.12 | 0.04 | 0.41 | 0.03 | 0.44 | 0.07 |
| Control Delay | 67.8 | 7.8 | 33.1 | 2.1 | 2.2 | 1.6 | 1.6 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Delay | 67.8 | 7.8 | 33.1 | 2.1 | 2.3 | 1.6 | 1.7 | 0.2 |
| Queue Length 50th (m) | 13.7 | 0.0 | 1.8 | 0.3 | 23.0 | 0.1 | 12.1 | 0.0 |
| Queue Length 95th (m) | 27.2 | 3.1 | 8.9 | m0.8 | 27.0 | m0.5 | 20.2 | 0.7 |
| Internal Link Dist (m) | 81.0 | | 33.0 | | 134.8 | | 137.3 | |
| Turn Bay Length (m) | | | | 35.0 | | 40.0 | | 35.0 |
| Base Capacity (vph) | 310 | 407 | 403 | 293 | 2865 | 353 | 2896 | 1239 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 246 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 377 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.03 | 0.04 | 0.04 | 0.45 | 0.03 | 0.50 | 0.07 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: Wonderland Road S & Mall Access East (S)/Private Access

10-19-2022



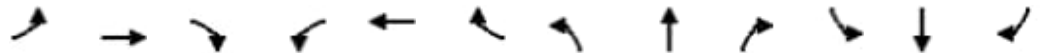
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations | | ↔ | ↔ | | ↔ | | ↔ | ↔ | | ↔ | ↔ | ↔ |
| Traffic Volume (vph) | 51 | 1 | 11 | 6 | 1 | 8 | 11 | 1063 | 5 | 8 | 1157 | 75 |
| Future Volume (vph) | 51 | 1 | 11 | 6 | 1 | 8 | 11 | 1063 | 5 | 8 | 1157 | 75 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frbp, ped/bikes | | 1.00 | 0.98 | | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | 1.00 |
| Frt | | 1.00 | 0.85 | | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | | 0.98 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1532 | 1446 | | 1705 | | 1653 | 3435 | | 1775 | 3471 | 1475 |
| Flt Permitted | | 0.72 | 1.00 | | 0.85 | | 0.20 | 1.00 | | 0.23 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1153 | 1446 | | 1473 | | 351 | 3435 | | 423 | 3471 | 1475 |
| Peak-hour factor, PHF | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 56 | 1 | 12 | 7 | 1 | 9 | 12 | 1168 | 5 | 9 | 1271 | 82 |
| RTOR Reduction (vph) | 0 | 0 | 11 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| Lane Group Flow (vph) | 0 | 57 | 1 | 0 | 9 | 0 | 12 | 1173 | 0 | 9 | 1271 | 72 |
| Confl. Peds. (#/hr) | 3 | | 9 | 9 | | 3 | 9 | | 37 | 37 | | 9 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Heavy Vehicles (%) | 18% | 0% | 9% | 0% | 0% | 0% | 9% | 5% | 0% | 0% | 4% | 3% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Actuated Green, G (s) | | 10.0 | 10.0 | | 10.0 | | 97.6 | 97.6 | | 97.6 | 97.6 | 97.6 |
| Effective Green, g (s) | | 10.0 | 10.0 | | 10.0 | | 97.6 | 97.6 | | 97.6 | 97.6 | 97.6 |
| Actuated g/C Ratio | | 0.08 | 0.08 | | 0.08 | | 0.81 | 0.81 | | 0.81 | 0.81 | 0.81 |
| Clearance Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 96 | 120 | | 122 | | 285 | 2793 | | 344 | 2823 | 1199 |
| v/s Ratio Prot | | | | | | | | 0.34 | | | c0.37 | |
| v/s Ratio Perm | | c0.05 | 0.00 | | 0.01 | | 0.03 | | | 0.02 | | 0.05 |
| v/c Ratio | | 0.59 | 0.01 | | 0.07 | | 0.04 | 0.42 | | 0.03 | 0.45 | 0.06 |
| Uniform Delay, d1 | | 53.0 | 50.5 | | 50.7 | | 2.2 | 3.2 | | 2.1 | 3.3 | 2.2 |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.58 | 0.52 | | 0.47 | 0.31 | 0.09 |
| Incremental Delay, d2 | | 9.5 | 0.0 | | 0.3 | | 0.2 | 0.4 | | 0.1 | 0.5 | 0.1 |
| Delay (s) | | 62.5 | 50.5 | | 51.0 | | 1.5 | 2.1 | | 1.1 | 1.5 | 0.3 |
| Level of Service | | E | D | | D | | A | A | | A | A | A |
| Approach Delay (s) | | 60.4 | | | 51.0 | | | 2.1 | | | 1.4 | |
| Approach LOS | | E | | | D | | | A | | | A | |

| Intersection Summary | | |
|-----------------------------------|-------|---------------------------|
| HCM 2000 Control Delay | 3.6 | HCM 2000 Level of Service |
| HCM 2000 Volume to Capacity ratio | 0.46 | A |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) |
| Intersection Capacity Utilization | 64.9% | 12.4 |
| Analysis Period (min) | 15 | ICU Level of Service |
| | | C |

c Critical Lane Group

Lanes, Volumes, Timings
5: Wonderland Road S & Viscount Rd

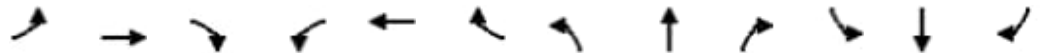
10-19-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 153 | 131 | 155 | 71 | 159 | 86 | 139 | 814 | 42 | 60 | 972 | 147 |
| Future Volume (vph) | 153 | 131 | 155 | 71 | 159 | 86 | 139 | 814 | 42 | 60 | 972 | 147 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 40.0 | | 95.0 | 30.0 | | 30.0 | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | 0.98 | | 0.89 | 0.93 | 0.99 | | | | 0.89 | 0.98 | | 0.95 |
| Frt | | | 0.850 | | 0.947 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1881 | 1567 | 1736 | 3216 | 0 | 1752 | 3406 | 1509 | 1719 | 3505 | 1468 |
| Flt Permitted | 0.577 | | | 0.523 | | | 0.136 | | | 0.246 | | |
| Satd. Flow (perm) | 1056 | 1881 | 1398 | 885 | 3216 | 0 | 251 | 3406 | 1340 | 437 | 3505 | 1397 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 180 | | 99 | | | | 105 | | | 105 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 157.9 | | | 309.4 | | | 1206.3 | | | 158.8 | |
| Travel Time (s) | | 11.4 | | | 22.3 | | | 86.9 | | | 11.4 | |
| Confl. Peds. (#/hr) | 26 | | 98 | 98 | | 26 | 28 | | 44 | 44 | | 28 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 2 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 4% | 7% | 1% | 3% | 6% | 7% | 5% | 3% | 10% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 178 | 152 | 180 | 83 | 185 | 100 | 162 | 947 | 49 | 70 | 1130 | 171 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 178 | 152 | 180 | 83 | 285 | 0 | 162 | 947 | 49 | 70 | 1130 | 171 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.03 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings
5: Wonderland Road S & Viscount Rd

10-19-2022

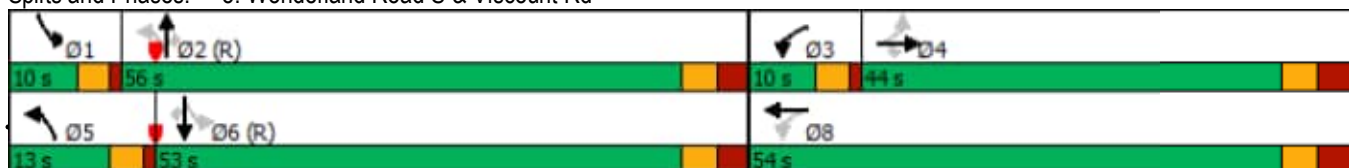


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | | 13.0 | 56.0 | 56.0 | 10.0 | 53.0 | 53.0 |
| Total Split (%) | 36.7% | 36.7% | 36.7% | 8.3% | 45.0% | | 10.8% | 46.7% | 46.7% | 8.3% | 44.2% | 44.2% |
| Maximum Green (s) | 37.5 | 37.5 | 37.5 | 6.0 | 47.5 | | 9.0 | 50.0 | 50.0 | 6.0 | 47.0 | 47.0 |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | None | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | 7.0 | | | 7.0 | 7.0 | | 7.0 | 7.0 |
| Flash Dont Walk (s) | 29.0 | 29.0 | 29.0 | | 29.0 | | | 21.0 | 21.0 | | 21.0 | 21.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | 0 | | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 25.7 | 25.7 | 25.7 | 36.2 | 33.7 | | 75.5 | 64.7 | 64.7 | 68.1 | 59.1 | 59.1 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | 0.30 | 0.28 | | 0.63 | 0.54 | 0.54 | 0.57 | 0.49 | 0.49 |
| v/c Ratio | 0.79 | 0.38 | 0.41 | 0.27 | 0.29 | | 0.55 | 0.52 | 0.06 | 0.22 | 0.66 | 0.23 |
| Control Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | | 27.4 | 19.5 | 1.0 | 13.1 | 26.6 | 8.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | | 27.4 | 19.5 | 1.0 | 13.1 | 26.8 | 8.4 |
| LOS | E | D | A | C | C | | C | B | A | B | C | A |
| Approach Delay | | 37.5 | | | 22.5 | | | 19.8 | | | 23.9 | |
| Approach LOS | | D | | | C | | | B | | | C | |

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 75 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 24.4
 Intersection LOS: C
 Intersection Capacity Utilization 84.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Timings

5: Wonderland Road S & Viscount Rd

10-19-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↶ | ↴ | ↷ | ↶ | ↴↴ | ↶ | ↴↴ | ↷ | ↶ | ↴↴ | ↷ |
| Traffic Volume (vph) | 153 | 131 | 155 | 71 | 159 | 139 | 814 | 42 | 60 | 972 | 147 |
| Future Volume (vph) | 153 | 131 | 155 | 71 | 159 | 139 | 814 | 42 | 60 | 972 | 147 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | 13.0 | 56.0 | 56.0 | 10.0 | 53.0 | 53.0 |
| Total Split (%) | 36.7% | 36.7% | 36.7% | 8.3% | 45.0% | 10.8% | 46.7% | 46.7% | 8.3% | 44.2% | 44.2% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 25.7 | 25.7 | 25.7 | 36.2 | 33.7 | 75.5 | 64.7 | 64.7 | 68.1 | 59.1 | 59.1 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | 0.30 | 0.28 | 0.63 | 0.54 | 0.54 | 0.57 | 0.49 | 0.49 |
| v/c Ratio | 0.79 | 0.38 | 0.41 | 0.27 | 0.29 | 0.55 | 0.52 | 0.06 | 0.22 | 0.66 | 0.23 |
| Control Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | 27.4 | 19.5 | 1.0 | 13.1 | 26.6 | 8.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | 27.4 | 19.5 | 1.0 | 13.1 | 26.8 | 8.4 |
| LOS | E | D | A | C | C | C | B | A | B | C | A |
| Approach Delay | | 37.5 | | | 22.5 | | 19.8 | | | 23.9 | |
| Approach LOS | | D | | | C | | B | | | C | |

Intersection Summary

| | |
|-------------------------------------------------------------------------|------------------------|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 75 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.79 | |
| Intersection Signal Delay: 24.4 | Intersection LOS: C |
| Intersection Capacity Utilization 84.9% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Queues

5: Wonderland Road S & Viscount Rd

10-19-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|-------|------|------|-------|-------|--------|------|------|-------|------|
| Lane Group Flow (vph) | 178 | 152 | 180 | 83 | 285 | 162 | 947 | 49 | 70 | 1130 | 171 |
| v/c Ratio | 0.79 | 0.38 | 0.41 | 0.27 | 0.29 | 0.55 | 0.52 | 0.06 | 0.22 | 0.66 | 0.23 |
| Control Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | 27.4 | 19.5 | 1.0 | 13.1 | 26.6 | 8.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | 27.4 | 19.5 | 1.0 | 13.1 | 26.8 | 8.4 |
| Queue Length 50th (m) | 43.3 | 32.9 | 2.6 | 14.7 | 18.1 | 15.9 | 68.3 | 0.0 | 5.4 | 140.4 | 6.3 |
| Queue Length 95th (m) | m59.8 | m43.7 | m7.9 | 22.4 | 24.0 | m46.3 | 97.8 | m0.7 | 9.8 | 165.7 | 13.0 |
| Internal Link Dist (m) | | 133.9 | | | 285.4 | | 1182.3 | | | 134.8 | |
| Turn Bay Length (m) | 40.0 | | 95.0 | 30.0 | | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Base Capacity (vph) | 330 | 587 | 560 | 309 | 1332 | 295 | 1837 | 771 | 323 | 1725 | 740 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 129 | 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 | 0.54 | 0.26 | 0.32 | 0.27 | 0.21 | 0.55 | 0.52 | 0.06 | 0.22 | 0.71 | 0.23 |
























Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

5: Wonderland Road S & Viscount Rd

10-19-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 153 | 131 | 155 | 71 | 159 | 86 | 139 | 814 | 42 | 60 | 972 | 147 |
| Future Volume (vph) | 153 | 131 | 155 | 71 | 159 | 86 | 139 | 814 | 42 | 60 | 972 | 147 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.89 | 1.00 | 0.99 | | 1.00 | 1.00 | 0.89 | 1.00 | 1.00 | 0.95 |
| Flpb, ped/bikes | 0.98 | 1.00 | 1.00 | 0.96 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1739 | 1881 | 1398 | 1673 | 3217 | | 1752 | 3406 | 1340 | 1712 | 3505 | 1398 |
| Flt Permitted | 0.58 | 1.00 | 1.00 | 0.52 | 1.00 | | 0.14 | 1.00 | 1.00 | 0.25 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1056 | 1881 | 1398 | 920 | 3217 | | 252 | 3406 | 1340 | 443 | 3505 | 1398 |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Adj. Flow (vph) | 178 | 152 | 180 | 83 | 185 | 100 | 162 | 947 | 49 | 70 | 1130 | 171 |
| RTOR Reduction (vph) | 0 | 0 | 141 | 0 | 71 | 0 | 0 | 0 | 23 | 0 | 0 | 54 |
| Lane Group Flow (vph) | 178 | 152 | 39 | 83 | 214 | 0 | 162 | 947 | 26 | 70 | 1130 | 117 |
| Confl. Peds. (#/hr) | 26 | | 98 | 98 | | 26 | 28 | | 44 | 44 | | 28 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 2 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 4% | 7% | 1% | 3% | 6% | 7% | 5% | 3% | 10% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Actuated Green, G (s) | 25.7 | 25.7 | 25.7 | 34.5 | 34.5 | | 73.0 | 63.1 | 63.1 | 64.1 | 58.2 | 58.2 |
| Effective Green, g (s) | 25.7 | 25.7 | 25.7 | 34.5 | 34.5 | | 73.0 | 63.1 | 63.1 | 64.1 | 58.2 | 58.2 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | 0.29 | 0.29 | | 0.61 | 0.53 | 0.53 | 0.53 | 0.49 | 0.49 |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 226 | 402 | 299 | 294 | 924 | | 288 | 1790 | 704 | 299 | 1699 | 678 |
| v/s Ratio Prot | | 0.08 | | c0.01 | 0.07 | | c0.05 | 0.28 | | 0.01 | c0.32 | |
| v/s Ratio Perm | c0.17 | | 0.03 | 0.07 | | | 0.29 | | 0.02 | 0.11 | | 0.08 |
| v/c Ratio | 0.79 | 0.38 | 0.13 | 0.28 | 0.23 | | 0.56 | 0.53 | 0.04 | 0.23 | 0.67 | 0.17 |
| Uniform Delay, d1 | 44.6 | 40.3 | 38.1 | 32.2 | 32.6 | | 15.3 | 18.7 | 13.8 | 14.1 | 23.5 | 17.4 |
| Progression Factor | 0.97 | 0.96 | 1.26 | 1.00 | 1.00 | | 1.76 | 0.89 | 1.00 | 1.00 | 0.96 | 0.84 |
| Incremental Delay, d2 | 15.9 | 0.6 | 0.2 | 0.5 | 0.1 | | 2.4 | 1.1 | 0.1 | 0.4 | 1.9 | 0.5 |
| Delay (s) | 59.0 | 39.2 | 48.3 | 32.8 | 32.8 | | 29.3 | 17.7 | 13.8 | 14.5 | 24.5 | 15.1 |
| Level of Service | E | D | D | C | C | | C | B | B | B | C | B |
| Approach Delay (s) | | 49.3 | | | 32.8 | | | 19.2 | | | 22.9 | |
| Approach LOS | | D | | | C | | | B | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | 26.6 | | | HCM 2000 Level of Service | | | | C | | | | |
| HCM 2000 Volume to Capacity ratio | 0.67 | | | | | | | | | | | |
| Actuated Cycle Length (s) | 120.0 | | | Sum of lost time (s) | | | | 20.5 | | | | |
| Intersection Capacity Utilization | 84.9% | | | ICU Level of Service | | | | E | | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
6: Wonderland Road S & Southdale Road W

10-19-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Lane Configurations | ↘ | ↗↗ | ↘ | ↘ | ↗↗ | | ↘ | ↗↗ | | ↘ | ↗↗ | |
| Traffic Volume (vph) | 99 | 314 | 37 | 72 | 218 | 223 | 56 | 491 | 27 | 318 | 717 | 55 |
| Future Volume (vph) | 99 | 314 | 37 | 72 | 218 | 223 | 56 | 491 | 27 | 318 | 717 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 35.0 | | 35.0 | 80.0 | | 0.0 | 75.0 | | 0.0 | 35.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | | 0.97 | 0.99 | 0.98 | | 0.99 | 1.00 | | 0.99 | 1.00 | |
| Frt | | | 0.850 | | 0.924 | | | 0.992 | | | 0.989 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1736 | 3574 | 1417 | 1736 | 3112 | 0 | 1583 | 3190 | 0 | 1719 | 3430 | 0 |
| Flt Permitted | 0.215 | | | 0.408 | | | 0.330 | | | 0.360 | | |
| Satd. Flow (perm) | 389 | 3574 | 1378 | 739 | 3112 | 0 | 547 | 3190 | 0 | 644 | 3430 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 137 | | 225 | | | 4 | | | 8 | |
| Link Speed (k/h) | | 60 | | | 60 | | | 60 | | | 60 | |
| Link Distance (m) | | 446.9 | | | 385.1 | | | 438.6 | | | 1206.3 | |
| Travel Time (s) | | 26.8 | | | 23.1 | | | 26.3 | | | 72.4 | |
| Confl. Peds. (#/hr) | 17 | | 14 | 14 | | 17 | 15 | | 27 | 27 | | 15 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 1% | 14% | 4% | 4% | 7% | 14% | 11% | 30% | 5% | 3% | 15% |
| Adj. Flow (vph) | 110 | 349 | 41 | 80 | 242 | 248 | 62 | 546 | 30 | 353 | 797 | 61 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 110 | 349 | 41 | 80 | 490 | 0 | 62 | 576 | 0 | 353 | 858 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |

Lanes, Volumes, Timings

6: Wonderland Road S & Southdale Road W

10-19-2022

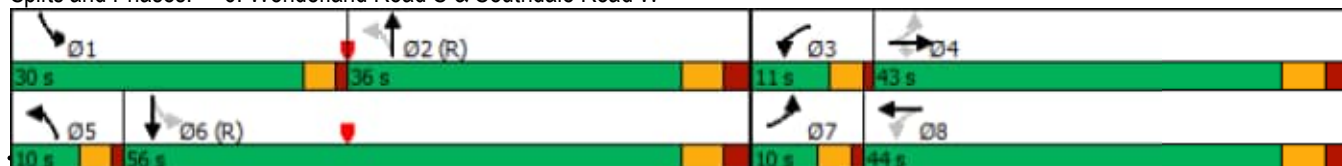


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | | 9.0 | 35.1 | | 9.0 | 35.1 | |
| Total Split (s) | 10.0 | 43.0 | 43.0 | 11.0 | 44.0 | | 10.0 | 36.0 | | 30.0 | 56.0 | |
| Total Split (%) | 8.3% | 35.8% | 35.8% | 9.2% | 36.7% | | 8.3% | 30.0% | | 25.0% | 46.7% | |
| Maximum Green (s) | 6.0 | 36.4 | 36.4 | 7.0 | 37.4 | | 6.0 | 29.9 | | 26.0 | 49.9 | |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | | 3.0 | 3.7 | | 3.0 | 3.7 | |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | | 1.0 | 2.4 | | 1.0 | 2.4 | |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | C-Max | | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 25.0 | 25.0 | | 25.0 | | | 22.0 | | | 22.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 26.0 | 18.6 | 18.6 | 26.9 | 17.4 | | 67.3 | 58.1 | | 82.0 | 70.7 | |
| Actuated g/C Ratio | 0.22 | 0.16 | 0.16 | 0.22 | 0.14 | | 0.56 | 0.48 | | 0.68 | 0.59 | |
| v/c Ratio | 0.73 | 0.63 | 0.12 | 0.36 | 0.76 | | 0.17 | 0.37 | | 0.59 | 0.42 | |
| Control Delay | 63.8 | 52.9 | 0.8 | 38.7 | 33.9 | | 9.9 | 22.2 | | 21.5 | 8.0 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 63.8 | 52.9 | 0.8 | 38.7 | 33.9 | | 9.9 | 22.2 | | 21.5 | 8.0 | |
| LOS | E | D | A | D | C | | A | C | | C | A | |
| Approach Delay | | 51.0 | | | 34.6 | | | 21.0 | | | 12.0 | |
| Approach LOS | | D | | | C | | | C | | | B | |

Intersection Summary

| | |
|------------------------------------|-----------------------------------------------------------------|
| Area Type: | Other |
| Cycle Length: | 120 |
| Actuated Cycle Length: | 120 |
| Offset: | 34 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green |
| Natural Cycle: | 95 |
| Control Type: | Actuated-Coordinated |
| Maximum v/c Ratio: | 0.76 |
| Intersection Signal Delay: | 25.0 |
| Intersection LOS: | C |
| Intersection Capacity Utilization: | 84.0% |
| ICU Level of Service: | E |
| Analysis Period (min): | 15 |

Splits and Phases: 6: Wonderland Road S & Southdale Road W

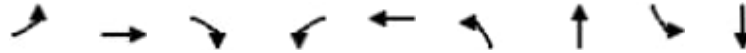


EX AM 10:57 am 09-19-2022 Baseline

Timings

6: Wonderland Road S & Southdale Road W

10-19-2022

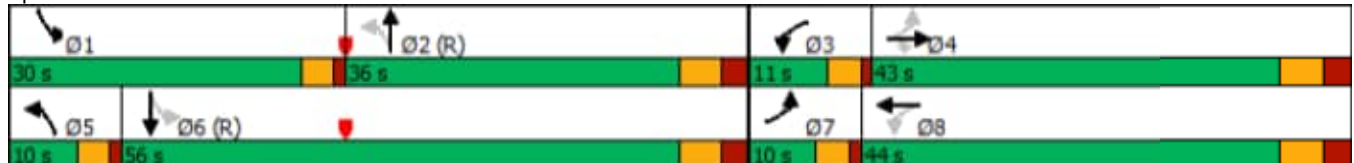


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↶ | ↷ | ↷ | ↶ | ↷ | ↶ | ↷ | ↶ | ↷ |
| Traffic Volume (vph) | 99 | 314 | 37 | 72 | 218 | 56 | 491 | 318 | 717 |
| Future Volume (vph) | 99 | 314 | 37 | 72 | 218 | 56 | 491 | 318 | 717 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | 9.0 | 35.1 | 9.0 | 35.1 |
| Total Split (s) | 10.0 | 43.0 | 43.0 | 11.0 | 44.0 | 10.0 | 36.0 | 30.0 | 56.0 |
| Total Split (%) | 8.3% | 35.8% | 35.8% | 9.2% | 36.7% | 8.3% | 30.0% | 25.0% | 46.7% |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | 3.0 | 3.7 | 3.0 | 3.7 |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 1.0 | 2.4 | 1.0 | 2.4 |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 4.0 | 6.1 | 4.0 | 6.1 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | None | C-Max |
| Act Effct Green (s) | 26.0 | 18.6 | 18.6 | 26.9 | 17.4 | 67.3 | 58.1 | 82.0 | 70.7 |
| Actuated g/C Ratio | 0.22 | 0.16 | 0.16 | 0.22 | 0.14 | 0.56 | 0.48 | 0.68 | 0.59 |
| v/c Ratio | 0.73 | 0.63 | 0.12 | 0.36 | 0.76 | 0.17 | 0.37 | 0.59 | 0.42 |
| Control Delay | 63.8 | 52.9 | 0.8 | 38.7 | 33.9 | 9.9 | 22.2 | 21.5 | 8.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.8 | 52.9 | 0.8 | 38.7 | 33.9 | 9.9 | 22.2 | 21.5 | 8.0 |
| LOS | E | D | A | D | C | A | C | C | A |
| Approach Delay | | 51.0 | | | 34.6 | | 21.0 | | 12.0 |
| Approach LOS | | D | | | C | | C | | B |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 34 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 25.0
 Intersection LOS: C
 Intersection Capacity Utilization 84.0%
 ICU Level of Service E
 Analysis Period (min) 15

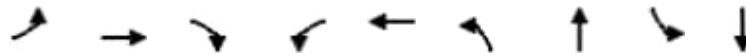
Splits and Phases: 6: Wonderland Road S & Southdale Road W



Queues

6: Wonderland Road S & Southdale Road W

10-19-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|------|------|-------|------|-------|------|--------|
| Lane Group Flow (vph) | 110 | 349 | 41 | 80 | 490 | 62 | 576 | 353 | 858 |
| v/c Ratio | 0.73 | 0.63 | 0.12 | 0.36 | 0.76 | 0.17 | 0.37 | 0.59 | 0.42 |
| Control Delay | 63.8 | 52.9 | 0.8 | 38.7 | 33.9 | 9.9 | 22.2 | 21.5 | 8.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.8 | 52.9 | 0.8 | 38.7 | 33.9 | 9.9 | 22.2 | 21.5 | 8.0 |
| Queue Length 50th (m) | 21.8 | 43.8 | 0.0 | 15.5 | 33.3 | 4.7 | 46.1 | 23.7 | 15.7 |
| Queue Length 95th (m) | #40.9 | 57.5 | 0.0 | 27.6 | 50.5 | 10.8 | 74.4 | 67.5 | 45.7 |
| Internal Link Dist (m) | | 422.9 | | | 361.1 | | 414.6 | | 1182.3 |
| Turn Bay Length (m) | 35.0 | | 35.0 | 80.0 | | 75.0 | | 35.0 | |
| Base Capacity (vph) | 151 | 1084 | 513 | 224 | 1124 | 369 | 1547 | 672 | 2022 |
| 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 | 0.73 | 0.32 | 0.08 | 0.36 | 0.44 | 0.17 | 0.37 | 0.53 | 0.42 |























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

6: Wonderland Road S & Southdale Road W






















10-19-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  |  |
| Traffic Volume (vph) | 99 | 314 | 37 | 72 | 218 | 223 | 56 | 491 | 27 | 318 | 717 | 55 |
| Future Volume (vph) | 99 | 314 | 37 | 72 | 218 | 223 | 56 | 491 | 27 | 318 | 717 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.92 | | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1733 | 3574 | 1378 | 1730 | 3112 | | 1581 | 3191 | | 1712 | 3432 | |
| Flt Permitted | 0.22 | 1.00 | 1.00 | 0.41 | 1.00 | | 0.33 | 1.00 | | 0.36 | 1.00 | |
| Satd. Flow (perm) | 392 | 3574 | 1378 | 742 | 3112 | | 549 | 3191 | | 649 | 3432 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 110 | 349 | 41 | 80 | 242 | 248 | 62 | 546 | 30 | 353 | 797 | 61 |
| RTOR Reduction (vph) | 0 | 0 | 35 | 0 | 191 | 0 | 0 | 2 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 110 | 349 | 6 | 80 | 299 | 0 | 62 | 574 | 0 | 353 | 855 | 0 |
| Confl. Peds. (#/hr) | 17 | | 14 | 14 | | 17 | 15 | | 27 | 27 | | 15 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Heavy Vehicles (%) | 4% | 1% | 14% | 4% | 4% | 7% | 14% | 11% | 30% | 5% | 3% | 15% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | | | 6 | | |
| Actuated Green, G (s) | 24.6 | 18.6 | 18.6 | 23.8 | 18.2 | | 63.4 | 57.4 | | 79.1 | 69.1 | |
| Effective Green, g (s) | 24.6 | 18.6 | 18.6 | 23.8 | 18.2 | | 63.4 | 57.4 | | 79.1 | 69.1 | |
| Actuated g/C Ratio | 0.21 | 0.16 | 0.16 | 0.20 | 0.15 | | 0.53 | 0.48 | | 0.66 | 0.58 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 147 | 553 | 213 | 193 | 471 | | 341 | 1526 | | 584 | 1976 | |
| v/s Ratio Prot | c0.04 | 0.10 | | 0.02 | 0.10 | | 0.01 | 0.18 | | c0.09 | 0.25 | |
| v/s Ratio Perm | c0.12 | | 0.00 | 0.06 | | | 0.09 | | | c0.31 | | |
| v/c Ratio | 0.75 | 0.63 | 0.03 | 0.41 | 0.64 | | 0.18 | 0.38 | | 0.60 | 0.43 | |
| Uniform Delay, d1 | 41.8 | 47.5 | 43.0 | 40.5 | 47.8 | | 13.9 | 19.9 | | 9.6 | 14.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 2.16 | 0.50 | |
| Incremental Delay, d2 | 18.6 | 2.4 | 0.1 | 1.4 | 2.8 | | 0.3 | 0.7 | | 1.4 | 0.6 | |
| Delay (s) | 60.4 | 49.8 | 43.1 | 42.0 | 50.6 | | 14.2 | 20.6 | | 22.2 | 7.8 | |
| Level of Service | E | D | D | D | D | | B | C | | C | A | |
| Approach Delay (s) | | 51.6 | | | 49.4 | | | 20.0 | | | 12.0 | |
| Approach LOS | | D | | | D | | | B | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 27.8 | | | HCM 2000 Level of Service | | C | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.66 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | Sum of lost time (s) | | 20.7 | | | | |
| Intersection Capacity Utilization | | | 84.0% | | | ICU Level of Service | | E | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Lanes, Volumes, Timings

7: Saunders School Access/Mall Access South (E) & Viscount Rd

10-19-2022






















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|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (vph) | 9 | 282 | 45 | 146 | 236 | 51 | 9 | 2 | 95 | 14 | 2 | 7 |
| Future Volume (vph) | 9 | 282 | 45 | 146 | 236 | 51 | 9 | 2 | 95 | 14 | 2 | 7 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 30.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.979 | | | | 0.850 | | 0.853 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 1726 | 0 | 1805 | 1792 | 1346 | 1805 | 1621 | 0 | 1583 | 0 | 1615 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 1726 | 0 | 1805 | 1792 | 1346 | 1805 | 1621 | 0 | 1583 | 0 | 1615 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | 20 | |
| Link Distance (m) | | 134.9 | | | 157.9 | | | 74.1 | | | 83.9 | |
| Travel Time (s) | | 12.1 | | | 14.2 | | | 13.3 | | | 15.1 | |
| Confl. Peds. (#/hr) | 9 | | 17 | 17 | | 9 | 67 | | 26 | 26 | | 67 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.67 | 0.67 | 0.67 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 0% | 9% | 0% | 0% | 6% | 20% | 0% | 0% | 0% | 14% | 0% | 0% |
| Adj. Flow (vph) | 10 | 328 | 52 | 170 | 274 | 59 | 13 | 3 | 142 | 16 | 2 | 8 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 10 | 380 | 0 | 170 | 274 | 59 | 13 | 145 | 0 | 16 | 2 | 8 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | |
|----------------------------------------|------------------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization Err% | ICU Level of Service H |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

7: Saunders School Access/Mall Access South (E) & Viscount Rd

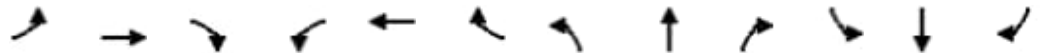
10-19-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (veh/h) | 9 | 282 | 45 | 146 | 236 | 51 | 9 | 2 | 95 | 14 | 2 | 7 |
| Future Volume (Veh/h) | 9 | 282 | 45 | 146 | 236 | 51 | 9 | 2 | 95 | 14 | 2 | 7 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.67 | 0.67 | 0.67 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 10 | 328 | 52 | 170 | 274 | 59 | 13 | 3 | 142 | 16 | 2 | 8 |
| Pedestrians | | 67 | | | 26 | | | 17 | | | 9 | |
| Lane Width (m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 6 | | | 2 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (m) | | 135 | | | 158 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 342 | | | 397 | | | 1081 | 1073 | 397 | 1140 | 1040 | 350 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 342 | | | 397 | | | 1081 | 1073 | 397 | 1140 | 1040 | 350 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.2 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.6 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 85 | | | 92 | 98 | 78 | 85 | 99 | 99 |
| cM capacity (veh/h) | 1219 | | | 1156 | | | 156 | 184 | 634 | 109 | 192 | 654 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | NB 2 | SB 1 | SB 2 | | | |
| Volume Total | 10 | 380 | 170 | 274 | 59 | 13 | 145 | 16 | 10 | | | |
| Volume Left | 10 | 0 | 170 | 0 | 0 | 13 | 0 | 16 | 0 | | | |
| Volume Right | 0 | 52 | 0 | 0 | 59 | 0 | 142 | 0 | 8 | | | |
| cSH | 1219 | 1700 | 1156 | 1700 | 1700 | 156 | 603 | 109 | 442 | | | |
| Volume to Capacity | 0.01 | 0.22 | 0.15 | 0.16 | 0.03 | 0.08 | 0.24 | 0.15 | 0.02 | | | |
| Queue Length 95th (m) | 0.2 | 0.0 | 4.1 | 0.0 | 0.0 | 2.1 | 7.5 | 4.0 | 0.6 | | | |
| Control Delay (s) | 8.0 | 0.0 | 8.7 | 0.0 | 0.0 | 30.2 | 12.9 | 43.7 | 13.3 | | | |
| Lane LOS | A | | A | | | D | B | E | B | | | |
| Approach Delay (s) | 0.2 | | 2.9 | | | 14.3 | | 32.0 | | | | |
| Approach LOS | | | | | | B | | D | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 4.3 | | | | | | | | | |
| Intersection Capacity Utilization | | | Err% | | ICU Level of Service | | | | H | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-19-2022

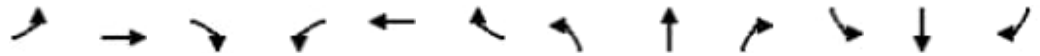


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 214 | 147 | 110 | 73 | 74 | 68 | 5 | 87 | 34 | 21 | 23 |
| Future Volume (vph) | 69 | 214 | 147 | 110 | 73 | 74 | 68 | 5 | 87 | 34 | 21 | 23 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 50.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 0.98 | 0.97 | | 0.97 | | 0.96 | 0.96 | 0.89 | | | 0.95 | 0.94 |
| Frt | | 0.939 | | | | 0.850 | | 0.859 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | | 0.970 | |
| Satd. Flow (prot) | 1752 | 1659 | 0 | 1736 | 1759 | 1509 | 1752 | 1361 | 0 | 0 | 1629 | 1380 |
| Flt Permitted | 0.702 | | | 0.354 | | | 0.715 | | | | 0.811 | |
| Satd. Flow (perm) | 1264 | 1659 | 0 | 629 | 1759 | 1452 | 1272 | 1361 | 0 | 0 | 1292 | 1301 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 62 | | | | 86 | | 132 | | | | 49 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | 20 | |
| Link Distance (m) | | 153.2 | | | 134.9 | | | 64.6 | | | 87.9 | |
| Travel Time (s) | | 13.8 | | | 12.1 | | | 11.6 | | | 15.8 | |
| Confl. Peds. (#/hr) | 28 | | 38 | 38 | | 28 | 36 | | 93 | 93 | | 36 |
| Confl. Bikes (#/hr) | | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.66 | 0.66 | 0.66 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 3% | 4% | 4% | 4% | 8% | 7% | 3% | 0% | 7% | 18% | 5% | 17% |
| Adj. Flow (vph) | 80 | 249 | 171 | 128 | 85 | 86 | 103 | 8 | 132 | 40 | 24 | 27 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 80 | 420 | 0 | 128 | 85 | 86 | 103 | 140 | 0 | 0 | 64 | 27 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | Yes | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-19-2022

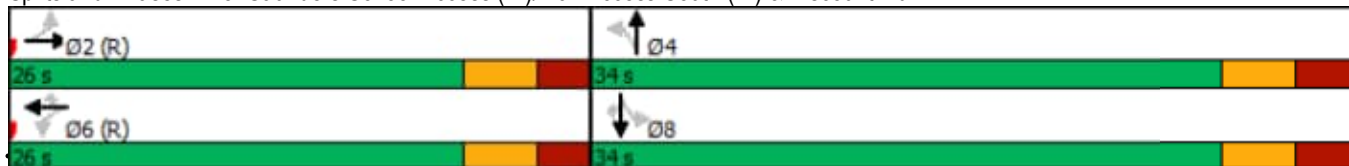


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-----|-------|-------|-------|
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Detector Phase | 2 | 2 | | 6 | 6 | 6 | 4 | 4 | | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 26.0 | 34.0 | 34.0 | | 34.0 | 34.0 | 34.0 |
| Total Split (%) | 43.3% | 43.3% | | 43.3% | 43.3% | 43.3% | 56.7% | 56.7% | | 56.7% | 56.7% | 56.7% |
| Maximum Green (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | 28.1 | 28.1 | 28.1 |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | | 2.6 | 2.6 | 2.6 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | C-Max | C-Max | | C-Max | C-Max | C-Max | Max | Max | | Max | Max | Max |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 | 19.0 | 19.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | 28.1 | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.34 | 0.34 | | 0.34 | 0.34 | 0.34 | 0.47 | 0.47 | | 0.47 | 0.47 | 0.47 |
| v/c Ratio | 0.19 | 0.70 | | 0.60 | 0.14 | 0.16 | 0.17 | 0.20 | | 0.11 | 0.04 | 0.04 |
| Control Delay | 15.5 | 22.1 | | 30.8 | 14.1 | 4.4 | 10.2 | 3.1 | | 9.6 | 1.7 | 1.7 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | 15.5 | 22.1 | | 30.8 | 14.1 | 4.4 | 10.2 | 3.1 | | 9.6 | 1.7 | 1.7 |
| LOS | B | C | | C | B | A | B | A | | A | A | A |
| Approach Delay | | 21.1 | | | 18.5 | | | 6.1 | | | 7.2 | |
| Approach LOS | | C | | | B | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 47 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 16.1
 Intersection LOS: B
 Intersection Capacity Utilization 77.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-19-2022



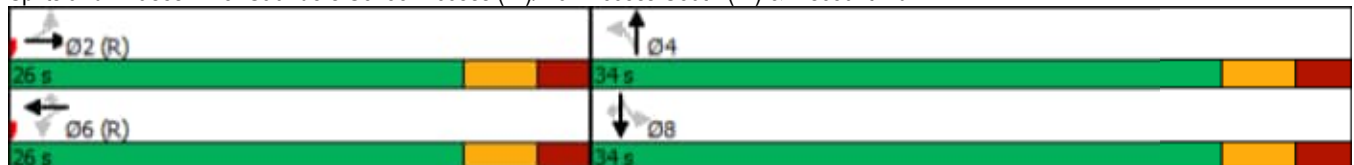
| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↶ | ↷ | ↶ | ↷ | ↷ | ↶ | ↷ | | ↷ | ↷ |
| Traffic Volume (vph) | 69 | 214 | 110 | 73 | 74 | 68 | 5 | 34 | 21 | 23 |
| Future Volume (vph) | 69 | 214 | 110 | 73 | 74 | 68 | 5 | 34 | 21 | 23 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 2 | | 6 | | | 4 | | 8 | |
| Permitted Phases | 2 | | 6 | | 6 | 4 | | 8 | | 8 |
| Detector Phase | 2 | 2 | 6 | 6 | 6 | 4 | 4 | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 34.0 | 34.0 | 34.0 | 34.0 | 34.0 |
| Total Split (%) | 43.3% | 43.3% | 43.3% | 43.3% | 43.3% | 56.7% | 56.7% | 56.7% | 56.7% | 56.7% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| 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) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | C-Max | C-Max | Max | Max | Max | Max | Max |
| Act Effct Green (s) | 20.3 | 20.3 | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.47 | 0.47 | | 0.47 | 0.47 |
| v/c Ratio | 0.19 | 0.70 | 0.60 | 0.14 | 0.16 | 0.17 | 0.20 | | 0.11 | 0.04 |
| Control Delay | 15.5 | 22.1 | 30.8 | 14.1 | 4.4 | 10.2 | 3.1 | | 9.6 | 1.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 15.5 | 22.1 | 30.8 | 14.1 | 4.4 | 10.2 | 3.1 | | 9.6 | 1.7 |
| LOS | B | C | C | B | A | B | A | | A | A |
| Approach Delay | | 21.1 | | 18.5 | | | 6.1 | | 7.2 | |
| Approach LOS | | C | | B | | | A | | A | |

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 47 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 16.1
 Intersection Capacity Utilization 77.1%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Queues

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-19-2022

























| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBT | SBR |
|------------------------|------|-------|------|-------|------|------|------|------|------|
| Lane Group Flow (vph) | 80 | 420 | 128 | 85 | 86 | 103 | 140 | 64 | 27 |
| v/c Ratio | 0.19 | 0.70 | 0.60 | 0.14 | 0.16 | 0.17 | 0.20 | 0.11 | 0.04 |
| Control Delay | 15.5 | 22.1 | 30.8 | 14.1 | 4.4 | 10.2 | 3.1 | 9.6 | 1.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 15.5 | 22.1 | 30.8 | 14.1 | 4.4 | 10.2 | 3.1 | 9.6 | 1.7 |
| Queue Length 50th (m) | 6.4 | 34.8 | 14.6 | 8.1 | 0.0 | 6.5 | 0.5 | 3.9 | 0.0 |
| Queue Length 95th (m) | 14.4 | 59.4 | 28.5 | 12.8 | 2.7 | 10.0 | 3.6 | 9.3 | 1.8 |
| Internal Link Dist (m) | | 129.2 | | 110.9 | | | 40.6 | 63.9 | |
| Turn Bay Length (m) | 30.0 | | 50.0 | | | | | | |
| Base Capacity (vph) | 427 | 602 | 212 | 595 | 548 | 595 | 707 | 605 | 635 |
| 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 | 0.19 | 0.70 | 0.60 | 0.14 | 0.16 | 0.17 | 0.20 | 0.11 | 0.04 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

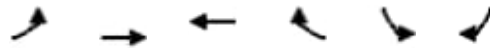
8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-19-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  | |  |  |
| Traffic Volume (vph) | 69 | 214 | 147 | 110 | 73 | 74 | 68 | 5 | 87 | 34 | 21 | 23 |
| Future Volume (vph) | 69 | 214 | 147 | 110 | 73 | 74 | 68 | 5 | 87 | 34 | 21 | 23 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Frbp, ped/bikes | 1.00 | 0.97 | | 1.00 | 1.00 | 0.96 | 1.00 | 0.89 | | | 1.00 | 0.94 |
| Flpb, ped/bikes | 0.98 | 1.00 | | 0.97 | 1.00 | 1.00 | 0.96 | 1.00 | | | 0.95 | 1.00 |
| Frt | 1.00 | 0.94 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.86 | | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | | 0.97 | 1.00 |
| Satd. Flow (prot) | 1711 | 1659 | | 1687 | 1759 | 1452 | 1691 | 1361 | | | 1545 | 1301 |
| Flt Permitted | 0.70 | 1.00 | | 0.35 | 1.00 | 1.00 | 0.72 | 1.00 | | | 0.81 | 1.00 |
| Satd. Flow (perm) | 1264 | 1659 | | 629 | 1759 | 1452 | 1273 | 1361 | | | 1292 | 1301 |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.66 | 0.66 | 0.66 | 0.86 | 0.86 | 0.86 |
| Adj. Flow (vph) | 80 | 249 | 171 | 128 | 85 | 86 | 103 | 8 | 132 | 40 | 24 | 27 |
| RTOR Reduction (vph) | 0 | 41 | 0 | 0 | 0 | 57 | 0 | 70 | 0 | 0 | 0 | 14 |
| Lane Group Flow (vph) | 80 | 379 | 0 | 128 | 85 | 29 | 103 | 70 | 0 | 0 | 64 | 13 |
| Confl. Peds. (#/hr) | 28 | | 38 | 38 | | 28 | 36 | | 93 | 93 | | 36 |
| Confl. Bikes (#/hr) | | | 2 | | | | | | | | | |
| Heavy Vehicles (%) | 3% | 4% | 4% | 4% | 8% | 7% | 3% | 0% | 7% | 18% | 5% | 17% |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Actuated Green, G (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | | 28.1 | 28.1 |
| Effective Green, g (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.34 | 0.34 | | 0.34 | 0.34 | 0.34 | 0.47 | 0.47 | | | 0.47 | 0.47 |
| Clearance Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 427 | 561 | | 212 | 595 | 491 | 596 | 637 | | | 605 | 609 |
| v/s Ratio Prot | | c0.23 | | | 0.05 | | | 0.05 | | | | |
| v/s Ratio Perm | 0.06 | | | 0.20 | | 0.02 | c0.08 | | | | 0.05 | 0.01 |
| v/c Ratio | 0.19 | 0.68 | | 0.60 | 0.14 | 0.06 | 0.17 | 0.11 | | | 0.11 | 0.02 |
| Uniform Delay, d1 | 14.0 | 17.0 | | 16.5 | 13.8 | 13.4 | 9.2 | 8.9 | | | 8.9 | 8.6 |
| Progression Factor | 1.00 | 1.00 | | 1.09 | 0.97 | 1.31 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.0 | 6.4 | | 11.8 | 0.5 | 0.2 | 0.6 | 0.3 | | | 0.4 | 0.1 |
| Delay (s) | 15.0 | 23.4 | | 29.8 | 13.9 | 17.7 | 9.9 | 9.3 | | | 9.3 | 8.6 |
| Level of Service | B | C | | C | B | B | A | A | | | A | A |
| Approach Delay (s) | | 22.1 | | | 21.8 | | | 9.5 | | | 9.1 | |
| Approach LOS | | C | | | C | | | A | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 18.3 | | | | | | | | | B |
| HCM 2000 Volume to Capacity ratio | | | 0.38 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 60.0 | | | | | | 11.6 | | | |
| Intersection Capacity Utilization | | | 77.1% | | | | | | | | | D |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Lanes, Volumes, Timings
 9: Viscount Rd & Woodcrest Rd

10-19-2022



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations | | 4 | 4 | | 4 | |
| Traffic Volume (vph) | 11 | 376 | 137 | 32 | 52 | 21 |
| Future Volume (vph) | 11 | 376 | 137 | 32 | 52 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.974 | | 0.962 | |
| Flt Protected | | 0.999 | | | 0.965 | |
| Satd. Flow (prot) | 0 | 1810 | 1733 | 0 | 1692 | 0 |
| Flt Permitted | | 0.999 | | | 0.965 | |
| Satd. Flow (perm) | 0 | 1810 | 1733 | 0 | 1692 | 0 |
| Link Speed (k/h) | | 40 | 40 | | 50 | |
| Link Distance (m) | | 15.9 | 153.2 | | 195.3 | |
| Travel Time (s) | | 1.4 | 13.8 | | 14.1 | |
| Confl. Peds. (#/hr) | 15 | | | 15 | | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Heavy Vehicles (%) | 0% | 5% | 7% | 6% | 2% | 10% |
| Adj. Flow (vph) | 14 | 488 | 178 | 42 | 68 | 27 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 502 | 220 | 0 | 95 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(m) | | 3.6 | 3.6 | | 3.6 | |
| Link Offset(m) | | 0.0 | 0.0 | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | Yes | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | | 15 | 25 | 15 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 39.5% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

9: Viscount Rd & Woodcrest Rd

10-19-2022

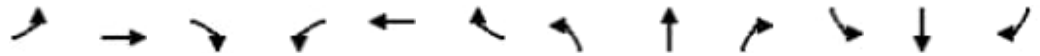


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|-------------|-------------|-------------|------|----------------------|------|
| Lane Configurations | | 4 | 1 | | 2 | |
| Traffic Volume (veh/h) | 11 | 376 | 137 | 32 | 52 | 21 |
| Future Volume (Veh/h) | 11 | 376 | 137 | 32 | 52 | 21 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Hourly flow rate (vph) | 14 | 488 | 178 | 42 | 68 | 27 |
| Pedestrians | | | | | 15 | |
| Lane Width (m) | | | | | 3.6 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | TWLTL | | | |
| Median storage (veh) | | | 2 | | | |
| Upstream signal (m) | | 16 | 153 | | | |
| pX, platoon unblocked | | | | | 0.87 | |
| vC, conflicting volume | 235 | | | | 730 | 214 |
| vC1, stage 1 conf vol | | | | | 214 | |
| vC2, stage 2 conf vol | | | | | 516 | |
| vCu, unblocked vol | 235 | | | | 619 | 214 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.3 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.4 |
| p0 queue free % | 99 | | | | 88 | 97 |
| cM capacity (veh/h) | 1327 | | | | 557 | 796 |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 502 | 220 | 95 | | | |
| Volume Left | 14 | 0 | 68 | | | |
| Volume Right | 0 | 42 | 27 | | | |
| cSH | 1327 | 1700 | 609 | | | |
| Volume to Capacity | 0.01 | 0.13 | 0.16 | | | |
| Queue Length 95th (m) | 0.3 | 0.0 | 4.4 | | | |
| Control Delay (s) | 0.3 | 0.0 | 12.0 | | | |
| Lane LOS | A | | B | | | |
| Approach Delay (s) | 0.3 | 0.0 | 12.0 | | | |
| Approach LOS | | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.6 | | | |
| Intersection Capacity Utilization | | | 39.5% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-19-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|--------------|------|-------|------------------------|-------|-------|-------|------|-------|------|-------|-------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Traffic Volume (vph) | 0 | 11 | 31 | 44 | 26 | 21 | 61 | 42 | 45 | 0 | 3 | 3 |
| Future Volume (vph) | 0 | 11 | 31 | 44 | 26 | 21 | 61 | 42 | 45 | 0 | 3 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | 0.900 | | | | 0.969 | | | | 0.923 | | 0.932 | |
| Flt Protected | | | | | 0.976 | | 0.950 | | | | | |
| Satd. Flow (prot) | 0 | 1637 | 0 | 0 | 1652 | 0 | 1770 | 1605 | 0 | 0 | 1771 | 0 |
| Flt Permitted | | | | | 0.976 | | 0.950 | | | | | |
| Satd. Flow (perm) | 0 | 1637 | 0 | 0 | 1652 | 0 | 1770 | 1605 | 0 | 0 | 1771 | 0 |
| Link Speed (k/h) | 20 | | | | 20 | | | | 20 | | 20 | |
| Link Distance (m) | 78.9 | | | | 182.4 | | | | 87.9 | | 68.5 | |
| Travel Time (s) | 14.2 | | | | 32.8 | | | | 15.8 | | 12.3 | |
| Confl. Peds. (#/hr) | 2 | | 17 | | 17 | | | | 2 | | | |
| Confl. Bikes (#/hr) | | | 2 | | | | | | | | 2 | |
| Peak Hour Factor | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| Heavy Vehicles (%) | 0% | 0% | 6% | 18% | 0% | 0% | 2% | 0% | 18% | 0% | 0% | 0% |
| Adj. Flow (vph) | 0 | 17 | 49 | 70 | 41 | 33 | 97 | 67 | 71 | 0 | 5 | 5 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 66 | 0 | 0 | 144 | 0 | 97 | 138 | 0 | 0 | 10 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | 0.0 | | | | 0.0 | | | | 3.6 | | 3.6 | |
| Link Offset(m) | 0.0 | | | | 0.0 | | | | 0.0 | | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | | 4.8 | | | | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | | 25 | | 15 | | 25 | | 15 | |
| Sign Control | Stop | | | | Stop | | | | Stop | | Stop | |
| Intersection Summary | | | | | | | | | | | | |
| Area Type: | Other | | | | | | | | | | | |
| Control Type: | Unsignalized | | | | | | | | | | | |
| Intersection Capacity Utilization | 28.6% | | | ICU Level of Service A | | | | | | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

HCM Unsignalized Intersection Capacity Analysis

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-19-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 0 | 11 | 31 | 44 | 26 | 21 | 61 | 42 | 45 | 0 | 3 | 3 |
| Future Volume (vph) | 0 | 11 | 31 | 44 | 26 | 21 | 61 | 42 | 45 | 0 | 3 | 3 |
| Peak Hour Factor | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| Hourly flow rate (vph) | 0 | 17 | 49 | 70 | 41 | 33 | 97 | 67 | 71 | 0 | 5 | 5 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|-----------------------|-------|------|------|-------|-------|
| Volume Total (vph) | 66 | 144 | 97 | 138 | 10 |
| Volume Left (vph) | 0 | 70 | 97 | 0 | 0 |
| Volume Right (vph) | 49 | 33 | 0 | 71 | 5 |
| Hadj (s) | -0.37 | 0.11 | 0.53 | -0.20 | -0.30 |
| Departure Headway (s) | 4.3 | 4.7 | 5.6 | 4.8 | 4.5 |
| Degree Utilization, x | 0.08 | 0.19 | 0.15 | 0.18 | 0.01 |
| Capacity (veh/h) | 790 | 729 | 625 | 718 | 745 |
| Control Delay (s) | 7.7 | 8.8 | 8.3 | 7.7 | 7.5 |
| Approach Delay (s) | 7.7 | 8.8 | 8.0 | | 7.5 |
| Approach LOS | A | A | A | | A |

| Intersection Summary | | | | |
|-----------------------------------|--|-------|----------------------|---|
| Delay | | | 8.2 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | 28.6% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

Lanes, Volumes, Timings
 11: Mall Access South (E) & Internal Mall Rd

10-19-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 39 | 15 | 8 | 79 | 41 | 21 |
| Future Volume (vph) | 39 | 15 | 8 | 79 | 41 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.962 | | | 0.850 | | |
| Flt Protected | | | | 0.995 | 0.950 | |
| Satd. Flow (prot) | 1561 | 0 | 0 | 1890 | 1504 | 1615 |
| Flt Permitted | | | | 0.995 | 0.950 | |
| Satd. Flow (perm) | 1561 | 0 | 0 | 1890 | 1504 | 1615 |
| Link Speed (k/h) | 20 | | | 20 | 20 | |
| Link Distance (m) | 182.4 | | | 55.5 | 83.9 | |
| Travel Time (s) | 32.8 | | | 10.0 | 15.1 | |
| Confl. Peds. (#/hr) | 21 | | 21 | 5 | | 9 |
| Peak Hour Factor | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| Heavy Vehicles (%) | 21% | 7% | 0% | 0% | 20% | 0% |
| Adj. Flow (vph) | 72 | 28 | 15 | 146 | 76 | 39 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 100 | 0 | 0 | 161 | 76 | 39 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | | 0.0 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | 25 | | 15 |
| Sign Control | Stop | | | Stop | Stop | |

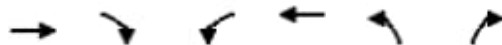
Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 23.4% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

11: Mall Access South (E) & Internal Mall Rd

10-19-2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|------|------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 39 | 15 | 8 | 79 | 41 | 21 |
| Future Volume (vph) | 39 | 15 | 8 | 79 | 41 | 21 |
| Peak Hour Factor | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| Hourly flow rate (vph) | 72 | 28 | 15 | 146 | 76 | 39 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | | |
| Volume Total (vph) | 100 | 161 | 76 | 39 | | |
| Volume Left (vph) | 0 | 15 | 76 | 0 | | |
| Volume Right (vph) | 28 | 0 | 0 | 39 | | |
| Hadj (s) | 0.12 | 0.02 | 0.84 | -0.70 | | |
| Departure Headway (s) | 4.5 | 4.3 | 5.9 | 4.4 | | |
| Degree Utilization, x | 0.13 | 0.19 | 0.13 | 0.05 | | |
| Capacity (veh/h) | 771 | 796 | 579 | 771 | | |
| Control Delay (s) | 8.2 | 8.4 | 8.6 | 6.4 | | |
| Approach Delay (s) | 8.2 | 8.4 | 7.9 | | | |
| Approach LOS | A | A | A | | | |
| Intersection Summary | | | | | | |
| Delay | | | 8.2 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 23.4% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 12: Mall Access East (S) & Internal Mall Road

10-19-2022



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|--------------|-------|------------------------|-------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 83 | 4 | 3 | 56 | 7 | 25 |
| Future Volume (vph) | 83 | 4 | 3 | 56 | 7 | 25 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | 0.850 | 0.872 | | | |
| Flt Protected | 0.950 | | | | | 0.989 |
| Satd. Flow (prot) | 1805 | 1292 | 1450 | 0 | 0 | 1879 |
| Flt Permitted | 0.950 | | | | | 0.989 |
| Satd. Flow (perm) | 1805 | 1292 | 1450 | 0 | 0 | 1879 |
| Link Speed (k/h) | 20 | | 20 | | | 20 |
| Link Distance (m) | 105.0 | | 76.6 | | | 159.1 |
| Travel Time (s) | 18.9 | | 13.8 | | | 28.6 |
| Confl. Peds. (#/hr) | 7 | | | 2 | 2 | |
| Confl. Bikes (#/hr) | | 1 | | | | |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| Heavy Vehicles (%) | 0% | 25% | 0% | 15% | 0% | 0% |
| Adj. Flow (vph) | 146 | 7 | 5 | 98 | 12 | 44 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 146 | 7 | 103 | 0 | 0 | 56 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(m) | 3.6 | | 0.0 | | | 0.0 |
| Link Offset(m) | 0.0 | | 0.0 | | | 0.0 |
| Crosswalk Width(m) | 4.8 | | 4.8 | | | 4.8 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | 15 | | 15 | 25 | |
| Sign Control | Stop | | Stop | | | Stop |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 18.7% | | ICU Level of Service A | | | |
| Analysis Period (min) | 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 12: Mall Access East (S) & Internal Mall Road

10-19-2022



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|------|-------|-------|------|----------------------|------|
| Lane Configurations | ↶ | ↷ | ↶ | | | ↷ |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 83 | 4 | 3 | 56 | 7 | 25 |
| Future Volume (vph) | 83 | 4 | 3 | 56 | 7 | 25 |
| Peak Hour Factor | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 | 0.57 |
| Hourly flow rate (vph) | 146 | 7 | 5 | 98 | 12 | 44 |
| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 | | |
| Volume Total (vph) | 146 | 7 | 103 | 56 | | |
| Volume Left (vph) | 146 | 0 | 0 | 12 | | |
| Volume Right (vph) | 0 | 7 | 98 | 0 | | |
| Hadj (s) | 0.50 | -0.27 | -0.33 | 0.04 | | |
| Departure Headway (s) | 5.4 | 4.6 | 4.1 | 4.5 | | |
| Degree Utilization, x | 0.22 | 0.01 | 0.12 | 0.07 | | |
| Capacity (veh/h) | 645 | 756 | 847 | 762 | | |
| Control Delay (s) | 8.6 | 6.4 | 7.6 | 7.8 | | |
| Approach Delay (s) | 8.5 | | 7.6 | 7.8 | | |
| Approach LOS | A | | A | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 8.1 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 18.7% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 13: Internal Mall Road & Mall Access East (N)

10-19-2022













| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 8 | 5 | 25 | 69 | 4 | 4 |
| Future Volume (vph) | 8 | 5 | 25 | 69 | 4 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.949 | | | | | 0.932 |
| Flt Protected | | | 0.950 | | | 0.976 |
| Satd. Flow (prot) | 1668 | 0 | 1736 | 1900 | 1728 | 0 |
| Flt Permitted | | | 0.950 | | | 0.976 |
| Satd. Flow (perm) | 1668 | 0 | 1736 | 1900 | 1728 | 0 |
| Link Speed (k/h) | 20 | | | | | 20 |
| Link Distance (m) | 158.8 | | | 100.3 | 159.1 | |
| Travel Time (s) | 28.6 | | | 18.1 | 28.6 | |
| Confl. Peds. (#/hr) | | | | | | 17 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Heavy Vehicles (%) | 13% | 0% | 4% | 0% | 0% | 0% |
| Adj. Flow (vph) | 10 | 6 | 32 | 88 | 5 | 5 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 16 | 0 | 32 | 88 | 10 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.6 | | | | | 3.6 |
| Link Offset(m) | 0.0 | | | | | 0.0 |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | 25 | | 15 |
| Sign Control | Stop | | | Stop | Stop | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 22.4% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis
 13: Internal Mall Road & Mall Access East (N)

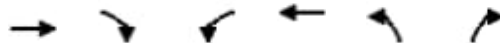
10-19-2022

| |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | |  |  |  | |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 8 | 5 | 25 | 69 | 4 | 4 |
| Future Volume (vph) | 8 | 5 | 25 | 69 | 4 | 4 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Hourly flow rate (vph) | 10 | 6 | 32 | 88 | 5 | 5 |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | | |
| Volume Total (vph) | 16 | 32 | 88 | 10 | | |
| Volume Left (vph) | 0 | 32 | 0 | 5 | | |
| Volume Right (vph) | 6 | 0 | 0 | 5 | | |
| Hadj (s) | -0.09 | 0.57 | 0.00 | -0.20 | | |
| Departure Headway (s) | 4.1 | 5.1 | 4.5 | 4.0 | | |
| Degree Utilization, x | 0.02 | 0.05 | 0.11 | 0.01 | | |
| Capacity (veh/h) | 876 | 701 | 782 | 859 | | |
| Control Delay (s) | 7.1 | 7.1 | 6.9 | 7.1 | | |
| Approach Delay (s) | 7.1 | 7.0 | | 7.1 | | |
| Approach LOS | A | A | | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 7.0 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 22.4% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings

14: Viscount Rd

10-19-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|------|-------|-------|-------|
| Lane Configurations | ↑ | | | ↑ | ↘ | |
| Traffic Volume (vph) | 387 | 0 | 0 | 158 | 0 | 0 |
| Future Volume (vph) | 387 | 0 | 0 | 158 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 1810 | 0 | 0 | 1776 | 1863 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 1810 | 0 | 0 | 1776 | 1863 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (k/h) | 40 | | | 40 | 20 | |
| Link Distance (m) | 218.9 | | | 0.0 | 20.6 | |
| Travel Time (s) | 19.7 | | | 0.0 | 3.7 | |
| Confl. Peds. (#/hr) | | | | | 50 | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Heavy Vehicles (%) | 5% | 2% | 2% | 7% | 2% | 2% |
| Adj. Flow (vph) | 503 | 0 | 0 | 205 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 503 | 0 | 0 | 205 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | | 0.0 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | | 15 | 25 | | 25 | 15 |
| Number of Detectors | 2 | | | 2 | 1 | |
| Detector Template | Thru | | | Thru | Left | |
| Leading Detector (m) | 10.0 | | | 10.0 | 2.0 | |
| Trailing Detector (m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 0.6 | | | 0.6 | 2.0 | |
| Detector 1 Type | Cl+Ex | | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 2 Position(m) | 9.4 | | | 9.4 | | |
| Detector 2 Size(m) | 0.6 | | | 0.6 | | |
| Detector 2 Type | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |

Lanes, Volumes, Timings

14: Viscount Rd

10-19-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|-------|-----|-----|-------|-------|-----|
| Detector Phase | 4 | | | 8 | 2 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | | 10.0 | 40.2 | |
| Minimum Split (s) | 14.3 | | | 14.3 | 46.0 | |
| Total Split (s) | 16.0 | | | 16.0 | 46.0 | |
| Total Split (%) | 25.8% | | | 25.8% | 74.2% | |
| Maximum Green (s) | 11.7 | | | 11.7 | 40.2 | |
| Yellow Time (s) | 3.3 | | | 3.3 | 3.3 | |
| All-Red Time (s) | 1.0 | | | 1.0 | 2.5 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | | | 4.3 | 5.8 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 1.0 | |
| Recall Mode | Max | | | Max | None | |
| Walk Time (s) | | | | | 35.0 | |
| Flash Dont Walk (s) | | | | | 5.0 | |
| Pedestrian Calls (#/hr) | | | | | 50 | |
| Act Effect Green (s) | 34.9 | | | 34.9 | | |
| Actuated g/C Ratio | 0.87 | | | 0.87 | | |
| v/c Ratio | 0.32 | | | 0.13 | | |
| Control Delay | 8.8 | | | 7.0 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 8.8 | | | 7.0 | | |
| LOS | A | | | A | | |
| Approach Delay | 8.8 | | | 7.0 | | |
| Approach LOS | A | | | A | | |

Intersection Summary

| | |
|-----------------------------------|------------------|
| Area Type: | Other |
| Cycle Length: | 62 |
| Actuated Cycle Length: | 40.2 |
| Natural Cycle: | 75 |
| Control Type: | Semi Act-Uncoord |
| Maximum v/c Ratio: | 0.32 |
| Intersection Signal Delay: | 8.3 |
| Intersection Capacity Utilization | 24.0% |
| Analysis Period (min) | 15 |
| Intersection LOS: | A |
| ICU Level of Service | A |

Splits and Phases: 14: Viscount Rd



Timings
14: Viscount Rd

10-19-2022

| | → | ← | |
|----------------------|-------|-------|------|
| Lane Group | EBT | WBT | Ø2 |
| Lane Configurations | ↑ | ↑ | |
| Traffic Volume (vph) | 387 | 158 | |
| Future Volume (vph) | 387 | 158 | |
| Turn Type | NA | NA | |
| Protected Phases | 4 | 8 | 2 |
| Permitted Phases | | | |
| Detector Phase | 4 | 8 | |
| Switch Phase | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 40.2 |
| Minimum Split (s) | 14.3 | 14.3 | 46.0 |
| Total Split (s) | 16.0 | 16.0 | 46.0 |
| Total Split (%) | 25.8% | 25.8% | 74% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.0 | 1.0 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | 4.3 | |
| Lead/Lag | | | |
| Lead-Lag Optimize? | | | |
| Recall Mode | Max | Max | None |
| Act Effct Green (s) | 34.9 | 34.9 | |
| Actuated g/C Ratio | 0.87 | 0.87 | |
| v/c Ratio | 0.32 | 0.13 | |
| Control Delay | 8.8 | 7.0 | |
| Queue Delay | 0.0 | 0.0 | |
| Total Delay | 8.8 | 7.0 | |
| LOS | A | A | |
| Approach Delay | 8.8 | 7.0 | |
| Approach LOS | A | A | |

Intersection Summary

| | |
|-----------------------------------------|------------------------|
| Cycle Length: 62 | |
| Actuated Cycle Length: 40.2 | |
| Natural Cycle: 75 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.32 | |
| Intersection Signal Delay: 8.3 | Intersection LOS: A |
| Intersection Capacity Utilization 24.0% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 14: Viscount Rd



Queues

14: Viscount Rd

10-19-2022



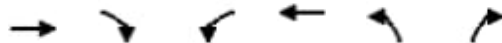
| Lane Group | EBT | WBT |
|------------------------|-------|------|
| Lane Group Flow (vph) | 503 | 205 |
| v/c Ratio | 0.32 | 0.13 |
| Control Delay | 8.8 | 7.0 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 8.8 | 7.0 |
| Queue Length 50th (m) | 0.0 | 0.0 |
| Queue Length 95th (m) | 84.3 | 33.0 |
| Internal Link Dist (m) | 194.9 | 0.1 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 1573 | 1544 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.32 | 0.13 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

14: Viscount Rd

10-19-2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|-------|------|-------|------|---------------------------|------|
| Lane Configurations | ↑ | | | ↑ | ↔ | |
| Traffic Volume (vph) | 387 | 0 | 0 | 158 | 0 | 0 |
| Future Volume (vph) | 387 | 0 | 0 | 158 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.3 | | | 4.3 | | |
| Lane Util. Factor | 1.00 | | | 1.00 | | |
| Frbp, ped/bikes | 1.00 | | | 1.00 | | |
| Flpb, ped/bikes | 1.00 | | | 1.00 | | |
| Frt | 1.00 | | | 1.00 | | |
| Flt Protected | 1.00 | | | 1.00 | | |
| Satd. Flow (prot) | 1810 | | | 1776 | | |
| Flt Permitted | 1.00 | | | 1.00 | | |
| Satd. Flow (perm) | 1810 | | | 1776 | | |
| Peak-hour factor, PHF | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Adj. Flow (vph) | 503 | 0 | 0 | 205 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 503 | 0 | 0 | 205 | 0 | 0 |
| Confl. Peds. (#/hr) | | | | | 50 | |
| Heavy Vehicles (%) | 5% | 2% | 2% | 7% | 2% | 2% |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 30.5 | | | 30.5 | | |
| Effective Green, g (s) | 30.5 | | | 30.5 | | |
| Actuated g/C Ratio | 0.68 | | | 0.68 | | |
| Clearance Time (s) | 4.3 | | | 4.3 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Lane Grp Cap (vph) | 1232 | | | 1209 | | |
| v/s Ratio Prot | c0.28 | | | 0.12 | | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.41 | | | 0.17 | | |
| Uniform Delay, d1 | 3.2 | | | 2.6 | | |
| Progression Factor | 1.00 | | | 1.00 | | |
| Incremental Delay, d2 | 1.0 | | | 0.3 | | |
| Delay (s) | 4.2 | | | 2.9 | | |
| Level of Service | A | | | A | | |
| Approach Delay (s) | 4.2 | | | 2.9 | 0.0 | |
| Approach LOS | A | | | A | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 3.8 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.36 | | | |
| Actuated Cycle Length (s) | | | 44.8 | | Sum of lost time (s) | 10.1 |
| Intersection Capacity Utilization | | | 24.0% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| c Critical Lane Group | | | | | | |

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-20-2022

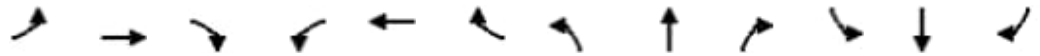


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↑↑ | ↗ | ↘ | ↑↑ | ↗ | ↘ | ↑↑ | ↗ | ↘ | ↑↑ | ↘ |
| Traffic Volume (vph) | 142 | 379 | 96 | 253 | 561 | 409 | 99 | 1055 | 167 | 289 | 1077 | 94 |
| Future Volume (vph) | 142 | 379 | 96 | 253 | 561 | 409 | 99 | 1055 | 167 | 289 | 1077 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | | 0.97 | 0.99 | | 0.98 | 1.00 | | 0.95 | | 1.00 | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.988 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 3539 | 1583 | 1787 | 3610 | 1615 | 1805 | 3510 | 1497 | 1805 | 3494 | 0 |
| Flt Permitted | 0.172 | | | 0.470 | | | 0.160 | | | 0.104 | | |
| Satd. Flow (perm) | 323 | 3539 | 1532 | 874 | 3610 | 1582 | 303 | 3510 | 1428 | 198 | 3494 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 132 | | | 296 | | | 164 | | | 9 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 242.3 | | | 231.0 | | | 353.5 | | | 276.8 | |
| Travel Time (s) | | 17.4 | | | 16.6 | | | 25.5 | | | 19.9 | |
| Confl. Peds. (#/hr) | 6 | | 14 | 14 | | 6 | 12 | | 23 | 23 | | 12 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 2% | 2% | 1% | 0% | 0% | 0% | 1% | 4% | 0% | 2% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | 0 |
| Adj. Flow (vph) | 145 | 387 | 98 | 258 | 572 | 417 | 101 | 1077 | 170 | 295 | 1099 | 96 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 145 | 387 | 98 | 258 | 572 | 417 | 101 | 1077 | 170 | 295 | 1195 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.02 | 1.05 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-20-2022

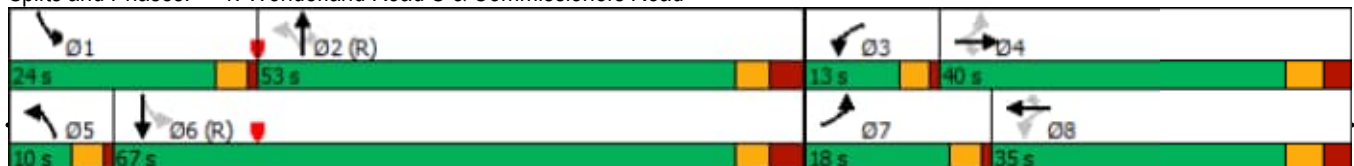


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 | |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 13.0 | 35.0 | 35.0 | 10.0 | 53.0 | 53.0 | 24.0 | 67.0 | |
| Total Split (%) | 13.8% | 30.8% | 30.8% | 10.0% | 26.9% | 26.9% | 7.7% | 40.8% | 40.8% | 18.5% | 51.5% | |
| Maximum Green (s) | 14.0 | 33.4 | 33.4 | 9.0 | 28.4 | 28.4 | 6.0 | 46.3 | 46.3 | 20.0 | 60.3 | |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | |
| Flash Dont Walk (s) | | 20.0 | 20.0 | | 20.0 | 20.0 | | 19.0 | 19.0 | | 19.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | |
| Act Effct Green (s) | 44.1 | 29.5 | 29.5 | 37.4 | 25.8 | 25.8 | 60.5 | 51.2 | 51.2 | 76.9 | 63.6 | |
| Actuated g/C Ratio | 0.34 | 0.23 | 0.23 | 0.29 | 0.20 | 0.20 | 0.47 | 0.39 | 0.39 | 0.59 | 0.49 | |
| v/c Ratio | 0.58 | 0.48 | 0.22 | 0.82 | 0.80 | 0.76 | 0.47 | 0.78 | 0.26 | 0.84 | 0.70 | |
| Control Delay | 38.7 | 45.1 | 3.6 | 57.9 | 58.4 | 23.5 | 22.7 | 27.8 | 2.9 | 48.3 | 29.0 | |
| 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 | 38.7 | 45.1 | 3.6 | 57.9 | 58.4 | 23.5 | 22.7 | 27.8 | 2.9 | 48.3 | 29.0 | |
| LOS | D | D | A | E | E | C | C | C | A | D | C | |
| Approach Delay | | 37.2 | | | 46.6 | | | 24.3 | | | 32.8 | |
| Approach LOS | | D | | | D | | | C | | | C | |

Intersection Summary

| | |
|------------------------------------|------------------------------------------------------------------|
| Area Type: | Other |
| Cycle Length: | 130 |
| Actuated Cycle Length: | 130 |
| Offset: | 122 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green |
| Natural Cycle: | 85 |
| Control Type: | Actuated-Coordinated |
| Maximum v/c Ratio: | 0.84 |
| Intersection Signal Delay: | 34.6 |
| Intersection LOS: | C |
| Intersection Capacity Utilization: | 91.9% |
| ICU Level of Service: | F |
| Analysis Period (min): | 15 |

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Timings

1: Wonderland Road S & Commissioners Road

10-20-2022

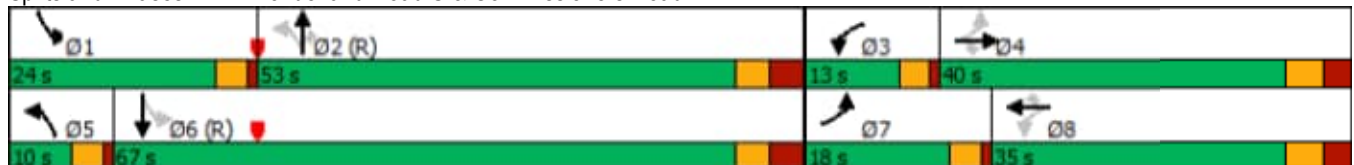


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↗ | ↘ | ↘ | ↗ | ↘ | ↘ | ↗ | ↘ | ↘ | ↗ |
| Traffic Volume (vph) | 142 | 379 | 96 | 253 | 561 | 409 | 99 | 1055 | 167 | 289 | 1077 |
| Future Volume (vph) | 142 | 379 | 96 | 253 | 561 | 409 | 99 | 1055 | 167 | 289 | 1077 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 13.0 | 35.0 | 35.0 | 10.0 | 53.0 | 53.0 | 24.0 | 67.0 |
| Total Split (%) | 13.8% | 30.8% | 30.8% | 10.0% | 26.9% | 26.9% | 7.7% | 40.8% | 40.8% | 18.5% | 51.5% |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effct Green (s) | 44.1 | 29.5 | 29.5 | 37.4 | 25.8 | 25.8 | 60.5 | 51.2 | 51.2 | 76.9 | 63.6 |
| Actuated g/C Ratio | 0.34 | 0.23 | 0.23 | 0.29 | 0.20 | 0.20 | 0.47 | 0.39 | 0.39 | 0.59 | 0.49 |
| v/c Ratio | 0.58 | 0.48 | 0.22 | 0.82 | 0.80 | 0.76 | 0.47 | 0.78 | 0.26 | 0.84 | 0.70 |
| Control Delay | 38.7 | 45.1 | 3.6 | 57.9 | 58.4 | 23.5 | 22.7 | 27.8 | 2.9 | 48.3 | 29.0 |
| 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 | 38.7 | 45.1 | 3.6 | 57.9 | 58.4 | 23.5 | 22.7 | 27.8 | 2.9 | 48.3 | 29.0 |
| LOS | D | D | A | E | E | C | C | C | A | D | C |
| Approach Delay | | 37.2 | | | 46.6 | | | 24.3 | | | 32.8 |
| Approach LOS | | D | | | D | | | C | | | C |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 122 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 34.6
 Intersection Capacity Utilization 91.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Queues

1: Wonderland Road S & Commissioners Road

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|------|-------|------|-------|-------|-------|------|-------|------|--------|-------|
| Lane Group Flow (vph) | 145 | 387 | 98 | 258 | 572 | 417 | 101 | 1077 | 170 | 295 | 1195 |
| v/c Ratio | 0.58 | 0.48 | 0.22 | 0.82 | 0.80 | 0.76 | 0.47 | 0.78 | 0.26 | 0.84 | 0.70 |
| Control Delay | 38.7 | 45.1 | 3.6 | 57.9 | 58.4 | 23.5 | 22.7 | 27.8 | 2.9 | 48.3 | 29.0 |
| 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 | 38.7 | 45.1 | 3.6 | 57.9 | 58.4 | 23.5 | 22.7 | 27.8 | 2.9 | 48.3 | 29.0 |
| Queue Length 50th (m) | 26.7 | 46.5 | 0.0 | 51.0 | 76.8 | 30.0 | 6.7 | 107.9 | 7.8 | 52.8 | 134.2 |
| Queue Length 95th (m) | 42.7 | 61.8 | 7.0 | #82.7 | 97.2 | 70.8 | 15.8 | 156.0 | 7.4 | #100.7 | 161.8 |
| Internal Link Dist (m) | | 218.3 | | | 207.0 | | | 329.5 | | | 252.8 |
| Turn Bay Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | |
| Base Capacity (vph) | 269 | 909 | 491 | 314 | 788 | 576 | 217 | 1382 | 661 | 367 | 1714 |
| 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 | 0.54 | 0.43 | 0.20 | 0.82 | 0.73 | 0.72 | 0.47 | 0.78 | 0.26 | 0.80 | 0.70 |






























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Wonderland Road S & Commissioners Road

10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   |  |  |   |  |  |   |   |
| Traffic Volume (vph) | 142 | 379 | 96 | 253 | 561 | 409 | 99 | 1055 | 167 | 289 | 1077 | 94 |
| Future Volume (vph) | 142 | 379 | 96 | 253 | 561 | 409 | 99 | 1055 | 167 | 289 | 1077 | 94 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1787 | 3539 | 1531 | 1778 | 3610 | 1582 | 1805 | 3510 | 1428 | 1805 | 3494 | |
| Flt Permitted | 0.17 | 1.00 | 1.00 | 0.47 | 1.00 | 1.00 | 0.16 | 1.00 | 1.00 | 0.10 | 1.00 | |
| Satd. Flow (perm) | 323 | 3539 | 1531 | 880 | 3610 | 1582 | 303 | 3510 | 1428 | 198 | 3494 | |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 145 | 387 | 98 | 258 | 572 | 417 | 101 | 1077 | 170 | 295 | 1099 | 96 |
| RTOR Reduction (vph) | 0 | 0 | 76 | 0 | 0 | 237 | 0 | 0 | 99 | 0 | 5 | 0 |
| Lane Group Flow (vph) | 145 | 387 | 22 | 258 | 572 | 180 | 101 | 1077 | 71 | 295 | 1190 | 0 |
| Confl. Peds. (#/hr) | 6 | | 14 | 14 | | 6 | 12 | | 23 | 23 | | 12 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | |
| Heavy Vehicles (%) | 1% | 2% | 2% | 1% | 0% | 0% | 0% | 1% | 4% | 0% | 2% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Actuated Green, G (s) | 42.1 | 29.5 | 29.5 | 34.9 | 25.9 | 25.9 | 57.8 | 51.2 | 51.2 | 74.2 | 63.6 | |
| Effective Green, g (s) | 42.1 | 29.5 | 29.5 | 34.9 | 25.9 | 25.9 | 57.8 | 51.2 | 51.2 | 74.2 | 63.6 | |
| Actuated g/C Ratio | 0.32 | 0.23 | 0.23 | 0.27 | 0.20 | 0.20 | 0.44 | 0.39 | 0.39 | 0.57 | 0.49 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 246 | 803 | 347 | 298 | 719 | 315 | 210 | 1382 | 562 | 347 | 1709 | |
| v/s Ratio Prot | c0.06 | 0.11 | | c0.06 | 0.16 | | 0.02 | 0.31 | | c0.12 | 0.34 | |
| v/s Ratio Perm | 0.13 | | 0.01 | c0.17 | | 0.11 | 0.19 | | 0.05 | c0.36 | | |
| v/c Ratio | 0.59 | 0.48 | 0.06 | 0.87 | 0.80 | 0.57 | 0.48 | 0.78 | 0.13 | 0.85 | 0.70 | |
| Uniform Delay, d1 | 33.8 | 43.6 | 39.4 | 43.2 | 49.5 | 47.0 | 22.6 | 34.5 | 25.1 | 32.5 | 25.7 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.11 | 0.65 | 0.42 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 3.6 | 0.5 | 0.1 | 22.1 | 6.1 | 2.5 | 1.6 | 4.0 | 0.4 | 17.7 | 2.4 | |
| Delay (s) | 37.4 | 44.1 | 39.5 | 65.3 | 55.6 | 49.5 | 26.6 | 26.5 | 10.9 | 50.2 | 28.1 | |
| Level of Service | D | D | D | E | E | D | C | C | B | D | C | |
| Approach Delay (s) | | 41.8 | | | 55.6 | | | 24.6 | | | 32.5 | |
| Approach LOS | | D | | | E | | | C | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 37.6 | | | HCM 2000 Level of Service | | | | D | | |
| HCM 2000 Volume to Capacity ratio | | | 0.86 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | Sum of lost time (s) | | | | 21.3 | | | | |
| Intersection Capacity Utilization | | | 91.9% | ICU Level of Service | | | | F | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
2: Wonderland Road S & Village Green Ave

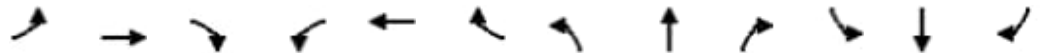
10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1270 | 67 | 33 | 1381 | 35 |
| Future Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1270 | 67 | 33 | 1381 | 35 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (m) | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Storage Length (m) | 30.0 | | 0.0 | 20.0 | | 0.0 | 35.0 | | 0.0 | 28.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | 0.99 | | 0.99 | 0.98 | | | 1.00 | | | 1.00 | |
| Frt | | 0.923 | | | 0.899 | | | 0.992 | | | 0.996 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1685 | 1691 | 0 | 1620 | 1627 | 0 | 1685 | 3493 | 0 | 1685 | 3388 | 0 |
| Flt Permitted | 0.717 | | | 0.732 | | | 0.161 | | | 0.177 | | |
| Satd. Flow (perm) | 1258 | 1691 | 0 | 1237 | 1627 | 0 | 286 | 3493 | 0 | 314 | 3388 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 20 | | | 41 | | | 9 | | | | 4 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | | 50 |
| Link Distance (m) | | 279.4 | | | 195.9 | | | 119.4 | | | | 353.5 |
| Travel Time (s) | | 20.1 | | | 14.1 | | | 8.6 | | | | 25.5 |
| Confl. Peds. (#/hr) | 8 | | 7 | 7 | | 8 | 19 | | 16 | 16 | | 19 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 5% | 4% | 0% | 5% | 0% | 2% | 4% | 0% | 4% | 3% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| Adj. Flow (vph) | 18 | 19 | 20 | 48 | 20 | 41 | 30 | 1323 | 70 | 34 | 1439 | 36 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 18 | 39 | 0 | 48 | 61 | 0 | 30 | 1393 | 0 | 34 | 1475 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.0 | | | 3.0 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.09 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.02 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings
 2: Wonderland Road S & Village Green Ave

10-20-2022

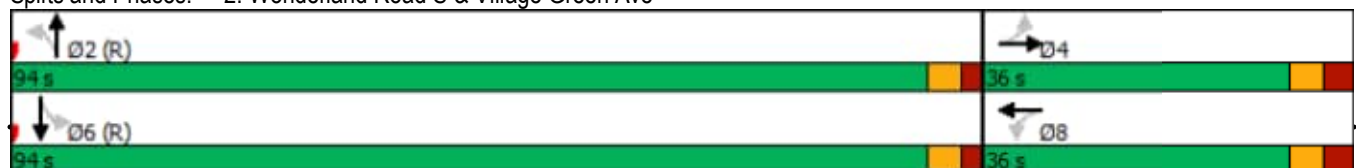


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 34.6 | 34.6 | | 34.6 | 34.6 | | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (s) | 36.0 | 36.0 | | 36.0 | 36.0 | | 94.0 | 94.0 | | 94.0 | 94.0 | |
| Total Split (%) | 27.7% | 27.7% | | 27.7% | 27.7% | | 72.3% | 72.3% | | 72.3% | 72.3% | |
| Maximum Green (s) | 29.7 | 29.7 | | 29.7 | 29.7 | | 88.6 | 88.6 | | 88.6 | 88.6 | |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 2.1 | 2.1 | | 2.1 | 2.1 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 21.0 | 21.0 | | 21.0 | 21.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 10.7 | 10.7 | | 10.7 | 10.7 | | 111.3 | 111.3 | | 111.3 | 111.3 | |
| Actuated g/C Ratio | 0.08 | 0.08 | | 0.08 | 0.08 | | 0.86 | 0.86 | | 0.86 | 0.86 | |
| v/c Ratio | 0.17 | 0.25 | | 0.48 | 0.36 | | 0.12 | 0.47 | | 0.13 | 0.51 | |
| Control Delay | 57.6 | 35.7 | | 71.3 | 29.6 | | 3.2 | 4.6 | | 2.4 | 2.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 57.6 | 35.7 | | 71.3 | 29.6 | | 3.2 | 4.6 | | 2.4 | 2.1 | |
| LOS | E | D | | E | C | | A | A | | A | A | |
| Approach Delay | | 42.7 | | | 48.0 | | | 4.6 | | | 2.1 | |
| Approach LOS | | D | | | D | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 5.6
 Intersection Capacity Utilization 61.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

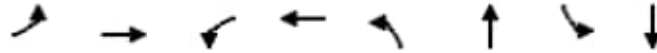
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Timings

2: Wonderland Road S & Village Green Ave

10-20-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↶ | ↷ | ↶ | ↷ | ↶ | ↷ | ↶ | ↷ |
| Traffic Volume (vph) | 17 | 18 | 46 | 19 | 29 | 1270 | 33 | 1381 |
| Future Volume (vph) | 17 | 18 | 46 | 19 | 29 | 1270 | 33 | 1381 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA |
| Protected Phases | | 4 | | 8 | | 2 | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 34.6 | 34.6 | 34.6 | 34.6 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 94.0 | 94.0 | 94.0 | 94.0 |
| Total Split (%) | 27.7% | 27.7% | 27.7% | 27.7% | 72.3% | 72.3% | 72.3% | 72.3% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.1 | 2.1 | 2.1 | 2.1 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 5.4 | 5.4 | 5.4 | 5.4 |
| Lead/Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 10.7 | 10.7 | 10.7 | 10.7 | 111.3 | 111.3 | 111.3 | 111.3 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.08 | 0.08 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.17 | 0.25 | 0.48 | 0.36 | 0.12 | 0.47 | 0.13 | 0.51 |
| Control Delay | 57.6 | 35.7 | 71.3 | 29.6 | 3.2 | 4.6 | 2.4 | 2.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.6 | 35.7 | 71.3 | 29.6 | 3.2 | 4.6 | 2.4 | 2.1 |
| LOS | E | D | E | C | A | A | A | A |
| Approach Delay | | 42.7 | | 48.0 | | 4.6 | | 2.1 |
| Approach LOS | | D | | D | | A | | A |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 5.6
 Intersection Capacity Utilization 61.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

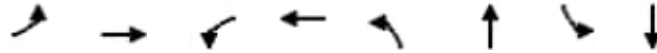
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Queues

2: Wonderland Road S & Village Green Ave

10-20-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|------|-------|------|-------|------|-------|------|-------|
| Lane Group Flow (vph) | 18 | 39 | 48 | 61 | 30 | 1393 | 34 | 1475 |
| v/c Ratio | 0.17 | 0.25 | 0.48 | 0.36 | 0.12 | 0.47 | 0.13 | 0.51 |
| Control Delay | 57.6 | 35.7 | 71.3 | 29.6 | 3.2 | 4.6 | 2.4 | 2.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.6 | 35.7 | 71.3 | 29.6 | 3.2 | 4.6 | 2.4 | 2.1 |
| Queue Length 50th (m) | 4.6 | 4.8 | 12.6 | 5.1 | 1.4 | 73.0 | 0.8 | 31.7 |
| Queue Length 95th (m) | 12.6 | 16.1 | 25.4 | 19.0 | m2.6 | 124.2 | m1.8 | 33.2 |
| Internal Link Dist (m) | | 255.4 | | 171.9 | | 95.4 | | 329.5 |
| Turn Bay Length (m) | 30.0 | | 20.0 | | 35.0 | | 28.0 | |
| Base Capacity (vph) | 287 | 401 | 282 | 403 | 244 | 2993 | 268 | 2902 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.06 | 0.10 | 0.17 | 0.15 | 0.12 | 0.47 | 0.13 | 0.51 |

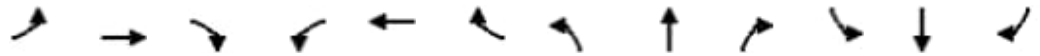
Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Wonderland Road S & Village Green Ave

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|-------|------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | |
| Traffic Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1270 | 67 | 33 | 1381 | 35 |
| Future Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1270 | 67 | 33 | 1381 | 35 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Total Lost time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 0.92 | | 1.00 | 0.90 | | 1.00 | 0.99 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1667 | 1691 | | 1605 | 1627 | | 1673 | 3494 | | 1673 | 3389 | |
| Flt Permitted | 0.72 | 1.00 | | 0.73 | 1.00 | | 0.16 | 1.00 | | 0.18 | 1.00 | |
| Satd. Flow (perm) | 1259 | 1691 | | 1236 | 1627 | | 283 | 3494 | | 312 | 3389 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 18 | 19 | 20 | 48 | 20 | 41 | 30 | 1323 | 70 | 34 | 1439 | 36 |
| RTOR Reduction (vph) | 0 | 19 | 0 | 0 | 38 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 18 | 20 | 0 | 48 | 23 | 0 | 30 | 1392 | 0 | 34 | 1474 | 0 |
| Confl. Peds. (#/hr) | 8 | | 7 | 7 | | 8 | 19 | | 16 | 16 | | 19 |
| Heavy Vehicles (%) | 0% | 0% | 5% | 4% | 0% | 5% | 0% | 2% | 4% | 0% | 4% | 3% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 9.3 | 9.3 | | 9.3 | 9.3 | | 109.0 | 109.0 | | 109.0 | 109.0 | |
| Effective Green, g (s) | 9.3 | 9.3 | | 9.3 | 9.3 | | 109.0 | 109.0 | | 109.0 | 109.0 | |
| Actuated g/C Ratio | 0.07 | 0.07 | | 0.07 | 0.07 | | 0.84 | 0.84 | | 0.84 | 0.84 | |
| Clearance Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 90 | 120 | | 88 | 116 | | 237 | 2929 | | 261 | 2841 | |
| v/s Ratio Prot | | 0.01 | | | 0.01 | | | 0.40 | | | c0.44 | |
| v/s Ratio Perm | 0.01 | | | c0.04 | | | 0.11 | | | 0.11 | | |
| v/c Ratio | 0.20 | 0.17 | | 0.55 | 0.20 | | 0.13 | 0.48 | | 0.13 | 0.52 | |
| Uniform Delay, d1 | 56.8 | 56.7 | | 58.3 | 56.8 | | 1.9 | 2.8 | | 1.9 | 3.0 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.79 | 1.31 | | 0.59 | 0.49 | |
| Incremental Delay, d2 | 1.1 | 0.7 | | 6.7 | 0.8 | | 1.0 | 0.5 | | 0.8 | 0.5 | |
| Delay (s) | 57.9 | 57.4 | | 65.1 | 57.7 | | 2.5 | 4.2 | | 1.9 | 2.0 | |
| Level of Service | E | E | | E | E | | A | A | | A | A | |
| Approach Delay (s) | | 57.6 | | | 60.9 | | | 4.2 | | | 2.0 | |
| Approach LOS | | E | | | E | | | A | | | A | |

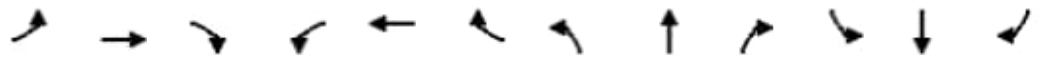
| Intersection Summary | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 6.1 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.52 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 11.7 |
| Intersection Capacity Utilization | 61.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings

3: Wonderland Road S & Mall Access East (N)/Private Access

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 8 | 0 | 25 | 3 | 0 | 22 | 14 | 1358 | 4 | 24 | 1354 | 65 |
| Future Volume (vph) | 8 | 0 | 25 | 3 | 0 | 22 | 14 | 1358 | 4 | 24 | 1354 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 50.0 | | 0.0 | 30.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.881 | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.994 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 0 | 1442 | 0 | 1664 | 0 | 1583 | 3539 | 0 | 1805 | 3471 | 1568 |
| Flt Permitted | 0.950 | | | | 0.994 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 0 | 1442 | 0 | 1664 | 0 | 1583 | 3539 | 0 | 1805 | 3471 | 1568 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | 50 | |
| Link Distance (m) | | 100.3 | | | 66.2 | | | 161.3 | | | 119.4 | |
| Travel Time (s) | | 18.1 | | | 11.9 | | | 11.6 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 14 | | 11 | 11 | | 14 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 12% | 0% | 0% | 0% | 14% | 2% | 0% | 0% | 4% | 3% |
| Adj. Flow (vph) | 8 | 0 | 26 | 3 | 0 | 23 | 14 | 1400 | 4 | 25 | 1396 | 67 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 8 | 0 | 26 | 0 | 26 | 0 | 14 | 1404 | 0 | 25 | 1396 | 67 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | |
|-----------------------------------|------------------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 54.1% |
| | ICU Level of Service A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

3: Wonderland Road S & Mall Access East (N)/Private Access

10-20-2022

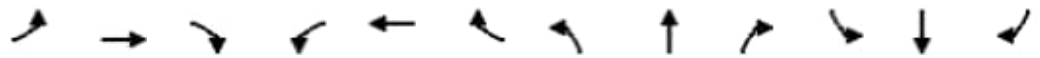


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|------|----------------------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 8 | 0 | 25 | 3 | 0 | 22 | 14 | 1358 | 4 | 24 | 1354 | 65 |
| Future Volume (Veh/h) | 8 | 0 | 25 | 3 | 0 | 22 | 14 | 1358 | 4 | 24 | 1354 | 65 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 8 | 0 | 26 | 3 | 0 | 23 | 14 | 1400 | 4 | 25 | 1396 | 67 |
| Pedestrians | 14 | | | 11 | | | | | | | | |
| Lane Width (m) | 3.6 | | | 3.6 | | | | | | | | |
| Walking Speed (m/s) | 1.2 | | | 1.2 | | | | | | | | |
| Percent Blockage | 1 | | | 1 | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | 161 | | | 119 | | |
| pX, platoon unblocked | 0.92 | 0.92 | 0.88 | 0.92 | 0.92 | 0.86 | 0.88 | | | | 0.86 | |
| vC, conflicting volume | 2211 | 2903 | 712 | 2215 | 2968 | 713 | 1477 | | | | 1415 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1541 | 2295 | 393 | 1545 | 2366 | 330 | 1265 | | | | 1149 | |
| tC, single (s) | 7.5 | 6.5 | 7.1 | 7.5 | 6.5 | 6.9 | 4.4 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 2.3 | | | | 2.2 | |
| p0 queue free % | 88 | 100 | 95 | 95 | 100 | 96 | 97 | | | | 95 | |
| cM capacity (veh/h) | 64 | 33 | 502 | 63 | 29 | 570 | 420 | | | | 522 | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | SB 4 | | |
| Volume Total | 8 | 26 | 26 | 14 | 933 | 471 | 25 | 698 | 698 | 67 | | |
| Volume Left | 8 | 0 | 3 | 14 | 0 | 0 | 25 | 0 | 0 | 0 | | |
| Volume Right | 0 | 26 | 23 | 0 | 0 | 4 | 0 | 0 | 0 | 67 | | |
| cSH | 64 | 502 | 297 | 420 | 1700 | 1700 | 522 | 1700 | 1700 | 1700 | | |
| Volume to Capacity | 0.12 | 0.05 | 0.09 | 0.03 | 0.55 | 0.28 | 0.05 | 0.41 | 0.41 | 0.04 | | |
| Queue Length 95th (m) | 3.2 | 1.3 | 2.3 | 0.8 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | | |
| Control Delay (s) | 68.6 | 12.6 | 18.3 | 13.9 | 0.0 | 0.0 | 12.2 | 0.0 | 0.0 | 0.0 | | |
| Lane LOS | F | B | C | B | | | | B | | | | |
| Approach Delay (s) | 25.8 | 18.3 | | 0.1 | | | | 0.2 | | | | |
| Approach LOS | D | C | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 0.6 | | | | | | | | | | | |
| Intersection Capacity Utilization | 54.1% | | ICU Level of Service | | | | | | A | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022

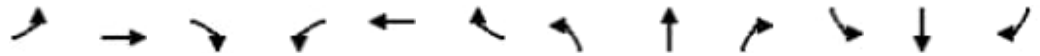


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↗ | | ↔ | | ↗ | ↕ | | ↗ | ↕ | ↗ |
| Traffic Volume (vph) | 114 | 0 | 42 | 4 | 0 | 4 | 28 | 1273 | 13 | 13 | 1349 | 50 |
| Future Volume (vph) | 114 | 0 | 42 | 4 | 0 | 4 | 28 | 1273 | 13 | 13 | 1349 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 35.0 | | 0.0 | 40.0 | | 35.0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | 0.99 | 0.97 | | 0.98 | | 1.00 | 1.00 | | | | 0.97 |
| Frt | | | 0.850 | | 0.932 | | | 0.998 | | | | 0.850 |
| Flt Protected | | 0.950 | | | 0.976 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1641 | 1615 | 0 | 1706 | 0 | 1805 | 3565 | 0 | 1805 | 3471 | 1526 |
| Flt Permitted | | 0.752 | | | 0.866 | | 0.162 | | | 0.176 | | |
| Satd. Flow (perm) | 0 | 1281 | 1572 | 0 | 1505 | 0 | 307 | 3565 | 0 | 334 | 3471 | 1481 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 44 | | 23 | | | 2 | | | | 31 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | | 50 |
| Link Distance (m) | | 105.0 | | | 57.0 | | | 158.8 | | | | 161.3 |
| Travel Time (s) | | 18.9 | | | 10.3 | | | 11.4 | | | | 11.6 |
| Confl. Peds. (#/hr) | 8 | | 10 | 10 | | 8 | 12 | | 14 | 14 | | 12 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 10% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 4% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Adj. Flow (vph) | 119 | 0 | 44 | 4 | 0 | 4 | 29 | 1326 | 14 | 14 | 1405 | 52 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 119 | 44 | 0 | 8 | 0 | 29 | 1340 | 0 | 14 | 1405 | 52 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.05 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | | 28.7 | 28.7 | | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | | 91.0 | 91.0 | | 91.0 | 91.0 | 91.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 30.0% | | 70.0% | 70.0% | | 70.0% | 70.0% | 70.0% |
| Maximum Green (s) | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | | 85.3 | 85.3 | | 85.3 | 85.3 | 85.3 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 19.0 | 19.0 | 19.0 | 16.0 | 16.0 | | 16.0 | 16.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | | 17.4 | 17.4 | | 17.4 | | 100.2 | 100.2 | | 100.2 | 100.2 | 100.2 |
| Actuated g/C Ratio | | 0.13 | 0.13 | | 0.13 | | 0.77 | 0.77 | | 0.77 | 0.77 | 0.77 |
| v/c Ratio | | 0.70 | 0.18 | | 0.04 | | 0.12 | 0.49 | | 0.05 | 0.53 | 0.05 |
| Control Delay | | 73.7 | 14.3 | | 3.6 | | 3.0 | 2.7 | | 2.5 | 4.9 | 0.5 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 73.7 | 14.3 | | 3.6 | | 3.0 | 2.7 | | 2.5 | 4.9 | 0.5 |
| LOS | | E | B | | A | | A | A | | A | A | A |
| Approach Delay | | 57.6 | | | 3.6 | | | 2.7 | | | 4.8 | |
| Approach LOS | | E | | | A | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 40 (31%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 6.7
 Intersection LOS: A
 Intersection Capacity Utilization 72.5%
 ICU Level of Service C
 Analysis Period (min) 15

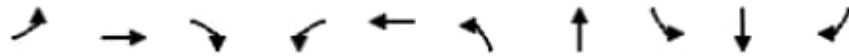
Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022

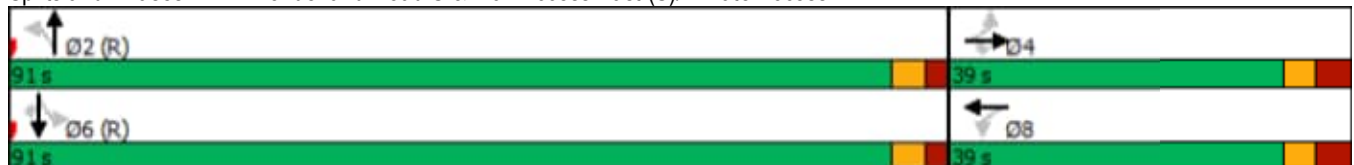


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↔ | | ↔ | ↔ | ↔ | ↔ | ↔ | ↔ |
| Traffic Volume (vph) | 114 | 0 | 42 | 4 | 0 | 28 | 1273 | 13 | 1349 | 50 |
| Future Volume (vph) | 114 | 0 | 42 | 4 | 0 | 28 | 1273 | 13 | 1349 | 50 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | 28.7 | 28.7 | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | | 17.4 | 17.4 | | 17.4 | 100.2 | 100.2 | 100.2 | 100.2 | 100.2 |
| Actuated g/C Ratio | | 0.13 | 0.13 | | 0.13 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| v/c Ratio | | 0.70 | 0.18 | | 0.04 | 0.12 | 0.49 | 0.05 | 0.53 | 0.05 |
| Control Delay | | 73.7 | 14.3 | | 3.6 | 3.0 | 2.7 | 2.5 | 4.9 | 0.5 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 73.7 | 14.3 | | 3.6 | 3.0 | 2.7 | 2.5 | 4.9 | 0.5 |
| LOS | | E | B | | A | A | A | A | A | A |
| Approach Delay | | 57.6 | | | 3.6 | | 2.7 | | 4.8 | |
| Approach LOS | | E | | | A | | A | | A | |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 40 (31%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 6.7
 Intersection LOS: A
 Intersection Capacity Utilization 72.5%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Queues

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022



| Lane Group | EBT | EBR | WBT | NBL | NBT | SBL | SBT | SBR |
|------------------------|------|------|------|------|-------|------|-------|------|
| Lane Group Flow (vph) | 119 | 44 | 8 | 29 | 1340 | 14 | 1405 | 52 |
| v/c Ratio | 0.70 | 0.18 | 0.04 | 0.12 | 0.49 | 0.05 | 0.53 | 0.05 |
| Control Delay | 73.7 | 14.3 | 3.6 | 3.0 | 2.7 | 2.5 | 4.9 | 0.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 73.7 | 14.3 | 3.6 | 3.0 | 2.7 | 2.5 | 4.9 | 0.5 |
| Queue Length 50th (m) | 31.1 | 0.0 | 0.0 | 0.9 | 25.3 | 0.2 | 10.0 | 0.2 |
| Queue Length 95th (m) | 49.8 | 10.7 | 1.3 | m2.2 | 30.2 | m1.1 | 125.8 | m1.1 |
| Internal Link Dist (m) | 81.0 | | 33.0 | | 134.8 | | 137.3 | |
| Turn Bay Length (m) | | | | 35.0 | | 40.0 | | 35.0 |
| Base Capacity (vph) | 318 | 423 | 391 | 236 | 2748 | 257 | 2675 | 1149 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 1 | 0 | 0 | 0 | 0 | 106 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.37 | 0.10 | 0.02 | 0.12 | 0.49 | 0.05 | 0.55 | 0.05 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|------|------|-------|-------|------|-------|-------|-------|
| Lane Configurations | | 4 | 7 | | 4 | | 7 | 4 | 7 | 7 | 4 | 7 |
| Traffic Volume (vph) | 114 | 0 | 42 | 4 | 0 | 4 | 28 | 1273 | 13 | 13 | 1349 | 50 |
| Future Volume (vph) | 114 | 0 | 42 | 4 | 0 | 4 | 28 | 1273 | 13 | 13 | 1349 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frbp, ped/bikes | | 1.00 | 0.97 | | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | | 0.99 | 1.00 | | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 0.85 | | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | | 0.98 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1619 | 1572 | | 1696 | | 1802 | 3567 | | 1797 | 3471 | 1481 |
| Flt Permitted | | 0.75 | 1.00 | | 0.87 | | 0.16 | 1.00 | | 0.18 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1282 | 1572 | | 1506 | | 308 | 3567 | | 334 | 3471 | 1481 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 119 | 0 | 44 | 4 | 0 | 4 | 29 | 1326 | 14 | 14 | 1405 | 52 |
| RTOR Reduction (vph) | 0 | 0 | 38 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Lane Group Flow (vph) | 0 | 119 | 6 | 0 | 1 | 0 | 29 | 1340 | 0 | 14 | 1405 | 45 |
| Confl. Peds. (#/hr) | 8 | | 10 | 10 | | 8 | 12 | | 14 | 14 | | 12 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Heavy Vehicles (%) | 10% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 4% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Actuated Green, G (s) | | 17.4 | 17.4 | | 17.4 | | 100.2 | 100.2 | | 100.2 | 100.2 | 100.2 |
| Effective Green, g (s) | | 17.4 | 17.4 | | 17.4 | | 100.2 | 100.2 | | 100.2 | 100.2 | 100.2 |
| Actuated g/C Ratio | | 0.13 | 0.13 | | 0.13 | | 0.77 | 0.77 | | 0.77 | 0.77 | 0.77 |
| Clearance Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 171 | 210 | | 201 | | 237 | 2749 | | 257 | 2675 | 1141 |
| v/s Ratio Prot | | | | | | | | 0.38 | | | c0.40 | |
| v/s Ratio Perm | | c0.09 | 0.00 | | 0.00 | | 0.09 | | | 0.04 | | 0.03 |
| v/c Ratio | | 0.70 | 0.03 | | 0.01 | | 0.12 | 0.49 | | 0.05 | 0.53 | 0.04 |
| Uniform Delay, d1 | | 53.8 | 48.9 | | 48.8 | | 3.8 | 5.5 | | 3.6 | 5.7 | 3.5 |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.40 | 0.35 | | 0.44 | 0.66 | 0.18 |
| Incremental Delay, d2 | | 11.6 | 0.1 | | 0.0 | | 1.0 | 0.6 | | 0.4 | 0.7 | 0.1 |
| Delay (s) | | 65.4 | 49.0 | | 48.8 | | 2.4 | 2.5 | | 1.9 | 4.5 | 0.7 |
| Level of Service | | E | D | | D | | A | A | | A | A | A |
| Approach Delay (s) | | 61.0 | | | 48.8 | | | 2.5 | | | 4.3 | |
| Approach LOS | | E | | | D | | | A | | | A | |

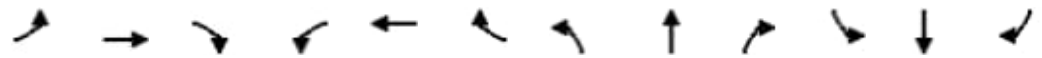
Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 6.7 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.55 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 12.4 |
| Intersection Capacity Utilization | 72.5% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings
5: Wonderland Road S & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 106 | 143 | 157 | 73 | 121 | 67 | 157 | 1103 | 59 | 114 | 1118 | 116 |
| Future Volume (vph) | 106 | 143 | 157 | 73 | 121 | 67 | 157 | 1103 | 59 | 114 | 1118 | 116 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 40.0 | | 95.0 | 30.0 | | 30.0 | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | 0.98 | | 0.96 | 0.98 | 0.99 | | | | 0.92 | 0.99 | | 0.94 |
| Frt | | | 0.850 | | 0.947 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1900 | 1522 | 1805 | 3290 | 0 | 1752 | 3574 | 1568 | 1770 | 3539 | 1553 |
| Flt Permitted | 0.632 | | | 0.435 | | | 0.177 | | | 0.197 | | |
| Satd. Flow (perm) | 1166 | 1900 | 1467 | 812 | 3290 | 0 | 327 | 3574 | 1447 | 365 | 3539 | 1462 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 160 | | 68 | | | | 97 | | | 97 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 157.9 | | | 309.4 | | | 1206.3 | | | 158.8 | |
| Travel Time (s) | | 11.4 | | | 22.3 | | | 86.9 | | | 11.4 | |
| Confl. Peds. (#/hr) | 23 | | 22 | 22 | | 23 | 34 | | 25 | 25 | | 34 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 4% | 0% | 4% | 0% | 3% | 1% | 3% | 2% | 2% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 108 | 146 | 160 | 74 | 123 | 68 | 160 | 1126 | 60 | 116 | 1141 | 118 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 108 | 146 | 160 | 74 | 191 | 0 | 160 | 1126 | 60 | 116 | 1141 | 118 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.03 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings

5: Wonderland Road S & Viscount Rd

10-20-2022

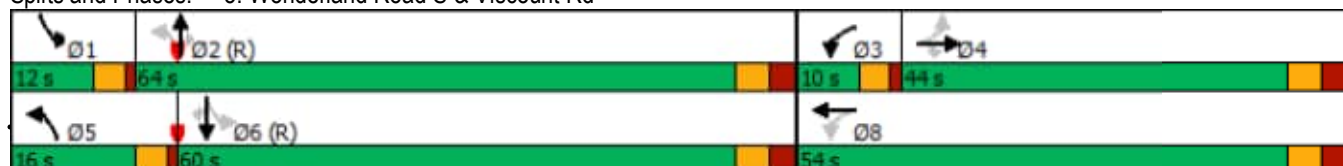


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | | 16.0 | 64.0 | 64.0 | 12.0 | 60.0 | 60.0 |
| Total Split (%) | 33.8% | 33.8% | 33.8% | 7.7% | 41.5% | | 12.3% | 49.2% | 49.2% | 9.2% | 46.2% | 46.2% |
| Maximum Green (s) | 37.5 | 37.5 | 37.5 | 6.0 | 47.5 | | 12.0 | 58.0 | 58.0 | 8.0 | 54.0 | 54.0 |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | None | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | 7.0 | | | 7.0 | 7.0 | | 7.0 | 7.0 |
| Flash Dont Walk (s) | 29.0 | 29.0 | 29.0 | | 29.0 | | | 21.0 | 21.0 | | 21.0 | 21.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | 0 | | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 17.5 | 17.5 | 17.5 | 28.0 | 25.5 | | 91.9 | 79.7 | 79.7 | 87.9 | 77.6 | 77.6 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.13 | 0.22 | 0.20 | | 0.71 | 0.61 | 0.61 | 0.68 | 0.60 | 0.60 |
| v/c Ratio | 0.69 | 0.57 | 0.48 | 0.34 | 0.27 | | 0.46 | 0.51 | 0.06 | 0.35 | 0.54 | 0.13 |
| Control Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | | 15.6 | 17.0 | 2.9 | 10.1 | 13.7 | 2.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | | 15.6 | 17.0 | 2.9 | 10.1 | 13.8 | 2.3 |
| LOS | E | E | B | D | C | | B | B | A | B | B | A |
| Approach Delay | | 47.0 | | | 31.6 | | | 16.2 | | | 12.5 | |
| Approach LOS | | D | | | C | | | B | | | B | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 59 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 19.7
 Intersection LOS: B
 Intersection Capacity Utilization 83.6%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Timings

5: Wonderland Road S & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↑ | ↗ | ↖ | ↕ | ↖ | ↕ | ↗ | ↖ | ↕ | ↗ |
| Traffic Volume (vph) | 106 | 143 | 157 | 73 | 121 | 157 | 1103 | 59 | 114 | 1118 | 116 |
| Future Volume (vph) | 106 | 143 | 157 | 73 | 121 | 157 | 1103 | 59 | 114 | 1118 | 116 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | 16.0 | 64.0 | 64.0 | 12.0 | 60.0 | 60.0 |
| Total Split (%) | 33.8% | 33.8% | 33.8% | 7.7% | 41.5% | 12.3% | 49.2% | 49.2% | 9.2% | 46.2% | 46.2% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 17.5 | 17.5 | 17.5 | 28.0 | 25.5 | 91.9 | 79.7 | 79.7 | 87.9 | 77.6 | 77.6 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.13 | 0.22 | 0.20 | 0.71 | 0.61 | 0.61 | 0.68 | 0.60 | 0.60 |
| v/c Ratio | 0.69 | 0.57 | 0.48 | 0.34 | 0.27 | 0.46 | 0.51 | 0.06 | 0.35 | 0.54 | 0.13 |
| Control Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | 15.6 | 17.0 | 2.9 | 10.1 | 13.7 | 2.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | 15.6 | 17.0 | 2.9 | 10.1 | 13.8 | 2.3 |
| LOS | E | E | B | D | C | B | B | A | B | B | A |
| Approach Delay | | 47.0 | | | 31.6 | | 16.2 | | | 12.5 | |
| Approach LOS | | D | | | C | | B | | | B | |

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 59 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 19.7

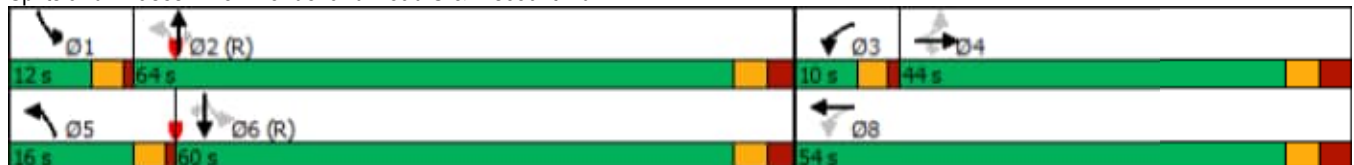
Intersection LOS: B

Intersection Capacity Utilization 83.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Queues

5: Wonderland Road S & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|-------|-------|--------|------|------|-------|------|
| Lane Group Flow (vph) | 108 | 146 | 160 | 74 | 191 | 160 | 1126 | 60 | 116 | 1141 | 118 |
| v/c Ratio | 0.69 | 0.57 | 0.48 | 0.34 | 0.27 | 0.46 | 0.51 | 0.06 | 0.35 | 0.54 | 0.13 |
| Control Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | 15.6 | 17.0 | 2.9 | 10.1 | 13.7 | 2.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | 15.6 | 17.0 | 2.9 | 10.1 | 13.8 | 2.3 |
| Queue Length 50th (m) | 29.3 | 39.0 | 0.0 | 16.1 | 14.4 | 11.4 | 73.7 | 0.2 | 5.0 | 55.7 | 0.0 |
| Queue Length 95th (m) | 47.9 | 59.4 | 19.6 | 27.5 | 23.5 | m34.1 | 114.4 | m1.6 | 11.5 | 178.4 | 6.0 |
| Internal Link Dist (m) | | 133.9 | | | 285.4 | | 1182.3 | | | 134.8 | |
| Turn Bay Length (m) | 40.0 | | 95.0 | 30.0 | | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Base Capacity (vph) | 336 | 548 | 537 | 220 | 1245 | 376 | 2191 | 924 | 344 | 2112 | 912 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 238 | 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 | 0.32 | 0.27 | 0.30 | 0.34 | 0.15 | 0.43 | 0.51 | 0.06 | 0.34 | 0.61 | 0.13 |
























Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

5: Wonderland Road S & Viscount Rd

10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 106 | 143 | 157 | 73 | 121 | 67 | 157 | 1103 | 59 | 114 | 1118 | 116 |
| Future Volume (vph) | 106 | 143 | 157 | 73 | 121 | 67 | 157 | 1103 | 59 | 114 | 1118 | 116 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.96 | 1.00 | 0.99 | | 1.00 | 1.00 | 0.92 | 1.00 | 1.00 | 0.94 |
| Flpb, ped/bikes | 0.98 | 1.00 | 1.00 | 0.99 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1753 | 1900 | 1466 | 1792 | 3288 | | 1751 | 3574 | 1447 | 1767 | 3539 | 1462 |
| Flt Permitted | 0.63 | 1.00 | 1.00 | 0.43 | 1.00 | | 0.18 | 1.00 | 1.00 | 0.20 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1165 | 1900 | 1466 | 820 | 3288 | | 327 | 3574 | 1447 | 366 | 3539 | 1462 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 108 | 146 | 160 | 74 | 123 | 68 | 160 | 1126 | 60 | 116 | 1141 | 118 |
| RTOR Reduction (vph) | 0 | 0 | 138 | 0 | 54 | 0 | 0 | 0 | 24 | 0 | 0 | 40 |
| Lane Group Flow (vph) | 108 | 146 | 22 | 74 | 137 | 0 | 160 | 1126 | 36 | 116 | 1141 | 78 |
| Confl. Peds. (#/hr) | 23 | | 22 | 22 | | 23 | 34 | | 25 | 25 | | 34 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 0% | 4% | 0% | 4% | 0% | 3% | 1% | 3% | 2% | 2% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Actuated Green, G (s) | 17.5 | 17.5 | 17.5 | 26.3 | 26.3 | | 89.3 | 78.9 | 78.9 | 85.1 | 76.8 | 76.8 |
| Effective Green, g (s) | 17.5 | 17.5 | 17.5 | 26.3 | 26.3 | | 89.3 | 78.9 | 78.9 | 85.1 | 76.8 | 76.8 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.13 | 0.20 | 0.20 | | 0.69 | 0.61 | 0.61 | 0.65 | 0.59 | 0.59 |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 156 | 255 | 197 | 201 | 665 | | 338 | 2169 | 878 | 329 | 2090 | 863 |
| v/s Ratio Prot | | 0.08 | | c0.01 | 0.04 | | c0.04 | 0.32 | | 0.02 | c0.32 | |
| v/s Ratio Perm | c0.09 | | 0.01 | 0.06 | | | 0.29 | | 0.03 | 0.21 | | 0.05 |
| v/c Ratio | 0.69 | 0.57 | 0.11 | 0.37 | 0.21 | | 0.47 | 0.52 | 0.04 | 0.35 | 0.55 | 0.09 |
| Uniform Delay, d1 | 53.7 | 52.7 | 49.4 | 43.4 | 43.2 | | 10.1 | 14.7 | 10.3 | 9.8 | 16.1 | 11.5 |
| Progression Factor | 1.02 | 1.01 | 1.46 | 1.00 | 1.00 | | 1.85 | 1.02 | 3.69 | 1.08 | 0.72 | 0.45 |
| Incremental Delay, d2 | 12.4 | 3.1 | 0.2 | 1.1 | 0.2 | | 0.7 | 0.6 | 0.1 | 0.6 | 0.9 | 0.2 |
| Delay (s) | 66.9 | 56.4 | 72.4 | 44.5 | 43.3 | | 19.3 | 15.6 | 38.1 | 11.1 | 12.4 | 5.3 |
| Level of Service | E | E | E | D | D | | B | B | D | B | B | A |
| Approach Delay (s) | | 65.4 | | | 43.6 | | | 17.0 | | | 11.7 | |
| Approach LOS | | E | | | D | | | B | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 22.8 | HCM 2000 Level of Service | | | | C | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.56 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | Sum of lost time (s) | | | | 20.5 | | | | |
| Intersection Capacity Utilization | | | 83.6% | ICU Level of Service | | | | E | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
6: Wonderland Road S & Southdale Road W

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 170 | 406 | 82 | 203 | 276 | 368 | 105 | 863 | 106 | 321 | 812 | 48 |
| Future Volume (vph) | 170 | 406 | 82 | 203 | 276 | 368 | 105 | 863 | 106 | 321 | 812 | 48 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 35.0 | | 35.0 | 80.0 | | 0.0 | 75.0 | | 0.0 | 35.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | | 0.95 | 0.98 | 0.98 | | 0.99 | 1.00 | | | 1.00 | |
| Frt | | | 0.850 | | 0.914 | | | 0.984 | | | 0.992 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1736 | 3574 | 1583 | 1805 | 3191 | 0 | 1752 | 3494 | 0 | 1752 | 3428 | 0 |
| Flt Permitted | 0.147 | | | 0.426 | | | 0.320 | | | 0.123 | | |
| Satd. Flow (perm) | 267 | 3574 | 1504 | 792 | 3191 | 0 | 585 | 3494 | 0 | 227 | 3428 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 93 | | 250 | | | 11 | | | 5 | |
| Link Speed (k/h) | | 60 | | | 60 | | | 60 | | | 60 | |
| Link Distance (m) | | 446.9 | | | 385.1 | | | 438.6 | | | 1206.3 | |
| Travel Time (s) | | 26.8 | | | 23.1 | | | 26.3 | | | 72.4 | |
| Confl. Peds. (#/hr) | 18 | | 32 | 32 | | 18 | 36 | | 21 | 21 | | 36 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 4% | 1% | 2% | 0% | 2% | 1% | 3% | 1% | 3% | 3% | 4% | 6% |
| Adj. Flow (vph) | 173 | 414 | 84 | 207 | 282 | 376 | 107 | 881 | 108 | 328 | 829 | 49 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 173 | 414 | 84 | 207 | 658 | 0 | 107 | 989 | 0 | 328 | 878 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

Lanes, Volumes, Timings

6: Wonderland Road S & Southdale Road W

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | | 9.0 | 35.1 | | 9.0 | 35.1 | |
| Total Split (s) | 16.0 | 44.0 | 44.0 | 12.0 | 40.0 | | 23.0 | 48.0 | | 26.0 | 51.0 | |
| Total Split (%) | 12.3% | 33.8% | 33.8% | 9.2% | 30.8% | | 17.7% | 36.9% | | 20.0% | 39.2% | |
| Maximum Green (s) | 12.0 | 37.4 | 37.4 | 8.0 | 33.4 | | 19.0 | 41.9 | | 22.0 | 44.9 | |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | | 3.0 | 3.7 | | 3.0 | 3.7 | |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | | 1.0 | 2.4 | | 1.0 | 2.4 | |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | C-Max | | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 25.0 | 25.0 | | 25.0 | | | 22.0 | | | 22.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 41.6 | 27.3 | 27.3 | 34.2 | 23.6 | | 60.4 | 49.3 | | 80.1 | 65.1 | |
| Actuated g/C Ratio | 0.32 | 0.21 | 0.21 | 0.26 | 0.18 | | 0.46 | 0.38 | | 0.62 | 0.50 | |
| v/c Ratio | 0.80 | 0.55 | 0.22 | 0.77 | 0.84 | | 0.30 | 0.74 | | 0.76 | 0.51 | |
| Control Delay | 58.5 | 47.9 | 7.2 | 55.5 | 41.4 | | 15.8 | 40.1 | | 52.7 | 9.1 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 58.5 | 47.9 | 7.2 | 55.5 | 41.4 | | 15.8 | 40.1 | | 52.7 | 9.1 | |
| LOS | E | D | A | E | D | | B | D | | D | A | |
| Approach Delay | | 45.6 | | | 44.8 | | | 37.7 | | | 20.9 | |
| Approach LOS | | D | | | D | | | D | | | C | |

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 35.4

Intersection LOS: D

Intersection Capacity Utilization 95.2%

ICU Level of Service F

Analysis Period (min) 15

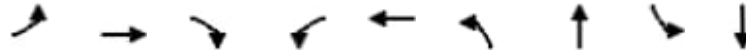
Splits and Phases: 6: Wonderland Road S & Southdale Road W



Timings

6: Wonderland Road S & Southdale Road W

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↶ | ↗↗ | ↶ | ↶ | ↗↗ | ↶ | ↗↗ | ↶ | ↗↗ |
| Traffic Volume (vph) | 170 | 406 | 82 | 203 | 276 | 105 | 863 | 321 | 812 |
| Future Volume (vph) | 170 | 406 | 82 | 203 | 276 | 105 | 863 | 321 | 812 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | 9.0 | 35.1 | 9.0 | 35.1 |
| Total Split (s) | 16.0 | 44.0 | 44.0 | 12.0 | 40.0 | 23.0 | 48.0 | 26.0 | 51.0 |
| Total Split (%) | 12.3% | 33.8% | 33.8% | 9.2% | 30.8% | 17.7% | 36.9% | 20.0% | 39.2% |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | 3.0 | 3.7 | 3.0 | 3.7 |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 1.0 | 2.4 | 1.0 | 2.4 |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 4.0 | 6.1 | 4.0 | 6.1 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | None | C-Max |
| Act Effct Green (s) | 41.6 | 27.3 | 27.3 | 34.2 | 23.6 | 60.4 | 49.3 | 80.1 | 65.1 |
| Actuated g/C Ratio | 0.32 | 0.21 | 0.21 | 0.26 | 0.18 | 0.46 | 0.38 | 0.62 | 0.50 |
| v/c Ratio | 0.80 | 0.55 | 0.22 | 0.77 | 0.84 | 0.30 | 0.74 | 0.76 | 0.51 |
| Control Delay | 58.5 | 47.9 | 7.2 | 55.5 | 41.4 | 15.8 | 40.1 | 52.7 | 9.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 58.5 | 47.9 | 7.2 | 55.5 | 41.4 | 15.8 | 40.1 | 52.7 | 9.1 |
| LOS | E | D | A | E | D | B | D | D | A |
| Approach Delay | | 45.6 | | | 44.8 | | 37.7 | | 20.9 |
| Approach LOS | | D | | | D | | D | | C |

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 35.4

Intersection LOS: D

Intersection Capacity Utilization 95.2%

ICU Level of Service F

Analysis Period (min) 15

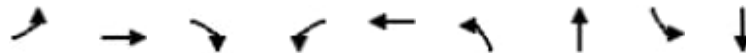
Splits and Phases: 6: Wonderland Road S & Southdale Road W



Queues

6: Wonderland Road S & Southdale Road W

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|------|------|-------|------|--------|--------|--------|
| Lane Group Flow (vph) | 173 | 414 | 84 | 207 | 658 | 107 | 989 | 328 | 878 |
| v/c Ratio | 0.80 | 0.55 | 0.22 | 0.77 | 0.84 | 0.30 | 0.74 | 0.76 | 0.51 |
| Control Delay | 58.5 | 47.9 | 7.2 | 55.5 | 41.4 | 15.8 | 40.1 | 52.7 | 9.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 58.5 | 47.9 | 7.2 | 55.5 | 41.4 | 15.8 | 40.1 | 52.7 | 9.1 |
| Queue Length 50th (m) | 35.0 | 52.9 | 0.0 | 42.7 | 58.3 | 11.1 | 123.4 | 42.8 | 20.2 |
| Queue Length 95th (m) | #55.1 | 64.5 | 11.0 | 58.9 | 75.6 | 22.8 | #160.1 | #105.7 | 25.4 |
| Internal Link Dist (m) | | 422.9 | | | 361.1 | | 414.6 | | 1182.3 |
| Turn Bay Length (m) | 35.0 | | 35.0 | 80.0 | | 75.0 | | 35.0 | |
| Base Capacity (vph) | 221 | 1028 | 498 | 270 | 1005 | 487 | 1332 | 435 | 1719 |
| 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 | 0.78 | 0.40 | 0.17 | 0.77 | 0.65 | 0.22 | 0.74 | 0.75 | 0.51 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

6: Wonderland Road S & Southdale Road W

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| Lane Configurations | ↖ | ↗↗ | ↖ | ↖ | ↗↗ | | ↖ | ↗↗ | | ↖ | ↗↗ | |
| Traffic Volume (vph) | 170 | 406 | 82 | 203 | 276 | 368 | 105 | 863 | 106 | 321 | 812 | 48 |
| Future Volume (vph) | 170 | 406 | 82 | 203 | 276 | 368 | 105 | 863 | 106 | 321 | 812 | 48 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.95 | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.91 | | 1.00 | 0.98 | | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1735 | 3574 | 1504 | 1790 | 3192 | | 1745 | 3493 | | 1752 | 3427 | |
| Flt Permitted | 0.15 | 1.00 | 1.00 | 0.43 | 1.00 | | 0.32 | 1.00 | | 0.12 | 1.00 | |
| Satd. Flow (perm) | 268 | 3574 | 1504 | 804 | 3192 | | 588 | 3493 | | 226 | 3427 | |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 173 | 414 | 84 | 207 | 282 | 376 | 107 | 881 | 108 | 328 | 829 | 49 |
| RTOR Reduction (vph) | 0 | 0 | 66 | 0 | 205 | 0 | 0 | 7 | 0 | 0 | 2 | 0 |
| Lane Group Flow (vph) | 173 | 414 | 18 | 207 | 453 | 0 | 107 | 982 | 0 | 328 | 876 | 0 |
| Confl. Peds. (#/hr) | 18 | | 32 | 32 | | 18 | 36 | | 21 | 21 | | 36 |
| Heavy Vehicles (%) | 4% | 1% | 2% | 0% | 2% | 1% | 3% | 1% | 3% | 3% | 4% | 6% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 39.0 | 27.3 | 27.3 | 31.6 | 23.6 | | 58.2 | 49.3 | | 78.0 | 65.1 | |
| Effective Green, g (s) | 39.0 | 27.3 | 27.3 | 31.6 | 23.6 | | 58.2 | 49.3 | | 78.0 | 65.1 | |
| Actuated g/C Ratio | 0.30 | 0.21 | 0.21 | 0.24 | 0.18 | | 0.45 | 0.38 | | 0.60 | 0.50 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 212 | 750 | 315 | 256 | 579 | | 342 | 1324 | | 425 | 1716 | |
| v/s Ratio Prot | c0.07 | 0.12 | | 0.05 | 0.14 | | 0.02 | 0.28 | | c0.15 | 0.26 | |
| v/s Ratio Perm | c0.17 | | 0.01 | 0.15 | | | 0.12 | | | c0.32 | | |
| v/c Ratio | 0.82 | 0.55 | 0.06 | 0.81 | 0.78 | | 0.31 | 0.74 | | 0.77 | 0.51 | |
| Uniform Delay, d1 | 37.6 | 45.9 | 41.0 | 44.4 | 50.8 | | 21.1 | 34.9 | | 28.9 | 21.8 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.73 | 0.35 | |
| Incremental Delay, d2 | 20.9 | 0.9 | 0.1 | 16.9 | 6.8 | | 0.5 | 3.8 | | 7.5 | 1.0 | |
| Delay (s) | 58.5 | 46.8 | 41.1 | 61.2 | 57.6 | | 21.7 | 38.6 | | 57.5 | 8.5 | |
| Level of Service | E | D | D | E | E | | C | D | | E | A | |
| Approach Delay (s) | | 49.1 | | | 58.5 | | | 37.0 | | | 21.9 | |
| Approach LOS | | D | | | E | | | D | | | C | |

Intersection Summary






















| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 39.2 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.82 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | 95.2% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings

7: Saunders School Access/Mall Access South (E) & Viscount Rd

10-20-2022






















| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (vph) | 6 | 270 | 10 | 20 | 323 | 61 | 14 | 0 | 36 | 62 | 0 | 24 |
| Future Volume (vph) | 6 | 270 | 10 | 20 | 323 | 61 | 14 | 0 | 36 | 62 | 0 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 30.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.994 | | | | 0.850 | | 0.850 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 1871 | 0 | 1719 | 1863 | 1468 | 1805 | 1568 | 0 | 1805 | 0 | 1553 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 1871 | 0 | 1719 | 1863 | 1468 | 1805 | 1568 | 0 | 1805 | 0 | 1553 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | | 20 |
| Link Distance (m) | | 134.9 | | | 157.9 | | | 74.1 | | | | 83.9 |
| Travel Time (s) | | 12.1 | | | 14.2 | | | 13.3 | | | | 15.1 |
| Confl. Peds. (#/hr) | 15 | | 15 | 15 | | 15 | 11 | | 3 | 3 | | 11 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 5% | 2% | 10% | 0% | 0% | 3% | 0% | 0% | 4% |
| Adj. Flow (vph) | 6 | 287 | 11 | 21 | 344 | 65 | 15 | 0 | 38 | 66 | 0 | 26 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 6 | 298 | 0 | 21 | 344 | 65 | 15 | 38 | 0 | 66 | 0 | 26 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Free | | | Free | | | Stop | | | | Stop |

| Intersection Summary | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 36.7% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

7: Saunders School Access/Mall Access South (E) & Viscount Rd

10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (veh/h) | 6 | 270 | 10 | 20 | 323 | 61 | 14 | 0 | 36 | 62 | 0 | 24 |
| Future Volume (Veh/h) | 6 | 270 | 10 | 20 | 323 | 61 | 14 | 0 | 36 | 62 | 0 | 24 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 6 | 287 | 11 | 21 | 344 | 65 | 15 | 0 | 38 | 66 | 0 | 26 |
| Pedestrians | 11 | | | 3 | | | 15 | | | 15 | | |
| Lane Width (m) | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | | |
| Walking Speed (m/s) | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | | |
| Percent Blockage | 1 | | | 0 | | | 1 | | | 1 | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (m) | 135 | | | 158 | | | | | | | | |
| pX, platoon unblocked | 0.97 | | | 1.00 | | | 0.97 | 0.97 | 1.00 | 0.97 | 0.97 | 0.97 |
| vC, conflicting volume | 424 | | | 313 | | | 742 | 786 | 310 | 741 | 726 | 370 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 394 | | | 308 | | | 713 | 757 | 305 | 711 | 696 | 338 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 98 | | | 95 | 100 | 95 | 79 | 100 | 96 |
| cM capacity (veh/h) | 1129 | | | 1215 | | | 309 | 315 | 718 | 307 | 342 | 666 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | NB 2 | SB 1 | SB 2 | | | |
| Volume Total | 6 | 298 | 21 | 344 | 65 | 15 | 38 | 66 | 26 | | | |
| Volume Left | 6 | 0 | 21 | 0 | 0 | 15 | 0 | 66 | 0 | | | |
| Volume Right | 0 | 11 | 0 | 0 | 65 | 0 | 38 | 0 | 26 | | | |
| cSH | 1129 | 1700 | 1215 | 1700 | 1700 | 309 | 718 | 307 | 666 | | | |
| Volume to Capacity | 0.01 | 0.18 | 0.02 | 0.20 | 0.04 | 0.05 | 0.05 | 0.21 | 0.04 | | | |
| Queue Length 95th (m) | 0.1 | 0.0 | 0.4 | 0.0 | 0.0 | 1.2 | 1.3 | 6.4 | 1.0 | | | |
| Control Delay (s) | 8.2 | 0.0 | 8.0 | 0.0 | 0.0 | 17.3 | 10.3 | 19.9 | 10.6 | | | |
| Lane LOS | A | | A | | | C | B | C | B | | | |
| Approach Delay (s) | 0.2 | | 0.4 | | | 12.3 | | 17.3 | | | | |
| Approach LOS | | | | | | B | | C | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 2.8 | | | | | | | | | |
| Intersection Capacity Utilization | | | 36.7% | | ICU Level of Service | | | | | | A | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022

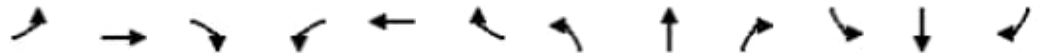


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 43 | 145 | 28 | 32 | 267 | 66 | 52 | 1 | 48 | 92 | 0 | 69 |
| Future Volume (vph) | 43 | 145 | 28 | 32 | 267 | 66 | 52 | 1 | 48 | 92 | 0 | 69 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 50.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | 0.99 | | 0.99 | | 0.99 | 1.00 | 0.97 | | | 0.99 | 0.98 |
| Frt | | 0.976 | | | | 0.850 | | 0.853 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1770 | 1829 | 0 | 1805 | 1881 | 1455 | 1805 | 1565 | 0 | 0 | 1736 | 1568 |
| Flt Permitted | 0.544 | | | 0.645 | | | 0.695 | | | | 0.724 | |
| Satd. Flow (perm) | 1012 | 1829 | 0 | 1214 | 1881 | 1435 | 1318 | 1565 | 0 | 0 | 1304 | 1533 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 17 | | | | 68 | | 49 | | | | 71 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | | 20 |
| Link Distance (m) | | 153.2 | | | 134.9 | | | 64.6 | | | | 87.9 |
| Travel Time (s) | | 13.8 | | | 12.1 | | | 11.6 | | | | 15.8 |
| Confl. Peds. (#/hr) | 2 | | 7 | 7 | | 2 | 2 | | 13 | 13 | | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 1% | 11% | 0% | 0% | 0% | 4% | 0% | 3% |
| Adj. Flow (vph) | 44 | 149 | 29 | 33 | 275 | 68 | 54 | 1 | 49 | 95 | 0 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 44 | 178 | 0 | 33 | 275 | 68 | 54 | 50 | 0 | 0 | 95 | 71 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | Yes | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022

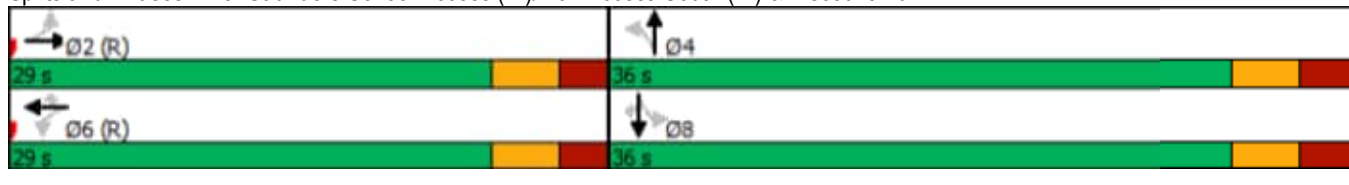


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-----|-------|-------|-------|
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Detector Phase | 2 | 2 | | 6 | 6 | 6 | 4 | 4 | | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | 29.0 | 36.0 | 36.0 | | 36.0 | 36.0 | 36.0 |
| Total Split (%) | 44.6% | 44.6% | | 44.6% | 44.6% | 44.6% | 55.4% | 55.4% | | 55.4% | 55.4% | 55.4% |
| Maximum Green (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | 30.1 | 30.1 | 30.1 |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | | 2.6 | 2.6 | 2.6 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | C-Max | C-Max | | C-Max | C-Max | C-Max | Max | Max | | Max | Max | Max |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 | 19.0 | 19.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | | 30.1 | 30.1 |
| Actuated g/C Ratio | 0.36 | 0.36 | | 0.36 | 0.36 | 0.36 | 0.46 | 0.46 | | | 0.46 | 0.46 |
| v/c Ratio | 0.12 | 0.27 | | 0.08 | 0.41 | 0.12 | 0.09 | 0.07 | | | 0.16 | 0.09 |
| Control Delay | 15.2 | 14.7 | | 12.9 | 16.7 | 3.6 | 10.3 | 3.7 | | | 11.0 | 3.3 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | 15.2 | 14.7 | | 12.9 | 16.7 | 3.6 | 10.3 | 3.7 | | | 11.0 | 3.3 |
| LOS | B | B | | B | B | A | B | A | | | B | A |
| Approach Delay | | 14.8 | | | 14.0 | | | 7.2 | | | 7.7 | |
| Approach LOS | | B | | | B | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 12 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.41
 Intersection Signal Delay: 12.2
 Intersection LOS: B
 Intersection Capacity Utilization 77.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↶ | ↷ | ↶ | ↷ | ↷ | ↶ | ↷ | | ↷ | ↷ |
| Traffic Volume (vph) | 43 | 145 | 32 | 267 | 66 | 52 | 1 | 92 | 0 | 69 |
| Future Volume (vph) | 43 | 145 | 32 | 267 | 66 | 52 | 1 | 92 | 0 | 69 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 2 | | 6 | | | 4 | | 8 | |
| Permitted Phases | 2 | | 6 | | 6 | 4 | | 8 | | 8 |
| Detector Phase | 2 | 2 | 6 | 6 | 6 | 4 | 4 | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 |
| Total Split (%) | 44.6% | 44.6% | 44.6% | 44.6% | 44.6% | 55.4% | 55.4% | 55.4% | 55.4% | 55.4% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| 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) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | C-Max | C-Max | Max | Max | Max | Max | Max |
| Act Effct Green (s) | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | 30.1 | 30.1 |
| Actuated g/C Ratio | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.46 | 0.46 | | 0.46 | 0.46 |
| v/c Ratio | 0.12 | 0.27 | 0.08 | 0.41 | 0.12 | 0.09 | 0.07 | | 0.16 | 0.09 |
| Control Delay | 15.2 | 14.7 | 12.9 | 16.7 | 3.6 | 10.3 | 3.7 | | 11.0 | 3.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 15.2 | 14.7 | 12.9 | 16.7 | 3.6 | 10.3 | 3.7 | | 11.0 | 3.3 |
| LOS | B | B | B | B | A | B | A | | B | A |
| Approach Delay | | 14.8 | | 14.0 | | | 7.2 | | 7.7 | |
| Approach LOS | | B | | B | | | A | | A | |

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 12 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 12.2

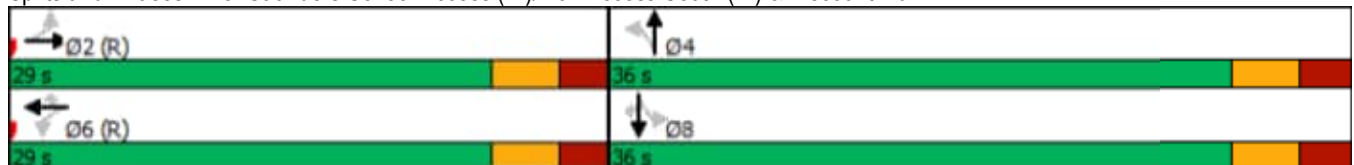
Intersection LOS: B

Intersection Capacity Utilization 77.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Queues

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022
























| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBT | SBR |
|------------------------|------|-------|------|-------|------|------|------|------|------|
| Lane Group Flow (vph) | 44 | 178 | 33 | 275 | 68 | 54 | 50 | 95 | 71 |
| v/c Ratio | 0.12 | 0.27 | 0.08 | 0.41 | 0.12 | 0.09 | 0.07 | 0.16 | 0.09 |
| Control Delay | 15.2 | 14.7 | 12.9 | 16.7 | 3.6 | 10.3 | 3.7 | 11.0 | 3.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 15.2 | 14.7 | 12.9 | 16.7 | 3.6 | 10.3 | 3.7 | 11.0 | 3.3 |
| Queue Length 50th (m) | 3.7 | 14.0 | 2.8 | 25.5 | 0.2 | 3.6 | 0.1 | 6.6 | 0.0 |
| Queue Length 95th (m) | 10.1 | 27.4 | 7.6 | 44.2 | 6.5 | 9.3 | 5.0 | 14.6 | 5.9 |
| Internal Link Dist (m) | | 129.2 | | 110.9 | | | 40.6 | 63.9 | |
| Turn Bay Length (m) | 30.0 | | 50.0 | | | | | | |
| Base Capacity (vph) | 362 | 666 | 435 | 674 | 558 | 610 | 751 | 603 | 748 |
| 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 | 0.27 | 0.08 | 0.41 | 0.12 | 0.09 | 0.07 | 0.16 | 0.09 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

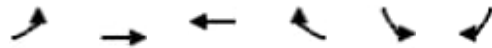
10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | | |  |  |
| Traffic Volume (vph) | 43 | 145 | 28 | 32 | 267 | 66 | 52 | 1 | 48 | 92 | 0 | 69 |
| Future Volume (vph) | 43 | 145 | 28 | 32 | 267 | 66 | 52 | 1 | 48 | 92 | 0 | 69 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Frbp, ped/bikes | 1.00 | 0.99 | | 1.00 | 1.00 | 0.99 | 1.00 | 0.97 | | | 1.00 | 0.98 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | | | 0.99 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.85 | | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | | 0.95 | 1.00 |
| Satd. Flow (prot) | 1767 | 1829 | | 1788 | 1881 | 1435 | 1801 | 1565 | | | 1711 | 1533 |
| Flt Permitted | 0.54 | 1.00 | | 0.64 | 1.00 | 1.00 | 0.70 | 1.00 | | | 0.72 | 1.00 |
| Satd. Flow (perm) | 1012 | 1829 | | 1214 | 1881 | 1435 | 1319 | 1565 | | | 1305 | 1533 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 44 | 149 | 29 | 33 | 275 | 68 | 54 | 1 | 49 | 95 | 0 | 71 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 0 | 44 | 0 | 26 | 0 | 0 | 0 | 38 |
| Lane Group Flow (vph) | 44 | 167 | 0 | 33 | 275 | 24 | 54 | 24 | 0 | 0 | 95 | 33 |
| Confl. Peds. (#/hr) | 2 | | 7 | 7 | | 2 | 2 | | 13 | 13 | | 2 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 1% | 11% | 0% | 0% | 0% | 4% | 0% | 3% |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | | 8 |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Actuated Green, G (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | | 30.1 | 30.1 |
| Effective Green, g (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | | 30.1 | 30.1 |
| Actuated g/C Ratio | 0.36 | 0.36 | | 0.36 | 0.36 | 0.36 | 0.46 | 0.46 | | | 0.46 | 0.46 |
| Clearance Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 362 | 655 | | 435 | 674 | 514 | 610 | 724 | | | 604 | 709 |
| v/s Ratio Prot | | 0.09 | | | c0.15 | | | 0.02 | | | | |
| v/s Ratio Perm | 0.04 | | | 0.03 | | 0.02 | 0.04 | | | | c0.07 | 0.02 |
| v/c Ratio | 0.12 | 0.26 | | 0.08 | 0.41 | 0.05 | 0.09 | 0.03 | | | 0.16 | 0.05 |
| Uniform Delay, d1 | 14.0 | 14.7 | | 13.7 | 15.7 | 13.6 | 9.8 | 9.5 | | | 10.1 | 9.6 |
| Progression Factor | 1.00 | 1.00 | | 0.90 | 0.94 | 0.98 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.7 | 0.9 | | 0.3 | 1.8 | 0.2 | 0.3 | 0.1 | | | 0.6 | 0.1 |
| Delay (s) | 14.7 | 15.7 | | 12.8 | 16.5 | 13.5 | 10.1 | 9.6 | | | 10.7 | 9.7 |
| Level of Service | B | B | | B | B | B | B | A | | | B | A |
| Approach Delay (s) | | 15.5 | | | 15.6 | | | 9.8 | | | 10.2 | |
| Approach LOS | | B | | | B | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 13.9 | | | | | | | | | B |
| HCM 2000 Volume to Capacity ratio | | | 0.27 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 65.0 | | | | | | 11.6 | | | |
| Intersection Capacity Utilization | | | 77.1% | | | | | | | | | D |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
 9: Viscount Rd & Woodcrest Rd

10-20-2022



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations | | 4 | 4 | | 4 | |
| Traffic Volume (vph) | 24 | 176 | 313 | 68 | 37 | 19 |
| Future Volume (vph) | 24 | 176 | 313 | 68 | 37 | 19 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.976 | | 0.953 | |
| Flt Protected | | 0.994 | | | 0.968 | |
| Satd. Flow (prot) | 0 | 1872 | 1824 | 0 | 1690 | 0 |
| Flt Permitted | | 0.994 | | | 0.968 | |
| Satd. Flow (perm) | 0 | 1872 | 1824 | 0 | 1690 | 0 |
| Link Speed (k/h) | | 40 | 40 | | 50 | |
| Link Distance (m) | | 15.9 | 153.2 | | 195.3 | |
| Travel Time (s) | | 1.4 | 13.8 | | 14.1 | |
| Confl. Peds. (#/hr) | 19 | | | 19 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 3% | 5% |
| Adj. Flow (vph) | 25 | 181 | 323 | 70 | 38 | 20 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 206 | 393 | 0 | 58 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(m) | | 3.6 | 3.6 | | 3.6 | |
| Link Offset(m) | | 0.0 | 0.0 | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | Yes | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | | 15 | 25 | 15 |
| Sign Control | | Free | Free | | Stop | |

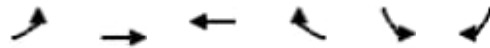
Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 39.5% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

9: Viscount Rd & Woodcrest Rd

10-20-2022

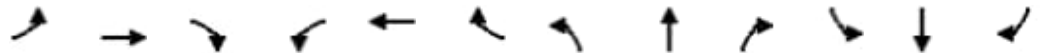


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | 4 | 1 | | 2 | |
| Traffic Volume (veh/h) | 24 | 176 | 313 | 68 | 37 | 19 |
| Future Volume (Veh/h) | 24 | 176 | 313 | 68 | 37 | 19 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 25 | 181 | 323 | 70 | 38 | 20 |
| Pedestrians | | | | | 19 | |
| Lane Width (m) | | | | | 3.6 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 2 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | TWLTL | | | |
| Median storage veh | | | 2 | | | |
| Upstream signal (m) | | 16 | 153 | | | |
| pX, platoon unblocked | 0.91 | | | | 0.93 | 0.91 |
| vC, conflicting volume | 412 | | | | 608 | 377 |
| vC1, stage 1 conf vol | | | | | 377 | |
| vC2, stage 2 conf vol | | | | | 231 | |
| vCu, unblocked vol | 303 | | | | 449 | 264 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 98 | | | | 94 | 97 |
| cM capacity (veh/h) | 1136 | | | | 641 | 686 |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 206 | 393 | 58 | | | |
| Volume Left | 25 | 0 | 38 | | | |
| Volume Right | 0 | 70 | 20 | | | |
| cSH | 1136 | 1700 | 656 | | | |
| Volume to Capacity | 0.02 | 0.23 | 0.09 | | | |
| Queue Length 95th (m) | 0.5 | 0.0 | 2.3 | | | |
| Control Delay (s) | 1.2 | 0.0 | 11.0 | | | |
| Lane LOS | A | | B | | | |
| Approach Delay (s) | 1.2 | 0.0 | 11.0 | | | |
| Approach LOS | | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.3 | | | |
| Intersection Capacity Utilization | | | 39.5% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|-------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Traffic Volume (vph) | 0 | 15 | 85 | 22 | 32 | 6 | 63 | 6 | 41 | 1 | 54 | 20 |
| Future Volume (vph) | 0 | 15 | 85 | 22 | 32 | 6 | 63 | 6 | 41 | 1 | 54 | 20 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.885 | | | 0.986 | | | 0.869 | | | 0.963 | |
| Flt Protected | | | | | 0.982 | | 0.950 | | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1682 | 0 | 0 | 1672 | 0 | 1805 | 1386 | 0 | 0 | 1828 | 0 |
| Flt Permitted | | | | | 0.982 | | 0.950 | | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1682 | 0 | 0 | 1672 | 0 | 1805 | 1386 | 0 | 0 | 1828 | 0 |
| Link Speed (k/h) | | 20 | | | 20 | | | 20 | | | 20 | |
| Link Distance (m) | | 78.9 | | | 182.4 | | | 87.9 | | | 68.5 | |
| Travel Time (s) | | 14.2 | | | 32.8 | | | 15.8 | | | 12.3 | |
| Confl. Peds. (#/hr) | 9 | | 6 | 6 | | 9 | | | 1 | 1 | | |
| Confl. Bikes (#/hr) | | | | | | 2 | | | | | | 1 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 23% | 3% | 0% | 0% | 0% | 22% | 0% | 0% | 0% |
| Adj. Flow (vph) | 0 | 17 | 97 | 25 | 36 | 7 | 72 | 7 | 47 | 1 | 61 | 23 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 114 | 0 | 0 | 68 | 0 | 72 | 54 | 0 | 0 | 85 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |

Intersection Summary

Area Type: Other

Control Type: Unsignalized

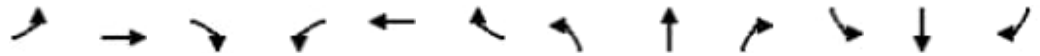
Intersection Capacity Utilization 27.8% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 0 | 15 | 85 | 22 | 32 | 6 | 63 | 6 | 41 | 1 | 54 | 20 |
| Future Volume (vph) | 0 | 15 | 85 | 22 | 32 | 6 | 63 | 6 | 41 | 1 | 54 | 20 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 0 | 17 | 97 | 25 | 36 | 7 | 72 | 7 | 47 | 1 | 61 | 23 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|-----------------------|-------|------|------|-------|-------|
| Volume Total (vph) | 114 | 68 | 72 | 54 | 85 |
| Volume Left (vph) | 0 | 25 | 72 | 0 | 1 |
| Volume Right (vph) | 97 | 7 | 0 | 47 | 23 |
| Hadj (s) | -0.51 | 0.18 | 0.50 | -0.28 | -0.16 |
| Departure Headway (s) | 4.0 | 4.7 | 5.5 | 4.7 | 4.4 |
| Degree Utilization, x | 0.13 | 0.09 | 0.11 | 0.07 | 0.10 |
| Capacity (veh/h) | 857 | 718 | 630 | 731 | 770 |
| Control Delay (s) | 7.6 | 8.2 | 8.0 | 6.9 | 7.9 |
| Approach Delay (s) | 7.6 | 8.2 | 7.5 | | 7.9 |
| Approach LOS | A | A | A | | A |

| Intersection Summary | |
|-----------------------------------|-------|
| Delay | 7.7 |
| Level of Service | A |
| Intersection Capacity Utilization | 27.8% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

Lanes, Volumes, Timings
 11: Mall Access South (E) & Internal Mall Rd

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|-------|------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 73 | 43 | 43 | 44 | 24 | 43 |
| Future Volume (vph) | 73 | 43 | 43 | 44 | 24 | 43 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.950 | | | | 0.850 | |
| Flt Protected | | | 0.976 | | 0.950 | |
| Satd. Flow (prot) | 1650 | 0 | 0 | 1827 | 1399 | 1615 |
| Flt Permitted | | | 0.976 | | 0.950 | |
| Satd. Flow (perm) | 1650 | 0 | 0 | 1827 | 1399 | 1615 |
| Link Speed (k/h) | 20 | | 20 | | 20 | |
| Link Distance (m) | 182.4 | | 55.5 | | 83.9 | |
| Travel Time (s) | 32.8 | | 10.0 | | 15.1 | |
| Confl. Peds. (#/hr) | 21 | | 21 | | 5 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 15% | 0% | 3% | 0% | 29% | 0% |
| Adj. Flow (vph) | 76 | 45 | 45 | 46 | 25 | 45 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 121 | 0 | 0 | 91 | 25 | 45 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | 0.0 | | 3.6 | |
| Link Offset(m) | 0.0 | | 0.0 | | 0.0 | |
| Crosswalk Width(m) | 4.8 | | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | | 25 | |
| Sign Control | Stop | | Stop | | Stop | |

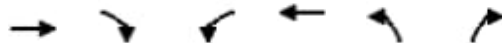
Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 23.4% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

11: Mall Access South (E) & Internal Mall Rd

10-20-2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|-------|------|-------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 73 | 43 | 43 | 44 | 24 | 43 |
| Future Volume (vph) | 73 | 43 | 43 | 44 | 24 | 43 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 76 | 45 | 45 | 46 | 25 | 45 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | | |
| Volume Total (vph) | 121 | 91 | 25 | 45 | | |
| Volume Left (vph) | 0 | 45 | 25 | 0 | | |
| Volume Right (vph) | 45 | 0 | 0 | 45 | | |
| Hadj (s) | -0.06 | 0.12 | 0.99 | -0.70 | | |
| Departure Headway (s) | 4.1 | 4.3 | 6.0 | 4.3 | | |
| Degree Utilization, x | 0.14 | 0.11 | 0.04 | 0.05 | | |
| Capacity (veh/h) | 856 | 814 | 579 | 799 | | |
| Control Delay (s) | 7.8 | 7.8 | 8.0 | 6.3 | | |
| Approach Delay (s) | 7.8 | 7.8 | 6.9 | | | |
| Approach LOS | A | A | A | | | |
| Intersection Summary | | | | | | |
| Delay | | | 7.6 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 23.4% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 12: Mall Access East (S) & Internal Mall Road











10-20-2022



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|--------------|-------|------------------------|-------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 48 | 30 | 27 | 82 | 74 | 40 |
| Future Volume (vph) | 48 | 30 | 27 | 82 | 74 | 40 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | 0.850 | 0.899 | | | |
| Flt Protected | 0.950 | | | | | 0.969 |
| Satd. Flow (prot) | 1805 | 1568 | 1556 | 0 | 0 | 1810 |
| Flt Permitted | 0.950 | | | | | 0.969 |
| Satd. Flow (perm) | 1805 | 1568 | 1556 | 0 | 0 | 1810 |
| Link Speed (k/h) | 20 | | 20 | | | 20 |
| Link Distance (m) | 105.0 | | 76.6 | | | 159.1 |
| Travel Time (s) | 18.9 | | 13.8 | | | 28.6 |
| Confl. Peds. (#/hr) | 36 | | | 3 | 3 | |
| Confl. Bikes (#/hr) | | 1 | | 3 | | |
| Peak Hour Factor | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| Heavy Vehicles (%) | 0% | 3% | 0% | 13% | 1% | 3% |
| Adj. Flow (vph) | 63 | 39 | 36 | 108 | 97 | 53 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 63 | 39 | 144 | 0 | 0 | 150 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(m) | 3.6 | | 0.0 | | | 0.0 |
| Link Offset(m) | 0.0 | | 0.0 | | | 0.0 |
| Crosswalk Width(m) | 4.8 | | 4.8 | | | 4.8 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | 15 | | 15 | 25 | |
| Sign Control | Stop | | Stop | | | Stop |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 22.9% | | ICU Level of Service A | | | |
| Analysis Period (min) | 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 12: Mall Access East (S) & Internal Mall Road

10-20-2022

| |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | | |  |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 48 | 30 | 27 | 82 | 74 | 40 |
| Future Volume (vph) | 48 | 30 | 27 | 82 | 74 | 40 |
| Peak Hour Factor | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| Hourly flow rate (vph) | 63 | 39 | 36 | 108 | 97 | 53 |
| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 | | |
| Volume Total (vph) | 63 | 39 | 144 | 150 | | |
| Volume Left (vph) | 63 | 0 | 0 | 97 | | |
| Volume Right (vph) | 0 | 39 | 108 | 0 | | |
| Hadj (s) | 0.50 | -0.65 | -0.28 | 0.16 | | |
| Departure Headway (s) | 5.7 | 4.5 | 4.1 | 4.5 | | |
| Degree Utilization, x | 0.10 | 0.05 | 0.16 | 0.19 | | |
| Capacity (veh/h) | 599 | 749 | 856 | 774 | | |
| Control Delay (s) | 8.1 | 6.5 | 7.8 | 8.5 | | |
| Approach Delay (s) | 7.5 | | 7.8 | 8.5 | | |
| Approach LOS | A | | A | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 8.0 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 22.9% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 13: Internal Mall Road & Mall Access East (N)

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|-------|------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 20 | 15 | 48 | 31 | 8 | 13 |
| Future Volume (vph) | 20 | 15 | 48 | 31 | 8 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.943 | | 0.915 | | | |
| Flt Protected | | | 0.950 | | 0.982 | |
| Satd. Flow (prot) | 1740 | 0 | 1805 | 1845 | 1707 | 0 |
| Flt Permitted | | | 0.950 | | 0.982 | |
| Satd. Flow (perm) | 1740 | 0 | 1805 | 1845 | 1707 | 0 |
| Link Speed (k/h) | 20 | | 20 | | | |
| Link Distance (m) | 158.8 | | 100.3 | | 159.1 | |
| Travel Time (s) | 28.6 | | 18.1 | | 28.6 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | 7 | |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Heavy Vehicles (%) | 0% | 7% | 0% | 3% | 0% | 0% |
| Adj. Flow (vph) | 26 | 19 | 62 | 40 | 10 | 17 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 45 | 0 | 62 | 40 | 27 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.6 | | 3.6 | | | |
| Link Offset(m) | 0.0 | | 0.0 | | | |
| Crosswalk Width(m) | 4.8 | | 4.8 | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | | 15 | |
| Sign Control | Stop | | Stop | | Stop | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 21.4% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis
 13: Internal Mall Road & Mall Access East (N)

10-20-2022

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------|------|-------|----------------------|------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | P | | ↑ | ↑ | ↑ | |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 20 | 15 | 48 | 31 | 8 | 13 |
| Future Volume (vph) | 20 | 15 | 48 | 31 | 8 | 13 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Hourly flow rate (vph) | 26 | 19 | 62 | 40 | 10 | 17 |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | | |
| Volume Total (vph) | 45 | 62 | 40 | 27 | | |
| Volume Left (vph) | 0 | 62 | 0 | 10 | | |
| Volume Right (vph) | 19 | 0 | 0 | 17 | | |
| Hadj (s) | -0.20 | 0.50 | 0.05 | -0.30 | | |
| Departure Headway (s) | 4.0 | 5.1 | 4.6 | 3.9 | | |
| Degree Utilization, x | 0.05 | 0.09 | 0.05 | 0.03 | | |
| Capacity (veh/h) | 893 | 691 | 761 | 874 | | |
| Control Delay (s) | 7.2 | 7.4 | 6.7 | 7.1 | | |
| Approach Delay (s) | 7.2 | 7.1 | | 7.1 | | |
| Approach LOS | A | A | | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 7.1 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 21.4% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings

14: Viscount Rd

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|------|-------|-------|-------|
| Lane Configurations | ↑ | | | ↑ | ↘ | |
| Traffic Volume (vph) | 200 | 0 | 0 | 332 | 0 | 0 |
| Future Volume (vph) | 200 | 0 | 0 | 332 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 1881 | 0 | 0 | 1863 | 1900 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 1881 | 0 | 0 | 1863 | 1900 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (k/h) | 40 | | | 50 | 50 | |
| Link Distance (m) | 218.9 | | | 0.0 | 20.6 | |
| Travel Time (s) | 19.7 | | | 0.0 | 1.5 | |
| Confl. Peds. (#/hr) | | | | | 11 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 2% | 0% | 0% |
| Adj. Flow (vph) | 206 | 0 | 0 | 342 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 206 | 0 | 0 | 342 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | | 0.0 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | | 100 | 100 | | 100 | 100 |
| Number of Detectors | 2 | | | 2 | 1 | |
| Detector Template | Thru | | | Thru | Left | |
| Leading Detector (m) | 10.0 | | | 10.0 | 2.0 | |
| Trailing Detector (m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 0.6 | | | 0.6 | 2.0 | |
| Detector 1 Type | Cl+Ex | | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 2 Position(m) | 9.4 | | | 9.4 | | |
| Detector 2 Size(m) | 0.6 | | | 0.6 | | |
| Detector 2 Type | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |

Lanes, Volumes, Timings

14: Viscount Rd

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|-------|-----|-----|-------|-------|-----|
| Detector Phase | 4 | | | 8 | 2 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | | 10.0 | 40.2 | |
| Minimum Split (s) | 16.0 | | | 16.0 | 46.0 | |
| Total Split (s) | 16.0 | | | 16.0 | 46.0 | |
| Total Split (%) | 25.8% | | | 25.8% | 74.2% | |
| Maximum Green (s) | 11.7 | | | 11.7 | 40.2 | |
| Yellow Time (s) | 3.3 | | | 3.3 | 3.3 | |
| All-Red Time (s) | 1.0 | | | 1.0 | 2.5 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | | | 4.3 | 5.8 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | |
| Recall Mode | Max | | | Max | None | |
| Walk Time (s) | | | | | 35.0 | |
| Flash Dont Walk (s) | | | | | 5.0 | |
| Pedestrian Calls (#/hr) | | | | | 11 | |
| Act Effect Green (s) | 34.9 | | | 34.9 | | |
| Actuated g/C Ratio | 0.87 | | | 0.87 | | |
| v/c Ratio | 0.13 | | | 0.21 | | |
| Control Delay | 6.9 | | | 7.2 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 6.9 | | | 7.2 | | |
| LOS | A | | | A | | |
| Approach Delay | 6.9 | | | 7.2 | | |
| Approach LOS | A | | | A | | |

Intersection Summary

| | |
|------------------------------------|------------------|
| Area Type: | Other |
| Cycle Length: | 62 |
| Actuated Cycle Length: | 40.2 |
| Natural Cycle: | 65 |
| Control Type: | Semi Act-Uncoord |
| Maximum v/c Ratio: | 0.21 |
| Intersection Signal Delay: | 7.1 |
| Intersection LOS: | A |
| Intersection Capacity Utilization: | 21.1% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Splits and Phases: 14: Viscount Rd



Timings
14: Viscount Rd

10-20-2022

| | → | ← | |
|----------------------|-------|-------|------|
| Lane Group | EBT | WBT | Ø2 |
| Lane Configurations | ↑ | ↑ | |
| Traffic Volume (vph) | 200 | 332 | |
| Future Volume (vph) | 200 | 332 | |
| Turn Type | NA | NA | |
| Protected Phases | 4 | 8 | 2 |
| Permitted Phases | | | |
| Detector Phase | 4 | 8 | |
| Switch Phase | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 40.2 |
| Minimum Split (s) | 16.0 | 16.0 | 46.0 |
| Total Split (s) | 16.0 | 16.0 | 46.0 |
| Total Split (%) | 25.8% | 25.8% | 74% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.0 | 1.0 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | 4.3 | |
| Lead/Lag | | | |
| Lead-Lag Optimize? | | | |
| Recall Mode | Max | Max | None |
| Act Effct Green (s) | 34.9 | 34.9 | |
| Actuated g/C Ratio | 0.87 | 0.87 | |
| v/c Ratio | 0.13 | 0.21 | |
| Control Delay | 6.9 | 7.2 | |
| Queue Delay | 0.0 | 0.0 | |
| Total Delay | 6.9 | 7.2 | |
| LOS | A | A | |
| Approach Delay | 6.9 | 7.2 | |
| Approach LOS | A | A | |

Intersection Summary

Cycle Length: 62
 Actuated Cycle Length: 40.2
 Natural Cycle: 65
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.21
 Intersection Signal Delay: 7.1
 Intersection Capacity Utilization 21.1%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 14: Viscount Rd



Queues

14: Viscount Rd

10-20-2022

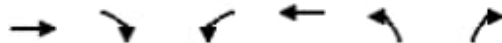


| Lane Group | EBT | WBT |
|-----------------------------|-------|------|
| Lane Group Flow (vph) | 206 | 342 |
| v/c Ratio | 0.13 | 0.21 |
| Control Delay | 6.9 | 7.2 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 6.9 | 7.2 |
| Queue Length 50th (m) | 0.0 | 0.0 |
| Queue Length 95th (m) | 39.4 | 66.5 |
| Internal Link Dist (m) | 194.9 | 0.1 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 1635 | 1620 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.13 | 0.21 |
| Intersection Summary | | |

HCM Signalized Intersection Capacity Analysis

14: Viscount Rd

10-20-2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|------|------|-------|------|---------------------------|------|
| Lane Configurations | ↑ | | | ↑ | ↔ | |
| Traffic Volume (vph) | 200 | 0 | 0 | 332 | 0 | 0 |
| Future Volume (vph) | 200 | 0 | 0 | 332 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.3 | | | 4.3 | | |
| Lane Util. Factor | 1.00 | | | 1.00 | | |
| Frbp, ped/bikes | 1.00 | | | 1.00 | | |
| Flpb, ped/bikes | 1.00 | | | 1.00 | | |
| Frt | 1.00 | | | 1.00 | | |
| Flt Protected | 1.00 | | | 1.00 | | |
| Satd. Flow (prot) | 1881 | | | 1863 | | |
| Flt Permitted | 1.00 | | | 1.00 | | |
| Satd. Flow (perm) | 1881 | | | 1863 | | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 206 | 0 | 0 | 342 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 206 | 0 | 0 | 342 | 0 | 0 |
| Confl. Peds. (#/hr) | | | | | 11 | |
| Heavy Vehicles (%) | 1% | 0% | 0% | 2% | 0% | 0% |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 30.5 | | | 30.5 | | |
| Effective Green, g (s) | 30.5 | | | 30.5 | | |
| Actuated g/C Ratio | 0.68 | | | 0.68 | | |
| Clearance Time (s) | 4.3 | | | 4.3 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Lane Grp Cap (vph) | 1280 | | | 1268 | | |
| v/s Ratio Prot | 0.11 | | | 0.18 | | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.16 | | | 0.27 | | |
| Uniform Delay, d1 | 2.6 | | | 2.8 | | |
| Progression Factor | 1.00 | | | 1.00 | | |
| Incremental Delay, d2 | 0.3 | | | 0.5 | | |
| Delay (s) | 2.8 | | | 3.3 | | |
| Level of Service | A | | | A | | |
| Approach Delay (s) | 2.8 | | | 3.3 | 0.0 | |
| Approach LOS | A | | | A | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 3.1 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.24 | | | |
| Actuated Cycle Length (s) | | | 44.8 | | Sum of lost time (s) | 10.1 |
| Intersection Capacity Utilization | | | 21.1% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| c Critical Lane Group | | | | | | |

FUTURE BACKGROUND



























CANADA | INDIA | AFRICA | MIDDLE EAST

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

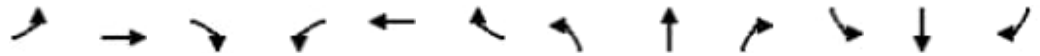
10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 229 | 468 | 92 | 226 | 286 | 295 | 77 | 959 | 198 | 347 | 938 | 55 |
| Future Volume (vph) | 229 | 468 | 92 | 226 | 286 | 295 | 77 | 959 | 198 | 347 | 938 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | | 0.97 | 0.99 | | 0.98 | 1.00 | | 0.95 | | 1.00 | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.992 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 3574 | 1455 | 1703 | 3343 | 1568 | 1656 | 3409 | 1553 | 1787 | 3414 | 0 |
| Flt Permitted | 0.498 | | | 0.264 | | | 0.268 | | | 0.100 | | |
| Satd. Flow (perm) | 922 | 3574 | 1418 | 471 | 3343 | 1535 | 467 | 3409 | 1482 | 188 | 3414 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 143 | | | 307 | | | 142 | | | 6 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 242.3 | | | 231.0 | | | 353.5 | | | 276.8 | |
| Travel Time (s) | | 17.4 | | | 16.6 | | | 25.5 | | | 19.9 | |
| Confl. Peds. (#/hr) | 7 | | 10 | 10 | | 7 | 5 | | 25 | 25 | | 5 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 1% | 11% | 6% | 8% | 3% | 9% | 4% | 4% | 1% | 4% | 18% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 239 | 488 | 96 | 235 | 298 | 307 | 80 | 999 | 206 | 361 | 977 | 57 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 239 | 488 | 96 | 235 | 298 | 307 | 80 | 999 | 206 | 361 | 1034 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.02 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 | |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 15.0 | 35.0 | 35.0 | 10.0 | 46.0 | 46.0 | 24.0 | 60.0 | |
| Total Split (%) | 12.5% | 29.2% | 29.2% | 12.5% | 29.2% | 29.2% | 8.3% | 38.3% | 38.3% | 20.0% | 50.0% | |
| Maximum Green (s) | 11.0 | 28.4 | 28.4 | 11.0 | 28.4 | 28.4 | 6.0 | 39.3 | 39.3 | 20.0 | 53.3 | |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | |
| Flash Dont Walk (s) | | 20.0 | 20.0 | | 20.0 | 20.0 | | 19.0 | 19.0 | | 19.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | |
| Act Effct Green (s) | 35.5 | 21.9 | 21.9 | 35.5 | 21.9 | 21.9 | 51.6 | 41.6 | 41.6 | 72.5 | 60.5 | |
| Actuated g/C Ratio | 0.30 | 0.18 | 0.18 | 0.30 | 0.18 | 0.18 | 0.43 | 0.35 | 0.35 | 0.60 | 0.50 | |
| v/c Ratio | 0.68 | 0.75 | 0.26 | 0.93 | 0.49 | 0.58 | 0.29 | 0.85 | 0.34 | 0.83 | 0.60 | |
| Control Delay | 42.5 | 53.7 | 3.3 | 76.2 | 46.2 | 9.0 | 14.6 | 40.3 | 9.1 | 45.9 | 24.3 | |
| 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 | 42.5 | 53.7 | 3.3 | 76.2 | 46.2 | 9.0 | 14.6 | 40.3 | 9.1 | 45.9 | 24.3 | |
| LOS | D | D | A | E | D | A | B | D | A | D | C | |
| Approach Delay | | 44.6 | | | 41.0 | | | 33.7 | | | 29.9 | |
| Approach LOS | | D | | | D | | | C | | | C | |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 26 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 35.9

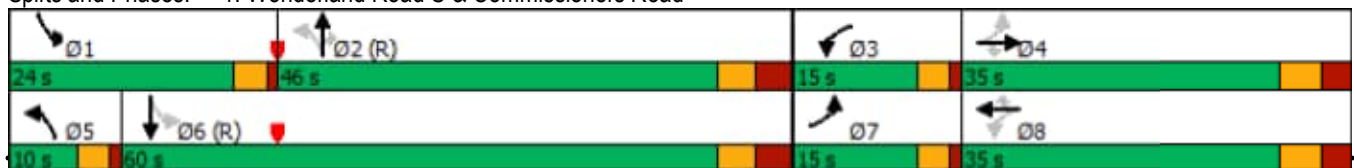
Intersection LOS: D

Intersection Capacity Utilization 91.7%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Wonderland Road S & Commissioners Road



FB AM 10:17 pm 10-13-2022

Timings

1: Wonderland Road S & Commissioners Road

10-20-2022

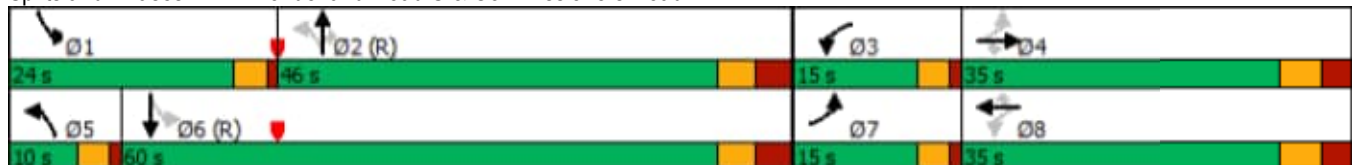


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↗ | ↗↗ | ↗ | ↗ | ↗↗ | ↗ | ↗ | ↗↗ | ↗ | ↗ | ↗↗ |
| Traffic Volume (vph) | 229 | 468 | 92 | 226 | 286 | 295 | 77 | 959 | 198 | 347 | 938 |
| Future Volume (vph) | 229 | 468 | 92 | 226 | 286 | 295 | 77 | 959 | 198 | 347 | 938 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 15.0 | 35.0 | 35.0 | 10.0 | 46.0 | 46.0 | 24.0 | 60.0 |
| Total Split (%) | 12.5% | 29.2% | 29.2% | 12.5% | 29.2% | 29.2% | 8.3% | 38.3% | 38.3% | 20.0% | 50.0% |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effct Green (s) | 35.5 | 21.9 | 21.9 | 35.5 | 21.9 | 21.9 | 51.6 | 41.6 | 41.6 | 72.5 | 60.5 |
| Actuated g/C Ratio | 0.30 | 0.18 | 0.18 | 0.30 | 0.18 | 0.18 | 0.43 | 0.35 | 0.35 | 0.60 | 0.50 |
| v/c Ratio | 0.68 | 0.75 | 0.26 | 0.93 | 0.49 | 0.58 | 0.29 | 0.85 | 0.34 | 0.83 | 0.60 |
| Control Delay | 42.5 | 53.7 | 3.3 | 76.2 | 46.2 | 9.0 | 14.6 | 40.3 | 9.1 | 45.9 | 24.3 |
| 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 | 42.5 | 53.7 | 3.3 | 76.2 | 46.2 | 9.0 | 14.6 | 40.3 | 9.1 | 45.9 | 24.3 |
| LOS | D | D | A | E | D | A | B | D | A | D | C |
| Approach Delay | | 44.6 | | | 41.0 | | | 33.7 | | | 29.9 |
| Approach LOS | | D | | | D | | | C | | | C |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 26 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 35.9
 Intersection LOS: D
 Intersection Capacity Utilization 91.7%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Queues

1: Wonderland Road S & Commissioners Road

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|------|-------|------|-------|-------|-------|------|--------|------|--------|-------|
| Lane Group Flow (vph) | 239 | 488 | 96 | 235 | 298 | 307 | 80 | 999 | 206 | 361 | 1034 |
| v/c Ratio | 0.68 | 0.75 | 0.26 | 0.93 | 0.49 | 0.58 | 0.29 | 0.85 | 0.34 | 0.83 | 0.60 |
| Control Delay | 42.5 | 53.7 | 3.3 | 76.2 | 46.2 | 9.0 | 14.6 | 40.3 | 9.1 | 45.9 | 24.3 |
| 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 | 42.5 | 53.7 | 3.3 | 76.2 | 46.2 | 9.0 | 14.6 | 40.3 | 9.1 | 45.9 | 24.3 |
| Queue Length 50th (m) | 46.0 | 61.1 | 0.0 | 45.4 | 35.3 | 0.0 | 6.3 | 135.7 | 16.1 | 63.6 | 96.0 |
| Queue Length 95th (m) | 64.6 | 75.7 | 4.5 | #71.3 | 47.2 | 24.0 | 8.9 | #167.3 | 29.6 | #129.4 | 129.4 |
| Internal Link Dist (m) | | 218.3 | | | 207.0 | | | 329.5 | | | 252.8 |
| Turn Bay Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | |
| Base Capacity (vph) | 350 | 845 | 444 | 252 | 791 | 597 | 273 | 1180 | 605 | 436 | 1723 |
| 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 | 0.68 | 0.58 | 0.22 | 0.93 | 0.38 | 0.51 | 0.29 | 0.85 | 0.34 | 0.83 | 0.60 |






























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Wonderland Road S & Commissioners Road

10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   |  |  |   |  |  |   |   |
| Traffic Volume (vph) | 229 | 468 | 92 | 226 | 286 | 295 | 77 | 959 | 198 | 347 | 938 | 55 |
| Future Volume (vph) | 229 | 468 | 92 | 226 | 286 | 295 | 77 | 959 | 198 | 347 | 938 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1765 | 3574 | 1418 | 1701 | 3343 | 1535 | 1655 | 3409 | 1482 | 1787 | 3414 | |
| Flt Permitted | 0.50 | 1.00 | 1.00 | 0.26 | 1.00 | 1.00 | 0.27 | 1.00 | 1.00 | 0.10 | 1.00 | |
| Satd. Flow (perm) | 925 | 3574 | 1418 | 472 | 3343 | 1535 | 467 | 3409 | 1482 | 189 | 3414 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 239 | 488 | 96 | 235 | 298 | 307 | 80 | 999 | 206 | 361 | 977 | 57 |
| RTOR Reduction (vph) | 0 | 0 | 78 | 0 | 0 | 251 | 0 | 0 | 93 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 239 | 488 | 18 | 235 | 298 | 56 | 80 | 999 | 113 | 361 | 1031 | 0 |
| Confl. Peds. (#/hr) | 7 | | 10 | 10 | | 7 | 5 | | 25 | 25 | | 5 |
| Heavy Vehicles (%) | 2% | 1% | 11% | 6% | 8% | 3% | 9% | 4% | 4% | 1% | 4% | 18% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Actuated Green, G (s) | 32.9 | 21.9 | 21.9 | 32.9 | 21.9 | 21.9 | 47.7 | 41.6 | 41.6 | 69.8 | 59.7 | |
| Effective Green, g (s) | 32.9 | 21.9 | 21.9 | 32.9 | 21.9 | 21.9 | 47.7 | 41.6 | 41.6 | 69.8 | 59.7 | |
| Actuated g/C Ratio | 0.27 | 0.18 | 0.18 | 0.27 | 0.18 | 0.18 | 0.40 | 0.35 | 0.35 | 0.58 | 0.50 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 330 | 652 | 258 | 242 | 610 | 280 | 246 | 1181 | 513 | 432 | 1698 | |
| v/s Ratio Prot | 0.07 | 0.14 | | c0.09 | 0.09 | | 0.02 | 0.29 | | c0.17 | 0.30 | |
| v/s Ratio Perm | 0.13 | | 0.01 | c0.18 | | 0.04 | 0.11 | | 0.08 | c0.32 | | |
| v/c Ratio | 0.72 | 0.75 | 0.07 | 0.97 | 0.49 | 0.20 | 0.33 | 0.85 | 0.22 | 0.84 | 0.61 | |
| Uniform Delay, d1 | 37.3 | 46.4 | 40.6 | 39.6 | 44.0 | 41.6 | 22.9 | 36.2 | 27.7 | 32.1 | 21.7 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.92 | 0.89 | 0.74 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 7.7 | 4.7 | 0.1 | 49.5 | 0.6 | 0.4 | 0.7 | 7.1 | 0.9 | 13.1 | 1.6 | |
| Delay (s) | 44.9 | 51.1 | 40.7 | 89.1 | 44.6 | 42.0 | 21.7 | 39.2 | 21.6 | 45.2 | 23.3 | |
| Level of Service | D | D | D | F | D | D | C | D | C | D | C | |
| Approach Delay (s) | | 48.1 | | | 56.1 | | | 35.3 | | | 29.0 | |
| Approach LOS | | D | | | E | | | D | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 39.7 | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.90 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | | | | | | Sum of lost time (s) | 21.3 |
| Intersection Capacity Utilization | | | 91.7% | | | | | | | | ICU Level of Service | F |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Lanes, Volumes, Timings
2: Wonderland Road S & Village Green Ave

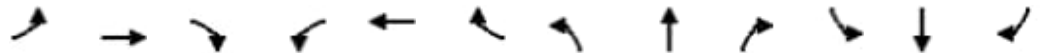
10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1156 | 34 | 44 | 1352 | 24 |
| Future Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1156 | 34 | 44 | 1352 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (m) | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Storage Length (m) | 30.0 | | 0.0 | 20.0 | | 0.0 | 35.0 | | 0.0 | 28.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | 0.99 | | 0.99 | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.925 | | | 0.880 | | | 0.996 | | | 0.997 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1636 | 1741 | 0 | 1685 | 1594 | 0 | 1685 | 3421 | 0 | 1652 | 3393 | 0 |
| Flt Permitted | 0.717 | | | 0.723 | | | 0.172 | | | 0.216 | | |
| Satd. Flow (perm) | 1227 | 1741 | 0 | 1274 | 1594 | 0 | 305 | 3421 | 0 | 376 | 3393 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 26 | | | 49 | | | 5 | | | 3 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 279.4 | | | 195.9 | | | 119.4 | | | 353.5 | |
| Travel Time (s) | | 20.1 | | | 14.1 | | | 8.6 | | | 25.5 | |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 9 | | 16 | 16 | | 19 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 2 | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 17% | 0% | 0% | 5% | 0% | 2% | 4% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| Adj. Flow (vph) | 36 | 26 | 26 | 27 | 12 | 49 | 8 | 1192 | 35 | 45 | 1394 | 25 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 36 | 52 | 0 | 27 | 61 | 0 | 8 | 1227 | 0 | 45 | 1419 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.0 | | | 3.0 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.09 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.02 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |

Lanes, Volumes, Timings
 2: Wonderland Road S & Village Green Ave

10-20-2022

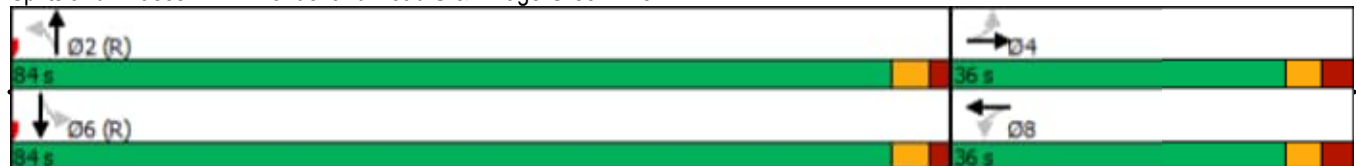


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Detector 2 Type | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 34.6 | 34.6 | | 34.6 | 34.6 | | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (s) | 36.0 | 36.0 | | 36.0 | 36.0 | | 84.0 | 84.0 | | 84.0 | 84.0 | |
| Total Split (%) | 30.0% | 30.0% | | 30.0% | 30.0% | | 70.0% | 70.0% | | 70.0% | 70.0% | |
| Maximum Green (s) | 29.7 | 29.7 | | 29.7 | 29.7 | | 78.6 | 78.6 | | 78.6 | 78.6 | |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 2.1 | 2.1 | | 2.1 | 2.1 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 21.0 | 21.0 | | 21.0 | 21.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effect Green (s) | 9.3 | 9.3 | | 9.3 | 9.3 | | 102.7 | 102.7 | | 102.7 | 102.7 | |
| Actuated g/C Ratio | 0.08 | 0.08 | | 0.08 | 0.08 | | 0.86 | 0.86 | | 0.86 | 0.86 | |
| v/c Ratio | 0.38 | 0.33 | | 0.27 | 0.36 | | 0.03 | 0.42 | | 0.14 | 0.49 | |
| Control Delay | 63.1 | 35.7 | | 58.0 | 24.6 | | 1.6 | 1.4 | | 3.1 | 2.8 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 63.1 | 35.7 | | 58.0 | 24.6 | | 1.6 | 1.4 | | 3.1 | 2.8 | |
| LOS | E | D | | E | C | | A | A | | A | A | |
| Approach Delay | 46.9 | | | 34.9 | | | 1.4 | | | 2.8 | | |
| Approach LOS | D | | | C | | | A | | | A | | |

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 114 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 4.6
 Intersection Capacity Utilization 58.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

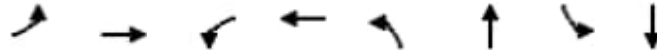
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Timings

2: Wonderland Road S & Village Green Ave

10-20-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↗ | ↖ | ↗ | ↖ | ↗ | ↖ | ↗ |
| Traffic Volume (vph) | 35 | 25 | 26 | 12 | 8 | 1156 | 44 | 1352 |
| Future Volume (vph) | 35 | 25 | 26 | 12 | 8 | 1156 | 44 | 1352 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA |
| Protected Phases | | 4 | | 8 | | 2 | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 34.6 | 34.6 | 34.6 | 34.6 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.1 | 2.1 | 2.1 | 2.1 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 5.4 | 5.4 | 5.4 | 5.4 |
| Lead/Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 9.3 | 9.3 | 9.3 | 9.3 | 102.7 | 102.7 | 102.7 | 102.7 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.08 | 0.08 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.38 | 0.33 | 0.27 | 0.36 | 0.03 | 0.42 | 0.14 | 0.49 |
| Control Delay | 63.1 | 35.7 | 58.0 | 24.6 | 1.6 | 1.4 | 3.1 | 2.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.1 | 35.7 | 58.0 | 24.6 | 1.6 | 1.4 | 3.1 | 2.8 |
| LOS | E | D | E | C | A | A | A | A |
| Approach Delay | | 46.9 | | 34.9 | | 1.4 | | 2.8 |
| Approach LOS | | D | | C | | A | | A |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 114 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.49
 Intersection Signal Delay: 4.6
 Intersection Capacity Utilization 58.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

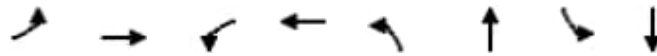
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Queues

2: Wonderland Road S & Village Green Ave

10-20-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|------|-------|------|-------|------|------|------|-------|
| Lane Group Flow (vph) | 36 | 52 | 27 | 61 | 8 | 1227 | 45 | 1419 |
| v/c Ratio | 0.38 | 0.33 | 0.27 | 0.36 | 0.03 | 0.42 | 0.14 | 0.49 |
| Control Delay | 63.1 | 35.7 | 58.0 | 24.6 | 1.6 | 1.4 | 3.1 | 2.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.1 | 35.7 | 58.0 | 24.6 | 1.6 | 1.4 | 3.1 | 2.8 |
| Queue Length 50th (m) | 8.7 | 6.2 | 6.5 | 2.8 | 0.0 | 2.2 | 1.4 | 26.2 |
| Queue Length 95th (m) | 19.5 | 18.6 | 15.9 | 16.2 | m0.6 | 20.9 | m3.3 | m52.9 |
| Internal Link Dist (m) | | 255.4 | | 171.9 | | 95.4 | | 329.5 |
| Turn Bay Length (m) | 30.0 | | 20.0 | | 35.0 | | 28.0 | |
| Base Capacity (vph) | 303 | 450 | 315 | 431 | 261 | 2928 | 321 | 2904 |
| 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 | 0.12 | 0.12 | 0.09 | 0.14 | 0.03 | 0.42 | 0.14 | 0.49 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Wonderland Road S & Village Green Ave

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|------|------|------|------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | |
| Traffic Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1156 | 34 | 44 | 1352 | 24 |
| Future Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1156 | 34 | 44 | 1352 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Total Lost time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frb, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 0.93 | | 1.00 | 0.88 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1626 | 1738 | | 1675 | 1593 | | 1679 | 3420 | | 1637 | 3394 | |
| Flt Permitted | 0.72 | 1.00 | | 0.72 | 1.00 | | 0.17 | 1.00 | | 0.22 | 1.00 | |
| Satd. Flow (perm) | 1228 | 1738 | | 1275 | 1593 | | 304 | 3420 | | 372 | 3394 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 36 | 26 | 26 | 27 | 12 | 49 | 8 | 1192 | 35 | 45 | 1394 | 25 |
| RTOR Reduction (vph) | 0 | 24 | 0 | 0 | 46 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 36 | 28 | 0 | 27 | 15 | 0 | 8 | 1226 | 0 | 45 | 1419 | 0 |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 9 | | 16 | 16 | | 19 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 2 | | | |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 17% | 0% | 0% | 5% | 0% | 2% | 4% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 7.9 | 7.9 | | 7.9 | 7.9 | | 100.4 | 100.4 | | 100.4 | 100.4 | |
| Effective Green, g (s) | 7.9 | 7.9 | | 7.9 | 7.9 | | 100.4 | 100.4 | | 100.4 | 100.4 | |
| Actuated g/C Ratio | 0.07 | 0.07 | | 0.07 | 0.07 | | 0.84 | 0.84 | | 0.84 | 0.84 | |
| Clearance Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 80 | 114 | | 83 | 104 | | 254 | 2861 | | 311 | 2839 | |
| v/s Ratio Prot | | 0.02 | | | 0.01 | | | 0.36 | | | c0.42 | |
| v/s Ratio Perm | c0.03 | | | 0.02 | | | 0.03 | | | 0.12 | | |
| v/c Ratio | 0.45 | 0.24 | | 0.33 | 0.15 | | 0.03 | 0.43 | | 0.14 | 0.50 | |
| Uniform Delay, d1 | 54.0 | 53.2 | | 53.5 | 52.9 | | 1.6 | 2.5 | | 1.8 | 2.8 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.58 | 0.38 | | 0.90 | 0.76 | |
| Incremental Delay, d2 | 4.0 | 1.1 | | 2.3 | 0.7 | | 0.2 | 0.4 | | 0.8 | 0.5 | |
| Delay (s) | 57.9 | 54.3 | | 55.8 | 53.5 | | 1.2 | 1.4 | | 2.4 | 2.6 | |
| Level of Service | E | D | | E | D | | A | A | | A | A | |
| Approach Delay (s) | | 55.8 | | | 54.2 | | | 1.4 | | | 2.6 | |
| Approach LOS | | E | | | D | | | A | | | A | |

Intersection Summary

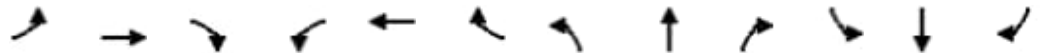
| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 5.3 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.50 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 11.7 |
| Intersection Capacity Utilization | 58.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings

3: Wonderland Road S & Mall Access East (N)/Private Access

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 3 | 0 | 9 | 6 | 0 | 24 | 18 | 1079 | 2 | 15 | 1272 | 76 |
| Future Volume (vph) | 3 | 0 | 9 | 6 | 0 | 24 | 18 | 1079 | 2 | 15 | 1272 | 76 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 50.0 | | 0.0 | 30.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.894 | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.990 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 0 | 1214 | 0 | 1630 | 0 | 1805 | 3471 | 0 | 1805 | 3471 | 1568 |
| Flt Permitted | 0.950 | | | | 0.990 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 0 | 1214 | 0 | 1630 | 0 | 1805 | 3471 | 0 | 1805 | 3471 | 1568 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | 50 | |
| Link Distance (m) | | 100.3 | | | 66.2 | | | 161.3 | | | 119.4 | |
| Travel Time (s) | | 18.1 | | | 11.9 | | | 11.6 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 11 | | 24 | 24 | | 11 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 33% | 0% | 0% | 4% | 0% | 4% | 0% | 0% | 4% | 3% |
| Adj. Flow (vph) | 3 | 0 | 10 | 7 | 0 | 26 | 20 | 1173 | 2 | 16 | 1383 | 83 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 3 | 0 | 10 | 0 | 33 | 0 | 20 | 1175 | 0 | 16 | 1383 | 83 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | |
|-----------------------------------|------------------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 51.8% |
| | ICU Level of Service A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

3: Wonderland Road S & Mall Access East (N)/Private Access

10-20-2022

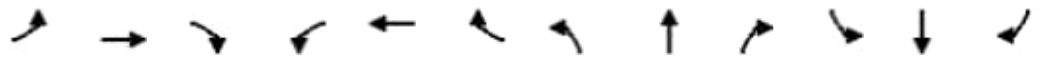


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|------|-------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations | ↗ | | ↖ | | ↕ | | ↗ | ↕ | | ↖ | ↕ | ↗ |
| Traffic Volume (veh/h) | 3 | 0 | 9 | 6 | 0 | 24 | 18 | 1079 | 2 | 15 | 1272 | 76 |
| Future Volume (Veh/h) | 3 | 0 | 9 | 6 | 0 | 24 | 18 | 1079 | 2 | 15 | 1272 | 76 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 3 | 0 | 10 | 7 | 0 | 26 | 20 | 1173 | 2 | 16 | 1383 | 83 |
| Pedestrians | | 11 | | | 24 | | | | | | | |
| Lane Width (m) | | 3.6 | | | 3.6 | | | | | | | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | | | | | |
| Percent Blockage | | 1 | | | 2 | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | 161 | | | 119 | |
| pX, platoon unblocked | 0.93 | 0.93 | 0.88 | 0.93 | 0.93 | 0.90 | 0.88 | | | 0.90 | | |
| vC, conflicting volume | 2078 | 2665 | 702 | 1972 | 2747 | 612 | 1477 | | | 1199 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1552 | 2181 | 403 | 1437 | 2269 | 360 | 1278 | | | 1009 | | |
| tC, single (s) | 7.5 | 6.5 | 7.6 | 7.5 | 6.5 | 7.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.6 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 95 | 100 | 98 | 91 | 100 | 95 | 96 | | | 97 | | |
| cM capacity (veh/h) | 64 | 39 | 454 | 79 | 35 | 559 | 482 | | | 616 | | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | SB 4 | | |
| Volume Total | 3 | 10 | 33 | 20 | 782 | 393 | 16 | 692 | 692 | 83 | | |
| Volume Left | 3 | 0 | 7 | 20 | 0 | 0 | 16 | 0 | 0 | 0 | | |
| Volume Right | 0 | 10 | 26 | 0 | 0 | 2 | 0 | 0 | 0 | 83 | | |
| cSH | 64 | 454 | 245 | 482 | 1700 | 1700 | 616 | 1700 | 1700 | 1700 | | |
| Volume to Capacity | 0.05 | 0.02 | 0.13 | 0.04 | 0.46 | 0.23 | 0.03 | 0.41 | 0.41 | 0.05 | | |
| Queue Length 95th (m) | 1.2 | 0.5 | 3.7 | 1.0 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 | | |
| Control Delay (s) | 63.7 | 13.1 | 22.0 | 12.8 | 0.0 | 0.0 | 11.0 | 0.0 | 0.0 | 0.0 | | |
| Lane LOS | F | B | C | B | | | B | | | | | |
| Approach Delay (s) | 24.8 | | 22.0 | 0.2 | | | 0.1 | | | | | |
| Approach LOS | C | | C | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 0.5 | | | | | | | | | |
| Intersection Capacity Utilization | | | 51.8% | | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022

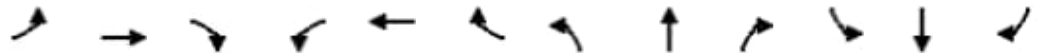


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↗ | | ↔ | | ↗ | ↕ | | ↗ | ↕ | ↗ |
| Traffic Volume (vph) | 51 | 1 | 11 | 6 | 1 | 8 | 11 | 1100 | 5 | 8 | 1197 | 75 |
| Future Volume (vph) | 51 | 1 | 11 | 6 | 1 | 8 | 11 | 1100 | 5 | 8 | 1197 | 75 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 35.0 | | 0.0 | 40.0 | | 35.0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | 1.00 | 0.98 | | 0.99 | | 1.00 | 1.00 | | 0.99 | | 0.98 |
| Frt | | | 0.850 | | 0.929 | | | 0.999 | | | | 0.850 |
| Flt Protected | | 0.953 | | | 0.980 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1552 | 1455 | 0 | 1715 | 0 | 1656 | 3434 | 0 | 1805 | 3471 | 1512 |
| Flt Permitted | | 0.718 | | | 0.845 | | 0.191 | | | 0.216 | | |
| Satd. Flow (perm) | 0 | 1164 | 1420 | 0 | 1471 | 0 | 333 | 3434 | 0 | 406 | 3471 | 1475 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 25 | | 9 | | | 1 | | | | 51 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | | 50 |
| Link Distance (m) | | 105.0 | | | 57.0 | | | 158.8 | | | | 161.3 |
| Travel Time (s) | | 18.9 | | | 10.3 | | | 11.4 | | | | 11.6 |
| Confl. Peds. (#/hr) | 3 | | 9 | 9 | | 3 | 9 | | 37 | 37 | | 9 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 17% | 0% | 11% | 0% | 0% | 0% | 9% | 5% | 0% | 0% | 4% | 3% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Adj. Flow (vph) | 56 | 1 | 12 | 7 | 1 | 9 | 12 | 1209 | 5 | 9 | 1315 | 82 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 57 | 12 | 0 | 17 | 0 | 12 | 1214 | 0 | 9 | 1315 | 82 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.05 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | | 28.7 | 28.7 | | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | | 81.0 | 81.0 | | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 32.5% | 32.5% | 32.5% | 32.5% | | 67.5% | 67.5% | | 67.5% | 67.5% | 67.5% |
| Maximum Green (s) | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | | 75.3 | 75.3 | | 75.3 | 75.3 | 75.3 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 19.0 | 19.0 | 19.0 | 16.0 | 16.0 | | 16.0 | 16.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | | 11.3 | 11.3 | | 11.3 | | 100.1 | 100.1 | | 100.1 | 100.1 | 100.1 |
| Actuated g/C Ratio | | 0.09 | 0.09 | | 0.09 | | 0.83 | 0.83 | | 0.83 | 0.83 | 0.83 |
| v/c Ratio | | 0.52 | 0.08 | | 0.12 | | 0.04 | 0.42 | | 0.03 | 0.45 | 0.07 |
| Control Delay | | 67.3 | 7.8 | | 33.1 | | 2.1 | 2.2 | | 1.6 | 1.6 | 0.2 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.1 | 0.0 |
| Total Delay | | 67.3 | 7.8 | | 33.1 | | 2.1 | 2.3 | | 1.6 | 1.7 | 0.2 |
| LOS | | E | A | | C | | A | A | | A | A | A |
| Approach Delay | | 57.0 | | | 33.1 | | | 2.3 | | | 1.6 | |
| Approach LOS | | E | | | C | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 63 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.52
 Intersection Signal Delay: 3.5
 Intersection LOS: A
 Intersection Capacity Utilization 66.0%
 ICU Level of Service C
 Analysis Period (min) 15

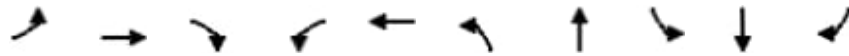
Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022

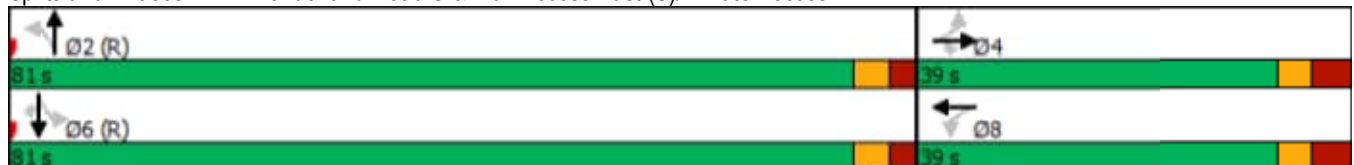


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↔ | | ↔ | ↔ | ↔ | ↔ | ↔ | ↔ |
| Traffic Volume (vph) | 51 | 1 | 11 | 6 | 1 | 11 | 1100 | 8 | 1197 | 75 |
| Future Volume (vph) | 51 | 1 | 11 | 6 | 1 | 11 | 1100 | 8 | 1197 | 75 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | 28.7 | 28.7 | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 32.5% | 32.5% | 32.5% | 32.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | | 11.3 | 11.3 | | 11.3 | 100.1 | 100.1 | 100.1 | 100.1 | 100.1 |
| Actuated g/C Ratio | | 0.09 | 0.09 | | 0.09 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| v/c Ratio | | 0.52 | 0.08 | | 0.12 | 0.04 | 0.42 | 0.03 | 0.45 | 0.07 |
| Control Delay | | 67.3 | 7.8 | | 33.1 | 2.1 | 2.2 | 1.6 | 1.6 | 0.2 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Delay | | 67.3 | 7.8 | | 33.1 | 2.1 | 2.3 | 1.6 | 1.7 | 0.2 |
| LOS | | E | A | | C | A | A | A | A | A |
| Approach Delay | | 57.0 | | | 33.1 | | 2.3 | | 1.6 | |
| Approach LOS | | E | | | C | | A | | A | |

Intersection Summary

| | |
|-------------------------------------------------------------------------|------------------------|
| Cycle Length: 120 | |
| Actuated Cycle Length: 120 | |
| Offset: 63 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 65 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.52 | |
| Intersection Signal Delay: 3.5 | Intersection LOS: A |
| Intersection Capacity Utilization 66.0% | ICU Level of Service C |
| Analysis Period (min) 15 | |

Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Queues

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022



| Lane Group | EBT | EBR | WBT | NBL | NBT | SBL | SBT | SBR |
|------------------------|------|------|------|------|-------|------|-------|------|
| Lane Group Flow (vph) | 57 | 12 | 17 | 12 | 1214 | 9 | 1315 | 82 |
| v/c Ratio | 0.52 | 0.08 | 0.12 | 0.04 | 0.42 | 0.03 | 0.45 | 0.07 |
| Control Delay | 67.3 | 7.8 | 33.1 | 2.1 | 2.2 | 1.6 | 1.6 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Delay | 67.3 | 7.8 | 33.1 | 2.1 | 2.3 | 1.6 | 1.7 | 0.2 |
| Queue Length 50th (m) | 13.7 | 0.0 | 1.8 | 0.3 | 23.3 | 0.2 | 13.4 | 0.0 |
| Queue Length 95th (m) | 27.2 | 3.1 | 8.9 | m0.7 | 27.1 | m0.5 | 20.7 | 0.8 |
| Internal Link Dist (m) | 81.0 | | 33.0 | | 134.8 | | 137.3 | |
| Turn Bay Length (m) | | | | 35.0 | | 40.0 | | 35.0 |
| Base Capacity (vph) | 313 | 400 | 402 | 277 | 2865 | 338 | 2896 | 1239 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 220 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 423 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.03 | 0.04 | 0.04 | 0.46 | 0.03 | 0.53 | 0.07 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations | | ↔ | ↔ | | ↔ | | ↔ | ↔ | | ↔ | ↔ | ↔ |
| Traffic Volume (vph) | 51 | 1 | 11 | 6 | 1 | 8 | 11 | 1100 | 5 | 8 | 1197 | 75 |
| Future Volume (vph) | 51 | 1 | 11 | 6 | 1 | 8 | 11 | 1100 | 5 | 8 | 1197 | 75 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frbp, ped/bikes | | 1.00 | 0.98 | | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 0.98 | 1.00 | 1.00 |
| Frt | | 1.00 | 0.85 | | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | | 0.98 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1545 | 1420 | | 1705 | | 1653 | 3435 | | 1777 | 3471 | 1475 |
| Flt Permitted | | 0.72 | 1.00 | | 0.85 | | 0.19 | 1.00 | | 0.22 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1163 | 1420 | | 1471 | | 333 | 3435 | | 404 | 3471 | 1475 |
| Peak-hour factor, PHF | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 56 | 1 | 12 | 7 | 1 | 9 | 12 | 1209 | 5 | 9 | 1315 | 82 |
| RTOR Reduction (vph) | 0 | 0 | 11 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Lane Group Flow (vph) | 0 | 57 | 1 | 0 | 9 | 0 | 12 | 1214 | 0 | 9 | 1315 | 73 |
| Confl. Peds. (#/hr) | 3 | | 9 | 9 | | 3 | 9 | | 37 | 37 | | 9 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Heavy Vehicles (%) | 17% | 0% | 11% | 0% | 0% | 0% | 9% | 5% | 0% | 0% | 4% | 3% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Actuated Green, G (s) | | 9.9 | 9.9 | | 9.9 | | 97.7 | 97.7 | | 97.7 | 97.7 | 97.7 |
| Effective Green, g (s) | | 9.9 | 9.9 | | 9.9 | | 97.7 | 97.7 | | 97.7 | 97.7 | 97.7 |
| Actuated g/C Ratio | | 0.08 | 0.08 | | 0.08 | | 0.81 | 0.81 | | 0.81 | 0.81 | 0.81 |
| Clearance Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 95 | 117 | | 121 | | 271 | 2796 | | 328 | 2825 | 1200 |
| v/s Ratio Prot | | | | | | | | 0.35 | | | c0.38 | |
| v/s Ratio Perm | | c0.05 | 0.00 | | 0.01 | | 0.04 | | | 0.02 | | 0.05 |
| v/c Ratio | | 0.60 | 0.01 | | 0.07 | | 0.04 | 0.43 | | 0.03 | 0.47 | 0.06 |
| Uniform Delay, d1 | | 53.1 | 50.5 | | 50.8 | | 2.1 | 3.2 | | 2.1 | 3.3 | 2.2 |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.56 | 0.50 | | 0.46 | 0.31 | 0.09 |
| Incremental Delay, d2 | | 9.8 | 0.0 | | 0.3 | | 0.3 | 0.4 | | 0.1 | 0.5 | 0.1 |
| Delay (s) | | 62.9 | 50.6 | | 51.1 | | 1.5 | 2.0 | | 1.1 | 1.5 | 0.3 |
| Level of Service | | E | D | | D | | A | A | | A | A | A |
| Approach Delay (s) | | 60.8 | | | 51.1 | | | 2.0 | | | 1.4 | |
| Approach LOS | | E | | | D | | | A | | | A | |
























Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 3.5 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.48 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 12.4 |
| Intersection Capacity Utilization | 66.0% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings
5: Wonderland Road S & Viscount Rd

10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 153 | 131 | 155 | 71 | 159 | 86 | 139 | 842 | 42 | 60 | 1006 | 147 |
| Future Volume (vph) | 153 | 131 | 155 | 71 | 159 | 86 | 139 | 842 | 42 | 60 | 1006 | 147 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 40.0 | | 95.0 | 30.0 | | 30.0 | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | 0.98 | | 0.89 | 0.93 | 0.99 | | | | 0.89 | 0.98 | | 0.95 |
| Frt | | | 0.850 | | 0.947 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1881 | 1567 | 1736 | 3216 | 0 | 1752 | 3438 | 1509 | 1719 | 3505 | 1468 |
| Flt Permitted | 0.577 | | | 0.523 | | | 0.124 | | | 0.234 | | |
| Satd. Flow (perm) | 1056 | 1881 | 1398 | 885 | 3216 | 0 | 229 | 3438 | 1340 | 417 | 3505 | 1397 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 180 | | 99 | | | | 105 | | | 105 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 157.9 | | | 309.4 | | | 1206.3 | | | 158.8 | |
| Travel Time (s) | | 11.4 | | | 22.3 | | | 86.9 | | | 11.4 | |
| Confl. Peds. (#/hr) | 26 | | 98 | 98 | | 26 | 28 | | 44 | 44 | | 28 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 2 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 4% | 7% | 1% | 3% | 5% | 7% | 5% | 3% | 10% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 178 | 152 | 180 | 83 | 185 | 100 | 162 | 979 | 49 | 70 | 1170 | 171 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 178 | 152 | 180 | 83 | 285 | 0 | 162 | 979 | 49 | 70 | 1170 | 171 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.03 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings
5: Wonderland Road S & Viscount Rd

10-20-2022

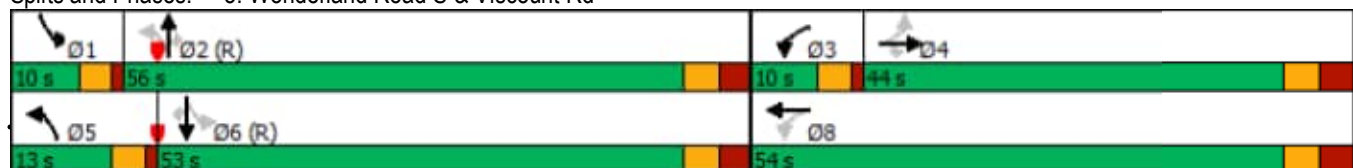


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | | 13.0 | 56.0 | 56.0 | 10.0 | 53.0 | 53.0 |
| Total Split (%) | 36.7% | 36.7% | 36.7% | 8.3% | 45.0% | | 10.8% | 46.7% | 46.7% | 8.3% | 44.2% | 44.2% |
| Maximum Green (s) | 37.5 | 37.5 | 37.5 | 6.0 | 47.5 | | 9.0 | 50.0 | 50.0 | 6.0 | 47.0 | 47.0 |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | None | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | 7.0 | | | 7.0 | 7.0 | | 7.0 | 7.0 |
| Flash Dont Walk (s) | 29.0 | 29.0 | 29.0 | | 29.0 | | | 21.0 | 21.0 | | 21.0 | 21.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | 0 | | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 25.7 | 25.7 | 25.7 | 36.2 | 33.7 | | 75.5 | 64.7 | 64.7 | 67.8 | 58.8 | 58.8 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | 0.30 | 0.28 | | 0.63 | 0.54 | 0.54 | 0.56 | 0.49 | 0.49 |
| v/c Ratio | 0.79 | 0.38 | 0.41 | 0.27 | 0.29 | | 0.57 | 0.53 | 0.06 | 0.23 | 0.68 | 0.23 |
| Control Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | | 29.8 | 20.8 | 1.9 | 13.3 | 27.5 | 8.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | | 29.8 | 20.8 | 1.9 | 13.3 | 27.7 | 8.6 |
| LOS | E | D | A | C | C | | C | C | A | B | C | A |
| Approach Delay | | 37.5 | | | 22.5 | | | 21.2 | | | 24.7 | |
| Approach LOS | | D | | | C | | | C | | | C | |

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 75 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 25.1
 Intersection LOS: C
 Intersection Capacity Utilization 85.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Timings

5: Wonderland Road S & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↑ | ↗ | ↘ | ↕ | ↘ | ↕ | ↗ | ↘ | ↕ | ↗ |
| Traffic Volume (vph) | 153 | 131 | 155 | 71 | 159 | 139 | 842 | 42 | 60 | 1006 | 147 |
| Future Volume (vph) | 153 | 131 | 155 | 71 | 159 | 139 | 842 | 42 | 60 | 1006 | 147 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | 13.0 | 56.0 | 56.0 | 10.0 | 53.0 | 53.0 |
| Total Split (%) | 36.7% | 36.7% | 36.7% | 8.3% | 45.0% | 10.8% | 46.7% | 46.7% | 8.3% | 44.2% | 44.2% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 25.7 | 25.7 | 25.7 | 36.2 | 33.7 | 75.5 | 64.7 | 64.7 | 67.8 | 58.8 | 58.8 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | 0.30 | 0.28 | 0.63 | 0.54 | 0.54 | 0.56 | 0.49 | 0.49 |
| v/c Ratio | 0.79 | 0.38 | 0.41 | 0.27 | 0.29 | 0.57 | 0.53 | 0.06 | 0.23 | 0.68 | 0.23 |
| Control Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | 29.8 | 20.8 | 1.9 | 13.3 | 27.5 | 8.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | 29.8 | 20.8 | 1.9 | 13.3 | 27.7 | 8.6 |
| LOS | E | D | A | C | C | C | C | A | B | C | A |
| Approach Delay | | 37.5 | | | 22.5 | | 21.2 | | | 24.7 | |
| Approach LOS | | D | | | C | | C | | | C | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 75 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 25.1
 Intersection LOS: C
 Intersection Capacity Utilization 85.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Queues

5: Wonderland Road S & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|-------|------|------|-------|-------|--------|------|------|-------|------|
| Lane Group Flow (vph) | 178 | 152 | 180 | 83 | 285 | 162 | 979 | 49 | 70 | 1170 | 171 |
| v/c Ratio | 0.79 | 0.38 | 0.41 | 0.27 | 0.29 | 0.57 | 0.53 | 0.06 | 0.23 | 0.68 | 0.23 |
| Control Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | 29.8 | 20.8 | 1.9 | 13.3 | 27.5 | 8.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 64.8 | 39.5 | 8.8 | 29.6 | 20.5 | 29.8 | 20.8 | 1.9 | 13.3 | 27.7 | 8.6 |
| Queue Length 50th (m) | 43.3 | 32.9 | 2.6 | 14.7 | 18.1 | 18.4 | 71.0 | 0.0 | 5.3 | 148.8 | 6.3 |
| Queue Length 95th (m) | m59.8 | m43.7 | m7.9 | 22.4 | 24.0 | m48.4 | 110.1 | m1.6 | 10.3 | 173.1 | 14.1 |
| Internal Link Dist (m) | | 133.9 | | | 285.4 | | 1182.3 | | | 134.8 | |
| Turn Bay Length (m) | 40.0 | | 95.0 | 30.0 | | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Base Capacity (vph) | 330 | 587 | 560 | 309 | 1332 | 286 | 1854 | 771 | 312 | 1717 | 738 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110 | 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 | 0.54 | 0.26 | 0.32 | 0.27 | 0.21 | 0.57 | 0.53 | 0.06 | 0.22 | 0.73 | 0.23 |
























Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

5: Wonderland Road S & Viscount Rd

10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 153 | 131 | 155 | 71 | 159 | 86 | 139 | 842 | 42 | 60 | 1006 | 147 |
| Future Volume (vph) | 153 | 131 | 155 | 71 | 159 | 86 | 139 | 842 | 42 | 60 | 1006 | 147 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frpb, ped/bikes | 1.00 | 1.00 | 0.89 | 1.00 | 0.99 | | 1.00 | 1.00 | 0.89 | 1.00 | 1.00 | 0.95 |
| Flpb, ped/bikes | 0.98 | 1.00 | 1.00 | 0.96 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1739 | 1881 | 1398 | 1673 | 3217 | | 1752 | 3438 | 1340 | 1713 | 3505 | 1397 |
| Flt Permitted | 0.58 | 1.00 | 1.00 | 0.52 | 1.00 | | 0.12 | 1.00 | 1.00 | 0.23 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1056 | 1881 | 1398 | 920 | 3217 | | 229 | 3438 | 1340 | 421 | 3505 | 1397 |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Adj. Flow (vph) | 178 | 152 | 180 | 83 | 185 | 100 | 162 | 979 | 49 | 70 | 1170 | 171 |
| RTOR Reduction (vph) | 0 | 0 | 141 | 0 | 71 | 0 | 0 | 0 | 23 | 0 | 0 | 54 |
| Lane Group Flow (vph) | 178 | 152 | 39 | 83 | 214 | 0 | 162 | 979 | 26 | 70 | 1170 | 117 |
| Confl. Peds. (#/hr) | 26 | | 98 | 98 | | 26 | 28 | | 44 | 44 | | 28 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 2 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 4% | 7% | 1% | 3% | 5% | 7% | 5% | 3% | 10% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Actuated Green, G (s) | 25.7 | 25.7 | 25.7 | 34.5 | 34.5 | | 73.0 | 63.1 | 63.1 | 63.9 | 58.0 | 58.0 |
| Effective Green, g (s) | 25.7 | 25.7 | 25.7 | 34.5 | 34.5 | | 73.0 | 63.1 | 63.1 | 63.9 | 58.0 | 58.0 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | 0.29 | 0.29 | | 0.61 | 0.53 | 0.53 | 0.53 | 0.48 | 0.48 |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 226 | 402 | 299 | 294 | 924 | | 278 | 1807 | 704 | 287 | 1694 | 675 |
| v/s Ratio Prot | | 0.08 | | c0.01 | 0.07 | | c0.05 | 0.28 | | 0.01 | c0.33 | |
| v/s Ratio Perm | c0.17 | | 0.03 | 0.07 | | | 0.30 | | 0.02 | 0.12 | | 0.08 |
| v/c Ratio | 0.79 | 0.38 | 0.13 | 0.28 | 0.23 | | 0.58 | 0.54 | 0.04 | 0.24 | 0.69 | 0.17 |
| Uniform Delay, d1 | 44.6 | 40.3 | 38.1 | 32.2 | 32.6 | | 16.1 | 18.9 | 13.8 | 14.3 | 24.0 | 17.5 |
| Progression Factor | 0.97 | 0.96 | 1.26 | 1.00 | 1.00 | | 1.77 | 0.94 | 1.00 | 1.01 | 0.96 | 0.85 |
| Incremental Delay, d2 | 15.9 | 0.6 | 0.2 | 0.5 | 0.1 | | 2.9 | 1.1 | 0.1 | 0.4 | 2.2 | 0.5 |
| Delay (s) | 59.0 | 39.2 | 48.3 | 32.8 | 32.8 | | 31.5 | 18.9 | 13.8 | 14.9 | 25.3 | 15.4 |
| Level of Service | E | D | D | C | C | | C | B | B | B | C | B |
| Approach Delay (s) | | 49.3 | | | 32.8 | | | 20.4 | | | 23.6 | |
| Approach LOS | | D | | | C | | | C | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 27.2 | HCM 2000 Level of Service | | | | C | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.69 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | Sum of lost time (s) | | | | 20.5 | | | | |
| Intersection Capacity Utilization | | | 85.9% | ICU Level of Service | | | | E | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
6: Wonderland Road S & Southdale Road W

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Lane Configurations | ↘ | ↑↑ | ↗ | ↘ | ↑↑ | | ↘ | ↑↑ | | ↘ | ↑↑ | |
| Traffic Volume (vph) | 102 | 325 | 38 | 74 | 226 | 231 | 58 | 508 | 28 | 329 | 742 | 57 |
| Future Volume (vph) | 102 | 325 | 38 | 74 | 226 | 231 | 58 | 508 | 28 | 329 | 742 | 57 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 35.0 | | 35.0 | 80.0 | | 0.0 | 75.0 | | 0.0 | 35.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | | 0.97 | 0.99 | 0.98 | | 0.99 | 1.00 | | 0.99 | 1.00 | |
| Frt | | | 0.850 | | 0.924 | | | 0.992 | | | 0.989 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1736 | 3574 | 1429 | 1736 | 3127 | 0 | 1583 | 3219 | 0 | 1719 | 3433 | 0 |
| Flt Permitted | 0.208 | | | 0.397 | | | 0.321 | | | 0.344 | | |
| Satd. Flow (perm) | 377 | 3574 | 1390 | 719 | 3127 | 0 | 532 | 3219 | 0 | 616 | 3433 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 137 | | 224 | | | 4 | | | 8 | |
| Link Speed (k/h) | | 60 | | | 60 | | | 60 | | | 60 | |
| Link Distance (m) | | 446.9 | | | 385.1 | | | 438.6 | | | 1206.3 | |
| Travel Time (s) | | 26.8 | | | 23.1 | | | 26.3 | | | 72.4 | |
| Confl. Peds. (#/hr) | 17 | | 14 | 14 | | 17 | 15 | | 27 | 27 | | 15 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 1% | 13% | 4% | 4% | 6% | 14% | 10% | 29% | 5% | 3% | 14% |
| Adj. Flow (vph) | 113 | 361 | 42 | 82 | 251 | 257 | 64 | 564 | 31 | 366 | 824 | 63 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 113 | 361 | 42 | 82 | 508 | 0 | 64 | 595 | 0 | 366 | 887 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |

Lanes, Volumes, Timings
6: Wonderland Road S & Southdale Road W

10-20-2022

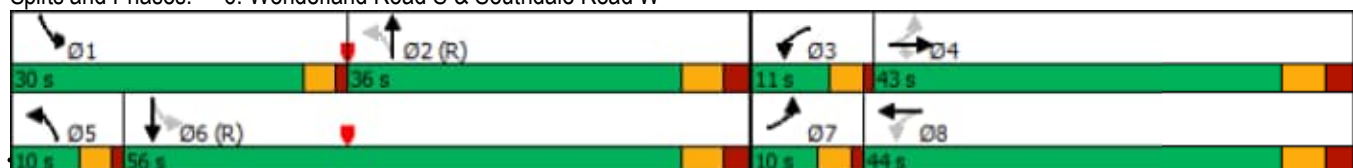


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | | 9.0 | 35.1 | | 9.0 | 35.1 | |
| Total Split (s) | 10.0 | 43.0 | 43.0 | 11.0 | 44.0 | | 10.0 | 36.0 | | 30.0 | 56.0 | |
| Total Split (%) | 8.3% | 35.8% | 35.8% | 9.2% | 36.7% | | 8.3% | 30.0% | | 25.0% | 46.7% | |
| Maximum Green (s) | 6.0 | 36.4 | 36.4 | 7.0 | 37.4 | | 6.0 | 29.9 | | 26.0 | 49.9 | |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | | 3.0 | 3.7 | | 3.0 | 3.7 | |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | | 1.0 | 2.4 | | 1.0 | 2.4 | |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | C-Max | | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 25.0 | 25.0 | | 25.0 | | | 22.0 | | | 22.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 26.6 | 19.2 | 19.2 | 27.5 | 18.0 | | 65.2 | 55.9 | | 81.4 | 70.0 | |
| Actuated g/C Ratio | 0.22 | 0.16 | 0.16 | 0.23 | 0.15 | | 0.54 | 0.47 | | 0.68 | 0.58 | |
| v/c Ratio | 0.75 | 0.63 | 0.12 | 0.37 | 0.77 | | 0.18 | 0.40 | | 0.61 | 0.44 | |
| Control Delay | 66.0 | 52.5 | 0.8 | 38.5 | 34.9 | | 10.6 | 24.0 | | 24.4 | 8.5 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 66.0 | 52.5 | 0.8 | 38.5 | 34.9 | | 10.6 | 24.0 | | 24.4 | 8.5 | |
| LOS | E | D | A | D | C | | B | C | | C | A | |
| Approach Delay | | 51.2 | | | 35.4 | | | 22.7 | | | 13.2 | |
| Approach LOS | | D | | | D | | | C | | | B | |

Intersection Summary

| | |
|------------------------------------|-----------------------------------------------------------------|
| Area Type: | Other |
| Cycle Length: | 120 |
| Actuated Cycle Length: | 120 |
| Offset: | 34 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green |
| Natural Cycle: | 95 |
| Control Type: | Actuated-Coordinated |
| Maximum v/c Ratio: | 0.77 |
| Intersection Signal Delay: | 26.1 |
| Intersection LOS: | C |
| Intersection Capacity Utilization: | 85.1% |
| ICU Level of Service: | E |
| Analysis Period (min): | 15 |

Splits and Phases: 6: Wonderland Road S & Southdale Road W

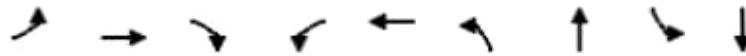


FB AM 10:17 pm 10-13-2022

Timings

6: Wonderland Road S & Southdale Road W

10-20-2022

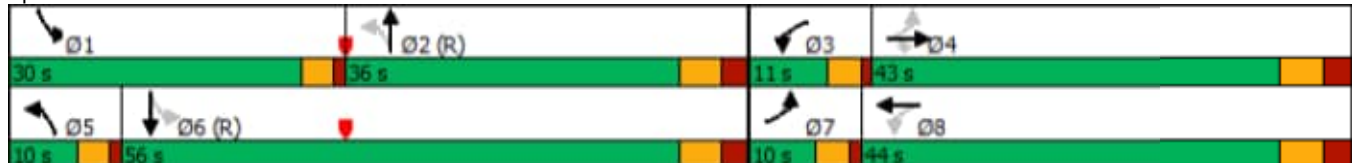


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↶ | ↕ | ↷ | ↶ | ↕ | ↷ | ↕ | ↶ | ↕ |
| Traffic Volume (vph) | 102 | 325 | 38 | 74 | 226 | 58 | 508 | 329 | 742 |
| Future Volume (vph) | 102 | 325 | 38 | 74 | 226 | 58 | 508 | 329 | 742 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | 9.0 | 35.1 | 9.0 | 35.1 |
| Total Split (s) | 10.0 | 43.0 | 43.0 | 11.0 | 44.0 | 10.0 | 36.0 | 30.0 | 56.0 |
| Total Split (%) | 8.3% | 35.8% | 35.8% | 9.2% | 36.7% | 8.3% | 30.0% | 25.0% | 46.7% |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | 3.0 | 3.7 | 3.0 | 3.7 |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 1.0 | 2.4 | 1.0 | 2.4 |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 4.0 | 6.1 | 4.0 | 6.1 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | None | C-Max |
| Act Effct Green (s) | 26.6 | 19.2 | 19.2 | 27.5 | 18.0 | 65.2 | 55.9 | 81.4 | 70.0 |
| Actuated g/C Ratio | 0.22 | 0.16 | 0.16 | 0.23 | 0.15 | 0.54 | 0.47 | 0.68 | 0.58 |
| v/c Ratio | 0.75 | 0.63 | 0.12 | 0.37 | 0.77 | 0.18 | 0.40 | 0.61 | 0.44 |
| Control Delay | 66.0 | 52.5 | 0.8 | 38.5 | 34.9 | 10.6 | 24.0 | 24.4 | 8.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.0 | 52.5 | 0.8 | 38.5 | 34.9 | 10.6 | 24.0 | 24.4 | 8.5 |
| LOS | E | D | A | D | C | B | C | C | A |
| Approach Delay | | 51.2 | | | 35.4 | | 22.7 | | 13.2 |
| Approach LOS | | D | | | D | | C | | B |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 34 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 26.1
 Intersection LOS: C
 Intersection Capacity Utilization 85.1%
 ICU Level of Service E
 Analysis Period (min) 15

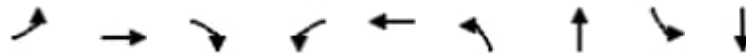
Splits and Phases: 6: Wonderland Road S & Southdale Road W



Queues

6: Wonderland Road S & Southdale Road W

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|------|------|-------|------|-------|------|--------|
| Lane Group Flow (vph) | 113 | 361 | 42 | 82 | 508 | 64 | 595 | 366 | 887 |
| v/c Ratio | 0.75 | 0.63 | 0.12 | 0.37 | 0.77 | 0.18 | 0.40 | 0.61 | 0.44 |
| Control Delay | 66.0 | 52.5 | 0.8 | 38.5 | 34.9 | 10.6 | 24.0 | 24.4 | 8.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.0 | 52.5 | 0.8 | 38.5 | 34.9 | 10.6 | 24.0 | 24.4 | 8.5 |
| Queue Length 50th (m) | 22.3 | 45.3 | 0.0 | 15.9 | 36.0 | 4.9 | 49.7 | 30.0 | 15.8 |
| Queue Length 95th (m) | #42.5 | 59.0 | 0.0 | 28.0 | 53.3 | 11.3 | 80.3 | 73.9 | 47.3 |
| Internal Link Dist (m) | | 422.9 | | | 361.1 | | 414.6 | | 1182.3 |
| Turn Bay Length (m) | 35.0 | | 35.0 | 80.0 | | 75.0 | | 35.0 | |
| Base Capacity (vph) | 151 | 1084 | 517 | 224 | 1128 | 353 | 1501 | 661 | 2007 |
| 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 | 0.75 | 0.33 | 0.08 | 0.37 | 0.45 | 0.18 | 0.40 | 0.55 | 0.44 |

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

6: Wonderland Road S & Southdale Road W

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| Lane Configurations | ↶ | ↷ | ↷ | ↶ | ↷ | | ↶ | ↷ | | ↶ | ↷ | |
| Traffic Volume (vph) | 102 | 325 | 38 | 74 | 226 | 231 | 58 | 508 | 28 | 329 | 742 | 57 |
| Future Volume (vph) | 102 | 325 | 38 | 74 | 226 | 231 | 58 | 508 | 28 | 329 | 742 | 57 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.92 | | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1733 | 3574 | 1390 | 1730 | 3127 | | 1581 | 3220 | | 1713 | 3434 | |
| Flt Permitted | 0.21 | 1.00 | 1.00 | 0.40 | 1.00 | | 0.32 | 1.00 | | 0.34 | 1.00 | |
| Satd. Flow (perm) | 380 | 3574 | 1390 | 722 | 3127 | | 533 | 3220 | | 619 | 3434 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 113 | 361 | 42 | 82 | 251 | 257 | 64 | 564 | 31 | 366 | 824 | 63 |
| RTOR Reduction (vph) | 0 | 0 | 35 | 0 | 189 | 0 | 0 | 2 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 113 | 361 | 7 | 82 | 319 | 0 | 64 | 593 | 0 | 366 | 884 | 0 |
| Confl. Peds. (#/hr) | 17 | | 14 | 14 | | 17 | 15 | | 27 | 27 | | 15 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Heavy Vehicles (%) | 4% | 1% | 13% | 4% | 4% | 6% | 14% | 10% | 29% | 5% | 3% | 14% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 25.2 | 19.2 | 19.2 | 24.4 | 18.8 | | 61.2 | 55.1 | | 78.5 | 68.4 | |
| Effective Green, g (s) | 25.2 | 19.2 | 19.2 | 24.4 | 18.8 | | 61.2 | 55.1 | | 78.5 | 68.4 | |
| Actuated g/C Ratio | 0.21 | 0.16 | 0.16 | 0.20 | 0.16 | | 0.51 | 0.46 | | 0.65 | 0.57 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 147 | 571 | 222 | 193 | 489 | | 325 | 1478 | | 581 | 1957 | |
| v/s Ratio Prot | c0.04 | 0.10 | | 0.02 | 0.10 | | 0.01 | 0.18 | | c0.10 | 0.26 | |
| v/s Ratio Perm | c0.12 | | 0.00 | 0.07 | | | 0.09 | | | c0.31 | | |
| v/c Ratio | 0.77 | 0.63 | 0.03 | 0.42 | 0.65 | | 0.20 | 0.40 | | 0.63 | 0.45 | |
| Uniform Delay, d1 | 41.7 | 47.1 | 42.5 | 40.1 | 47.5 | | 15.0 | 21.5 | | 10.2 | 14.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 2.38 | 0.52 | |
| Incremental Delay, d2 | 21.1 | 2.3 | 0.1 | 1.5 | 3.1 | | 0.3 | 0.8 | | 1.7 | 0.6 | |
| Delay (s) | 62.8 | 49.4 | 42.6 | 41.6 | 50.6 | | 15.3 | 22.3 | | 26.0 | 8.3 | |
| Level of Service | E | D | D | D | D | | B | C | | C | A | |
| Approach Delay (s) | | 51.8 | | | 49.4 | | | 21.6 | | | 13.5 | |
| Approach LOS | | D | | | D | | | C | | | B | |






















Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 28.8 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.69 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 20.7 |
| Intersection Capacity Utilization | 85.1% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

Lanes, Volumes, Timings

7: Saunders School Access/Mall Access South (E) & Viscount Rd

10-20-2022






















| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (vph) | 9 | 282 | 45 | 146 | 236 | 51 | 9 | 2 | 95 | 14 | 2 | 7 |
| Future Volume (vph) | 9 | 282 | 45 | 146 | 236 | 51 | 9 | 2 | 95 | 14 | 2 | 7 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 30.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.979 | | | | 0.850 | | 0.853 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 1726 | 0 | 1805 | 1792 | 1346 | 1805 | 1621 | 0 | 1583 | 0 | 1615 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 1726 | 0 | 1805 | 1792 | 1346 | 1805 | 1621 | 0 | 1583 | 0 | 1615 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | 20 | |
| Link Distance (m) | | 134.9 | | | 157.9 | | | 74.1 | | | 83.9 | |
| Travel Time (s) | | 12.1 | | | 14.2 | | | 13.3 | | | 15.1 | |
| Confl. Peds. (#/hr) | 9 | | 17 | 17 | | 9 | 67 | | 26 | 26 | | 67 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.67 | 0.67 | 0.67 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 0% | 9% | 0% | 0% | 6% | 20% | 0% | 0% | 0% | 14% | 0% | 0% |
| Adj. Flow (vph) | 10 | 328 | 52 | 170 | 274 | 59 | 13 | 3 | 142 | 16 | 2 | 8 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 10 | 380 | 0 | 170 | 274 | 59 | 13 | 145 | 0 | 16 | 2 | 8 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | |
|----------------------------------------|------------------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization Err% | ICU Level of Service H |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

7: Saunders School Access/Mall Access South (E) & Viscount Rd

10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (veh/h) | 9 | 282 | 45 | 146 | 236 | 51 | 9 | 2 | 95 | 14 | 2 | 7 |
| Future Volume (Veh/h) | 9 | 282 | 45 | 146 | 236 | 51 | 9 | 2 | 95 | 14 | 2 | 7 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.67 | 0.67 | 0.67 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 10 | 328 | 52 | 170 | 274 | 59 | 13 | 3 | 142 | 16 | 2 | 8 |
| Pedestrians | | 67 | | | 26 | | | 17 | | | 9 | |
| Lane Width (m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 6 | | | 2 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (m) | | 135 | | | 158 | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 342 | | | 397 | | | 1081 | 1073 | 397 | 1140 | 1040 | 350 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 342 | | | 397 | | | 1081 | 1073 | 397 | 1140 | 1040 | 350 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.2 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.6 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 85 | | | 92 | 98 | 78 | 85 | 99 | 99 |
| cM capacity (veh/h) | 1219 | | | 1156 | | | 156 | 184 | 634 | 109 | 192 | 654 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | NB 2 | SB 1 | SB 2 | | | |
| Volume Total | 10 | 380 | 170 | 274 | 59 | 13 | 145 | 16 | 10 | | | |
| Volume Left | 10 | 0 | 170 | 0 | 0 | 13 | 0 | 16 | 0 | | | |
| Volume Right | 0 | 52 | 0 | 0 | 59 | 0 | 142 | 0 | 8 | | | |
| cSH | 1219 | 1700 | 1156 | 1700 | 1700 | 156 | 603 | 109 | 442 | | | |
| Volume to Capacity | 0.01 | 0.22 | 0.15 | 0.16 | 0.03 | 0.08 | 0.24 | 0.15 | 0.02 | | | |
| Queue Length 95th (m) | 0.2 | 0.0 | 4.1 | 0.0 | 0.0 | 2.1 | 7.5 | 4.0 | 0.6 | | | |
| Control Delay (s) | 8.0 | 0.0 | 8.7 | 0.0 | 0.0 | 30.2 | 12.9 | 43.7 | 13.3 | | | |
| Lane LOS | A | | A | | | D | B | E | B | | | |
| Approach Delay (s) | 0.2 | | 2.9 | | | 14.3 | | 32.0 | | | | |
| Approach LOS | | | | | | B | | D | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 4.3 | | | | | | | | | |
| Intersection Capacity Utilization | | | Err% | | ICU Level of Service | | | | H | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022

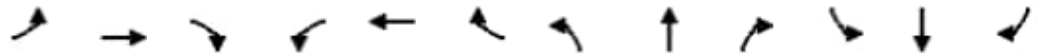


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 214 | 147 | 110 | 73 | 74 | 68 | 5 | 87 | 34 | 21 | 23 |
| Future Volume (vph) | 69 | 214 | 147 | 110 | 73 | 74 | 68 | 5 | 87 | 34 | 21 | 23 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 50.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 0.98 | 0.97 | | 0.97 | | 0.96 | 0.96 | 0.89 | | | 0.95 | 0.94 |
| Frt | | 0.939 | | | | 0.850 | | 0.859 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | | 0.970 | |
| Satd. Flow (prot) | 1752 | 1659 | 0 | 1736 | 1759 | 1509 | 1752 | 1361 | 0 | 0 | 1629 | 1380 |
| Flt Permitted | 0.702 | | | 0.354 | | | 0.715 | | | | 0.811 | |
| Satd. Flow (perm) | 1264 | 1659 | 0 | 629 | 1759 | 1452 | 1272 | 1361 | 0 | 0 | 1292 | 1301 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 62 | | | | 86 | | 132 | | | | 49 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | | 20 |
| Link Distance (m) | | 153.2 | | | 134.9 | | | 64.6 | | | | 87.9 |
| Travel Time (s) | | 13.8 | | | 12.1 | | | 11.6 | | | | 15.8 |
| Confl. Peds. (#/hr) | 28 | | 38 | 38 | | 28 | 36 | | 93 | 93 | | 36 |
| Confl. Bikes (#/hr) | | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.66 | 0.66 | 0.66 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 3% | 4% | 4% | 4% | 8% | 7% | 3% | 0% | 7% | 18% | 5% | 17% |
| Adj. Flow (vph) | 80 | 249 | 171 | 128 | 85 | 86 | 103 | 8 | 132 | 40 | 24 | 27 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 80 | 420 | 0 | 128 | 85 | 86 | 103 | 140 | 0 | 0 | 64 | 27 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | Yes | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |
| Detector 2 Channel | | | | | | | | | | | | |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022

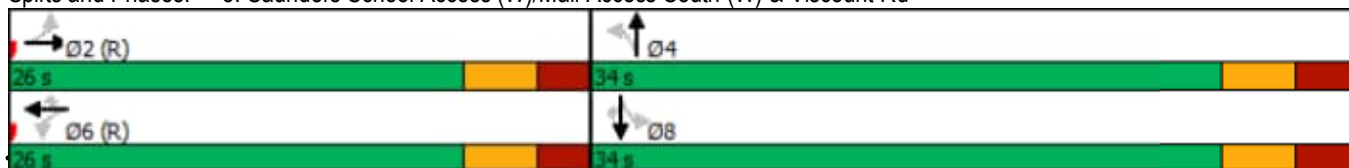


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-----|-------|-------|-------|
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Detector Phase | 2 | 2 | | 6 | 6 | 6 | 4 | 4 | | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 26.0 | 34.0 | 34.0 | | 34.0 | 34.0 | 34.0 |
| Total Split (%) | 43.3% | 43.3% | | 43.3% | 43.3% | 43.3% | 56.7% | 56.7% | | 56.7% | 56.7% | 56.7% |
| Maximum Green (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | 28.1 | 28.1 | 28.1 |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | | 2.6 | 2.6 | 2.6 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | C-Max | C-Max | | C-Max | C-Max | C-Max | Max | Max | | Max | Max | Max |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 | 19.0 | 19.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | 28.1 | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.34 | 0.34 | | 0.34 | 0.34 | 0.34 | 0.47 | 0.47 | | 0.47 | 0.47 | 0.47 |
| v/c Ratio | 0.19 | 0.70 | | 0.60 | 0.14 | 0.16 | 0.17 | 0.20 | | 0.11 | 0.04 | 0.04 |
| Control Delay | 15.5 | 22.1 | | 30.9 | 14.2 | 4.5 | 10.2 | 3.1 | | 9.6 | 1.7 | 1.7 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | 15.5 | 22.1 | | 30.9 | 14.2 | 4.5 | 10.2 | 3.1 | | 9.6 | 1.7 | 1.7 |
| LOS | B | C | | C | B | A | B | A | | A | A | A |
| Approach Delay | | 21.1 | | | 18.6 | | | 6.1 | | | 7.2 | |
| Approach LOS | | C | | | B | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 47 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 16.1
 Intersection LOS: B
 Intersection Capacity Utilization 77.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↗ | ↘ | ↗ | ↖ | ↗ | ↗ | ↘ | | ↖ | ↗ |
| Traffic Volume (vph) | 69 | 214 | 110 | 73 | 74 | 68 | 5 | 34 | 21 | 23 |
| Future Volume (vph) | 69 | 214 | 110 | 73 | 74 | 68 | 5 | 34 | 21 | 23 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 2 | | 6 | | | 4 | | 8 | |
| Permitted Phases | 2 | | 6 | | 6 | 4 | | 8 | | 8 |
| Detector Phase | 2 | 2 | 6 | 6 | 6 | 4 | 4 | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 34.0 | 34.0 | 34.0 | 34.0 | 34.0 |
| Total Split (%) | 43.3% | 43.3% | 43.3% | 43.3% | 43.3% | 56.7% | 56.7% | 56.7% | 56.7% | 56.7% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| 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) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | C-Max | C-Max | Max | Max | Max | Max | Max |
| Act Effct Green (s) | 20.3 | 20.3 | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.47 | 0.47 | | 0.47 | 0.47 |
| v/c Ratio | 0.19 | 0.70 | 0.60 | 0.14 | 0.16 | 0.17 | 0.20 | | 0.11 | 0.04 |
| Control Delay | 15.5 | 22.1 | 30.9 | 14.2 | 4.5 | 10.2 | 3.1 | | 9.6 | 1.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 15.5 | 22.1 | 30.9 | 14.2 | 4.5 | 10.2 | 3.1 | | 9.6 | 1.7 |
| LOS | B | C | C | B | A | B | A | | A | A |
| Approach Delay | | 21.1 | | 18.6 | | | 6.1 | | 7.2 | |
| Approach LOS | | C | | B | | | A | | A | |

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 47 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 16.1

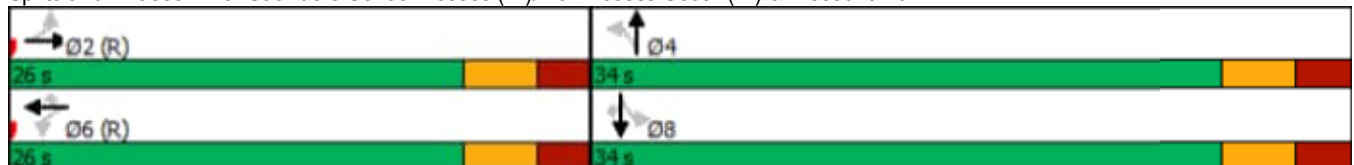
Intersection LOS: B

Intersection Capacity Utilization 77.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Queues

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBT | SBR |
|------------------------|------|-------|------|-------|------|------|------|------|------|
| Lane Group Flow (vph) | 80 | 420 | 128 | 85 | 86 | 103 | 140 | 64 | 27 |
| v/c Ratio | 0.19 | 0.70 | 0.60 | 0.14 | 0.16 | 0.17 | 0.20 | 0.11 | 0.04 |
| Control Delay | 15.5 | 22.1 | 30.9 | 14.2 | 4.5 | 10.2 | 3.1 | 9.6 | 1.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 15.5 | 22.1 | 30.9 | 14.2 | 4.5 | 10.2 | 3.1 | 9.6 | 1.7 |
| Queue Length 50th (m) | 6.4 | 34.8 | 15.0 | 8.4 | 0.0 | 6.5 | 0.5 | 3.9 | 0.0 |
| Queue Length 95th (m) | 14.4 | 59.4 | 28.6 | 13.0 | 2.8 | 10.0 | 3.6 | 9.3 | 1.8 |
| Internal Link Dist (m) | | 129.2 | | 110.9 | | | 40.6 | 63.9 | |
| Turn Bay Length (m) | 30.0 | | 50.0 | | | | | | |
| Base Capacity (vph) | 427 | 602 | 212 | 595 | 548 | 595 | 707 | 605 | 635 |
| 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 | 0.19 | 0.70 | 0.60 | 0.14 | 0.16 | 0.17 | 0.20 | 0.11 | 0.04 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022



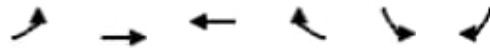
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|------|------|-------|------|------|------|------|------|
| Lane Configurations | ↗ | ↘ | | ↗ | ↖ | ↗ | ↗ | ↘ | | | ↖ | ↗ |
| Traffic Volume (vph) | 69 | 214 | 147 | 110 | 73 | 74 | 68 | 5 | 87 | 34 | 21 | 23 |
| Future Volume (vph) | 69 | 214 | 147 | 110 | 73 | 74 | 68 | 5 | 87 | 34 | 21 | 23 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Frbp, ped/bikes | 1.00 | 0.97 | | 1.00 | 1.00 | 0.96 | 1.00 | 0.89 | | | 1.00 | 0.94 |
| Flpb, ped/bikes | 0.98 | 1.00 | | 0.97 | 1.00 | 1.00 | 0.96 | 1.00 | | | 0.95 | 1.00 |
| Frt | 1.00 | 0.94 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.86 | | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | | 0.97 | 1.00 |
| Satd. Flow (prot) | 1711 | 1659 | | 1687 | 1759 | 1452 | 1691 | 1361 | | | 1545 | 1301 |
| Flt Permitted | 0.70 | 1.00 | | 0.35 | 1.00 | 1.00 | 0.72 | 1.00 | | | 0.81 | 1.00 |
| Satd. Flow (perm) | 1264 | 1659 | | 629 | 1759 | 1452 | 1273 | 1361 | | | 1292 | 1301 |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.66 | 0.66 | 0.66 | 0.86 | 0.86 | 0.86 |
| Adj. Flow (vph) | 80 | 249 | 171 | 128 | 85 | 86 | 103 | 8 | 132 | 40 | 24 | 27 |
| RTOR Reduction (vph) | 0 | 41 | 0 | 0 | 0 | 57 | 0 | 70 | 0 | 0 | 0 | 14 |
| Lane Group Flow (vph) | 80 | 379 | 0 | 128 | 85 | 29 | 103 | 70 | 0 | 0 | 64 | 13 |
| Confl. Peds. (#/hr) | 28 | | 38 | 38 | | 28 | 36 | | 93 | 93 | | 36 |
| Confl. Bikes (#/hr) | | | 2 | | | | | | | | | |
| Heavy Vehicles (%) | 3% | 4% | 4% | 4% | 8% | 7% | 3% | 0% | 7% | 18% | 5% | 17% |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Actuated Green, G (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | | 28.1 | 28.1 |
| Effective Green, g (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.34 | 0.34 | | 0.34 | 0.34 | 0.34 | 0.47 | 0.47 | | | 0.47 | 0.47 |
| Clearance Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 427 | 561 | | 212 | 595 | 491 | 596 | 637 | | | 605 | 609 |
| v/s Ratio Prot | | c0.23 | | | 0.05 | | | 0.05 | | | | |
| v/s Ratio Perm | 0.06 | | | 0.20 | | 0.02 | c0.08 | | | | 0.05 | 0.01 |
| v/c Ratio | 0.19 | 0.68 | | 0.60 | 0.14 | 0.06 | 0.17 | 0.11 | | | 0.11 | 0.02 |
| Uniform Delay, d1 | 14.0 | 17.0 | | 16.5 | 13.8 | 13.4 | 9.2 | 8.9 | | | 8.9 | 8.6 |
| Progression Factor | 1.00 | 1.00 | | 1.10 | 0.98 | 1.35 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | 1.0 | 6.4 | | 11.8 | 0.5 | 0.2 | 0.6 | 0.3 | | | 0.4 | 0.1 |
| Delay (s) | 15.0 | 23.4 | | 29.9 | 14.0 | 18.3 | 9.9 | 9.3 | | | 9.3 | 8.6 |
| Level of Service | B | C | | C | B | B | A | A | | | A | A |
| Approach Delay (s) | | 22.1 | | | 22.0 | | | 9.5 | | | 9.1 | |
| Approach LOS | | C | | | C | | | A | | | A | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 18.3 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.38 | | |
| Actuated Cycle Length (s) | 60.0 | Sum of lost time (s) | 11.6 |
| Intersection Capacity Utilization | 77.1% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

Lanes, Volumes, Timings
 9: Viscount Rd & Woodcrest Rd

10-20-2022



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|--------------|-------|-------|------------------------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 11 | 376 | 137 | 32 | 52 | 21 |
| Future Volume (vph) | 11 | 376 | 137 | 32 | 52 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.974 | | 0.962 | |
| Flt Protected | | 0.999 | | | 0.965 | |
| Satd. Flow (prot) | 0 | 1810 | 1733 | 0 | 1522 | 0 |
| Flt Permitted | | 0.999 | | | 0.965 | |
| Satd. Flow (perm) | 0 | 1810 | 1733 | 0 | 1522 | 0 |
| Link Speed (k/h) | | 40 | 40 | | 50 | |
| Link Distance (m) | | 15.9 | 153.2 | | 195.3 | |
| Travel Time (s) | | 1.4 | 13.8 | | 14.1 | |
| Confl. Peds. (#/hr) | 15 | | | 15 | | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Heavy Vehicles (%) | 0% | 5% | 7% | 6% | 2% | 10% |
| Parking (#/hr) | | | | | 0 | |
| Adj. Flow (vph) | 14 | 488 | 178 | 42 | 68 | 27 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 502 | 220 | 0 | 95 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(m) | | 3.6 | 3.6 | | 3.6 | |
| Link Offset(m) | | 0.0 | 0.0 | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | Yes | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.14 | 1.00 |
| Turning Speed (k/h) | 25 | | | 15 | 25 | 15 |
| Sign Control | | Free | Free | | Stop | |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 39.5% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis

9: Viscount Rd & Woodcrest Rd

10-20-2022

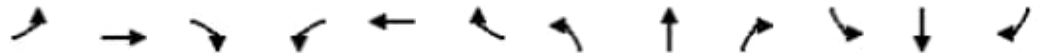


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|-------------|-------------|-------------|------|----------------------|------|
| Lane Configurations | | 4 | 1 | | 2 | |
| Traffic Volume (veh/h) | 11 | 376 | 137 | 32 | 52 | 21 |
| Future Volume (Veh/h) | 11 | 376 | 137 | 32 | 52 | 21 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Hourly flow rate (vph) | 14 | 488 | 178 | 42 | 68 | 27 |
| Pedestrians | | | | | 15 | |
| Lane Width (m) | | | | | 3.6 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | TWLTL | | | |
| Median storage veh | | | 2 | | | |
| Upstream signal (m) | | 16 | 153 | | | |
| pX, platoon unblocked | | | | | 0.87 | |
| vC, conflicting volume | 235 | | | | 730 | 214 |
| vC1, stage 1 conf vol | | | | | 214 | |
| vC2, stage 2 conf vol | | | | | 516 | |
| vCu, unblocked vol | 235 | | | | 619 | 214 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.3 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.4 |
| p0 queue free % | 99 | | | | 88 | 97 |
| cM capacity (veh/h) | 1327 | | | | 557 | 796 |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 502 | 220 | 95 | | | |
| Volume Left | 14 | 0 | 68 | | | |
| Volume Right | 0 | 42 | 27 | | | |
| cSH | 1327 | 1700 | 609 | | | |
| Volume to Capacity | 0.01 | 0.13 | 0.16 | | | |
| Queue Length 95th (m) | 0.3 | 0.0 | 4.4 | | | |
| Control Delay (s) | 0.3 | 0.0 | 12.0 | | | |
| Lane LOS | A | | B | | | |
| Approach Delay (s) | 0.3 | 0.0 | 12.0 | | | |
| Approach LOS | | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.6 | | | |
| Intersection Capacity Utilization | | | 39.5% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|-------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Traffic Volume (vph) | 0 | 11 | 31 | 44 | 26 | 21 | 61 | 42 | 45 | 0 | 3 | 3 |
| Future Volume (vph) | 0 | 11 | 31 | 44 | 26 | 21 | 61 | 42 | 45 | 0 | 3 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.901 | | | 0.969 | | | 0.923 | | | 0.932 | |
| Flt Protected | | | | | 0.976 | | 0.950 | | | | | |
| Satd. Flow (prot) | 0 | 1640 | 0 | 0 | 1652 | 0 | 1770 | 1605 | 0 | 0 | 1771 | 0 |
| Flt Permitted | | | | | 0.976 | | 0.950 | | | | | |
| Satd. Flow (perm) | 0 | 1640 | 0 | 0 | 1652 | 0 | 1770 | 1605 | 0 | 0 | 1771 | 0 |
| Link Speed (k/h) | | 20 | | | 20 | | | 20 | | | 20 | |
| Link Distance (m) | | 78.9 | | | 182.4 | | | 87.9 | | | 68.5 | |
| Travel Time (s) | | 14.2 | | | 32.8 | | | 15.8 | | | 12.3 | |
| Confl. Peds. (#/hr) | 2 | | 17 | 17 | | 2 | | | | | | |
| Confl. Bikes (#/hr) | | | 2 | | | | | | | | | 2 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 0% | 0% | 6% | 18% | 0% | 0% | 2% | 0% | 18% | 0% | 0% | 0% |
| Adj. Flow (vph) | 0 | 13 | 36 | 51 | 30 | 24 | 71 | 49 | 52 | 0 | 3 | 3 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 49 | 0 | 0 | 105 | 0 | 71 | 101 | 0 | 0 | 6 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |

Intersection Summary

Area Type: Other

Control Type: Unsignalized

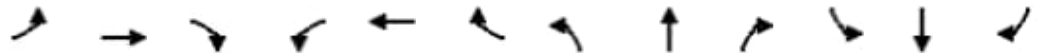
Intersection Capacity Utilization 28.6% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 0 | 11 | 31 | 44 | 26 | 21 | 61 | 42 | 45 | 0 | 3 | 3 |
| Future Volume (vph) | 0 | 11 | 31 | 44 | 26 | 21 | 61 | 42 | 45 | 0 | 3 | 3 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 13 | 36 | 51 | 30 | 24 | 71 | 49 | 52 | 0 | 3 | 3 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|-----------------------|-------|------|------|-------|-------|
| Volume Total (vph) | 49 | 105 | 71 | 101 | 6 |
| Volume Left (vph) | 0 | 51 | 71 | 0 | 0 |
| Volume Right (vph) | 36 | 24 | 0 | 52 | 3 |
| Hadj (s) | -0.37 | 0.11 | 0.53 | -0.20 | -0.30 |
| Departure Headway (s) | 4.1 | 4.5 | 5.4 | 4.7 | 4.3 |
| Degree Utilization, x | 0.06 | 0.13 | 0.11 | 0.13 | 0.01 |
| Capacity (veh/h) | 840 | 763 | 645 | 745 | 796 |
| Control Delay (s) | 7.3 | 8.2 | 7.8 | 7.2 | 7.3 |
| Approach Delay (s) | 7.3 | 8.2 | 7.4 | | 7.3 |
| Approach LOS | A | A | A | | A |

| Intersection Summary | | | | |
|-----------------------------------|--|-------|----------------------|---|
| Delay | | | 7.6 | |
| Level of Service | | | A | |
| Intersection Capacity Utilization | | 28.6% | ICU Level of Service | A |
| Analysis Period (min) | | 15 | | |

Lanes, Volumes, Timings
 11: Mall Access South (E) & Internal Mall Rd

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 39 | 15 | 8 | 79 | 41 | 21 |
| Future Volume (vph) | 39 | 15 | 8 | 79 | 41 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.962 | | | 0.850 | | |
| Flt Protected | | | | 0.995 | 0.950 | |
| Satd. Flow (prot) | 1561 | 0 | 0 | 1890 | 1504 | 1615 |
| Flt Permitted | | | | 0.995 | 0.950 | |
| Satd. Flow (perm) | 1561 | 0 | 0 | 1890 | 1504 | 1615 |
| Link Speed (k/h) | 20 | | | 20 | 20 | |
| Link Distance (m) | 182.4 | | | 55.5 | 83.9 | |
| Travel Time (s) | 32.8 | | | 10.0 | 15.1 | |
| Confl. Peds. (#/hr) | 21 | | 21 | 5 | | 9 |
| Peak Hour Factor | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| Heavy Vehicles (%) | 21% | 7% | 0% | 0% | 20% | 0% |
| Adj. Flow (vph) | 72 | 28 | 15 | 146 | 76 | 39 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 100 | 0 | 0 | 161 | 76 | 39 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | | 0.0 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | 25 | | 15 |
| Sign Control | Stop | | | Stop | Stop | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 23.4% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis
 11: Mall Access South (E) & Internal Mall Rd

10-20-2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | P | | | 4 | 7 | 7 |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 39 | 15 | 8 | 79 | 41 | 21 |
| Future Volume (vph) | 39 | 15 | 8 | 79 | 41 | 21 |
| Peak Hour Factor | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| Hourly flow rate (vph) | 72 | 28 | 15 | 146 | 76 | 39 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 |
|-----------------------|------|------|------|-------|
| Volume Total (vph) | 100 | 161 | 76 | 39 |
| Volume Left (vph) | 0 | 15 | 76 | 0 |
| Volume Right (vph) | 28 | 0 | 0 | 39 |
| Hadj (s) | 0.12 | 0.02 | 0.84 | -0.70 |
| Departure Headway (s) | 4.5 | 4.3 | 5.9 | 4.4 |
| Degree Utilization, x | 0.13 | 0.19 | 0.13 | 0.05 |
| Capacity (veh/h) | 771 | 796 | 579 | 771 |
| Control Delay (s) | 8.2 | 8.4 | 8.6 | 6.4 |
| Approach Delay (s) | 8.2 | 8.4 | 7.9 | |
| Approach LOS | A | A | A | |

| Intersection Summary | | | |
|-----------------------------------|-------|-----|------------------------|
| Delay | | 8.2 | |
| Level of Service | | A | |
| Intersection Capacity Utilization | 23.4% | | ICU Level of Service A |
| Analysis Period (min) | | 15 | |

Lanes, Volumes, Timings
 12: Mall Access East (S) & Internal Mall Road











10-20-2022



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|--------------|-------|------------------------|-------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 83 | 4 | 3 | 56 | 7 | 25 |
| Future Volume (vph) | 83 | 4 | 3 | 56 | 7 | 25 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | 0.850 | 0.871 | | | |
| Flt Protected | 0.950 | | | | | 0.989 |
| Satd. Flow (prot) | 1805 | 1292 | 1460 | 0 | 0 | 1879 |
| Flt Permitted | 0.950 | | | | | 0.989 |
| Satd. Flow (perm) | 1805 | 1292 | 1460 | 0 | 0 | 1879 |
| Link Speed (k/h) | 20 | | 20 | | | 20 |
| Link Distance (m) | 105.0 | | 76.6 | | | 159.1 |
| Travel Time (s) | 18.9 | | 13.8 | | | 28.6 |
| Confl. Peds. (#/hr) | 7 | | | 2 | 2 | |
| Confl. Bikes (#/hr) | | 1 | | | | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 25% | 0% | 14% | 0% | 0% |
| Adj. Flow (vph) | 91 | 4 | 3 | 62 | 8 | 27 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 91 | 4 | 65 | 0 | 0 | 35 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(m) | 3.6 | | 0.0 | | | 0.0 |
| Link Offset(m) | 0.0 | | 0.0 | | | 0.0 |
| Crosswalk Width(m) | 4.8 | | 4.8 | | | 4.8 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | 15 | | 15 | 25 | |
| Sign Control | Stop | | Stop | | | Stop |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 18.7% | | ICU Level of Service A | | | |
| Analysis Period (min) | 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 12: Mall Access East (S) & Internal Mall Road

10-20-2022

| |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | | |  |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 83 | 4 | 3 | 56 | 7 | 25 |
| Future Volume (vph) | 83 | 4 | 3 | 56 | 7 | 25 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 91 | 4 | 3 | 62 | 8 | 27 |
| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 | | |
| Volume Total (vph) | 91 | 4 | 65 | 35 | | |
| Volume Left (vph) | 91 | 0 | 0 | 8 | | |
| Volume Right (vph) | 0 | 4 | 62 | 0 | | |
| Hadj (s) | 0.50 | -0.27 | -0.35 | 0.05 | | |
| Departure Headway (s) | 5.2 | 4.4 | 3.9 | 4.3 | | |
| Degree Utilization, x | 0.13 | 0.00 | 0.07 | 0.04 | | |
| Capacity (veh/h) | 676 | 785 | 903 | 820 | | |
| Control Delay (s) | 7.8 | 6.3 | 7.1 | 7.5 | | |
| Approach Delay (s) | 7.7 | | 7.1 | 7.5 | | |
| Approach LOS | A | | A | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 7.5 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 18.7% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 13: Internal Mall Road & Mall Access East (N)

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 8 | 5 | 25 | 69 | 4 | 4 |
| Future Volume (vph) | 8 | 5 | 25 | 69 | 4 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.949 | | | 0.932 | | |
| Flt Protected | 0.950 | | | 0.976 | | |
| Satd. Flow (prot) | 1668 | 0 | 1736 | 1900 | 1728 | 0 |
| Flt Permitted | 0.950 | | | 0.976 | | |
| Satd. Flow (perm) | 1668 | 0 | 1736 | 1900 | 1728 | 0 |
| Link Speed (k/h) | 20 | | 20 | | 20 | |
| Link Distance (m) | 158.8 | | 100.3 | | 159.1 | |
| Travel Time (s) | 28.6 | | 18.1 | | 28.6 | |
| Confl. Peds. (#/hr) | | | | | | 17 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Heavy Vehicles (%) | 13% | 0% | 4% | 0% | 0% | 0% |
| Adj. Flow (vph) | 10 | 6 | 32 | 88 | 5 | 5 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 16 | 0 | 32 | 88 | 10 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.6 | | 3.6 | | 3.6 | |
| Link Offset(m) | 0.0 | | 0.0 | | 0.0 | |
| Crosswalk Width(m) | 4.8 | | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | | 15 | |
| Sign Control | Stop | | Stop | | Stop | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 22.4% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis
 13: Internal Mall Road & Mall Access East (N)

10-20-2022

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------|------|-------|-------|----------------------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | P | | P | P | P | |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 8 | 5 | 25 | 69 | 4 | 4 |
| Future Volume (vph) | 8 | 5 | 25 | 69 | 4 | 4 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Hourly flow rate (vph) | 10 | 6 | 32 | 88 | 5 | 5 |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | | |
| Volume Total (vph) | 16 | 32 | 88 | 10 | | |
| Volume Left (vph) | 0 | 32 | 0 | 5 | | |
| Volume Right (vph) | 6 | 0 | 0 | 5 | | |
| Hadj (s) | -0.09 | 0.57 | 0.00 | -0.20 | | |
| Departure Headway (s) | 4.1 | 5.1 | 4.5 | 4.0 | | |
| Degree Utilization, x | 0.02 | 0.05 | 0.11 | 0.01 | | |
| Capacity (veh/h) | 876 | 701 | 782 | 859 | | |
| Control Delay (s) | 7.1 | 7.1 | 6.9 | 7.1 | | |
| Approach Delay (s) | 7.1 | 7.0 | | 7.1 | | |
| Approach LOS | A | A | | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 7.0 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 22.4% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
14: Viscount Rd

10-20-2022

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|----------------------------|-------|-------|------|-------|-------|-------|
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑ | | | ↑ | ↘ | |
| Traffic Volume (vph) | 387 | 0 | 0 | 158 | 0 | 0 |
| Future Volume (vph) | 387 | 0 | 0 | 158 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 1810 | 0 | 0 | 1776 | 1863 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 1810 | 0 | 0 | 1776 | 1863 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (k/h) | 40 | | | 40 | 20 | |
| Link Distance (m) | 218.9 | | | 0.0 | 20.6 | |
| Travel Time (s) | 19.7 | | | 0.0 | 3.7 | |
| Confl. Peds. (#/hr) | | | | | 50 | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.25 |
| Heavy Vehicles (%) | 5% | 2% | 2% | 7% | 2% | 2% |
| Adj. Flow (vph) | 503 | 0 | 0 | 205 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 503 | 0 | 0 | 205 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | | 0.0 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | | 15 | 25 | | 25 | 15 |
| Number of Detectors | 2 | | | 2 | 1 | |
| Detector Template | Thru | | | Thru | Left | |
| Leading Detector (m) | 10.0 | | | 10.0 | 2.0 | |
| Trailing Detector (m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 0.6 | | | 0.6 | 2.0 | |
| Detector 1 Type | Cl+Ex | | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 2 Position(m) | 9.4 | | | 9.4 | | |
| Detector 2 Size(m) | 0.6 | | | 0.6 | | |
| Detector 2 Type | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |

Lanes, Volumes, Timings

14: Viscount Rd

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|-------|-----|-----|-------|-------|-----|
| Detector Phase | 4 | | | 8 | 2 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | | 10.0 | 40.2 | |
| Minimum Split (s) | 14.3 | | | 14.3 | 46.0 | |
| Total Split (s) | 16.0 | | | 16.0 | 46.0 | |
| Total Split (%) | 25.8% | | | 25.8% | 74.2% | |
| Maximum Green (s) | 11.7 | | | 11.7 | 40.2 | |
| Yellow Time (s) | 3.3 | | | 3.3 | 3.3 | |
| All-Red Time (s) | 1.0 | | | 1.0 | 2.5 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | | | 4.3 | 5.8 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 1.0 | |
| Recall Mode | Max | | | Max | None | |
| Walk Time (s) | | | | | 35.0 | |
| Flash Dont Walk (s) | | | | | 5.0 | |
| Pedestrian Calls (#/hr) | | | | | 50 | |
| Act Effect Green (s) | 34.9 | | | 34.9 | | |
| Actuated g/C Ratio | 0.87 | | | 0.87 | | |
| v/c Ratio | 0.32 | | | 0.13 | | |
| Control Delay | 8.8 | | | 7.0 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 8.8 | | | 7.0 | | |
| LOS | A | | | A | | |
| Approach Delay | 8.8 | | | 7.0 | | |
| Approach LOS | A | | | A | | |

Intersection Summary

| | |
|-----------------------------------|------------------|
| Area Type: | Other |
| Cycle Length: | 62 |
| Actuated Cycle Length: | 40.2 |
| Natural Cycle: | 75 |
| Control Type: | Semi Act-Uncoord |
| Maximum v/c Ratio: | 0.32 |
| Intersection Signal Delay: | 8.3 |
| Intersection Capacity Utilization | 24.0% |
| Analysis Period (min) | 15 |
| Intersection LOS: | A |
| ICU Level of Service | A |

Splits and Phases: 14: Viscount Rd



Timings
14: Viscount Rd

10-20-2022

| | → | ← | |
|----------------------|-------|-------|------|
| Lane Group | EBT | WBT | Ø2 |
| Lane Configurations | ↑ | ↑ | |
| Traffic Volume (vph) | 387 | 158 | |
| Future Volume (vph) | 387 | 158 | |
| Turn Type | NA | NA | |
| Protected Phases | 4 | 8 | 2 |
| Permitted Phases | | | |
| Detector Phase | 4 | 8 | |
| Switch Phase | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 40.2 |
| Minimum Split (s) | 14.3 | 14.3 | 46.0 |
| Total Split (s) | 16.0 | 16.0 | 46.0 |
| Total Split (%) | 25.8% | 25.8% | 74% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.0 | 1.0 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | 4.3 | |
| Lead/Lag | | | |
| Lead-Lag Optimize? | | | |
| Recall Mode | Max | Max | None |
| Act Effct Green (s) | 34.9 | 34.9 | |
| Actuated g/C Ratio | 0.87 | 0.87 | |
| v/c Ratio | 0.32 | 0.13 | |
| Control Delay | 8.8 | 7.0 | |
| Queue Delay | 0.0 | 0.0 | |
| Total Delay | 8.8 | 7.0 | |
| LOS | A | A | |
| Approach Delay | 8.8 | 7.0 | |
| Approach LOS | A | A | |

Intersection Summary

| | |
|-----------------------------------------|------------------------|
| Cycle Length: 62 | |
| Actuated Cycle Length: 40.2 | |
| Natural Cycle: 75 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.32 | |
| Intersection Signal Delay: 8.3 | Intersection LOS: A |
| Intersection Capacity Utilization 24.0% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 14: Viscount Rd



Queues

14: Viscount Rd

10-20-2022



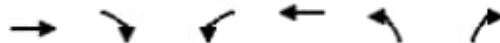
| Lane Group | EBT | WBT |
|------------------------|-------|------|
| Lane Group Flow (vph) | 503 | 205 |
| v/c Ratio | 0.32 | 0.13 |
| Control Delay | 8.8 | 7.0 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 8.8 | 7.0 |
| Queue Length 50th (m) | 0.0 | 0.0 |
| Queue Length 95th (m) | 84.3 | 33.0 |
| Internal Link Dist (m) | 194.9 | 0.1 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 1573 | 1544 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.32 | 0.13 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

14: Viscount Rd

10-20-2022



























| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|-------|------|-------|------|---------------------------|------|
| Lane Configurations | ↑ | | | ↑ | ↔ | |
| Traffic Volume (vph) | 387 | 0 | 0 | 158 | 0 | 0 |
| Future Volume (vph) | 387 | 0 | 0 | 158 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.3 | | | 4.3 | | |
| Lane Util. Factor | 1.00 | | | 1.00 | | |
| Frbp, ped/bikes | 1.00 | | | 1.00 | | |
| Flpb, ped/bikes | 1.00 | | | 1.00 | | |
| Frt | 1.00 | | | 1.00 | | |
| Flt Protected | 1.00 | | | 1.00 | | |
| Satd. Flow (prot) | 1810 | | | 1776 | | |
| Flt Permitted | 1.00 | | | 1.00 | | |
| Satd. Flow (perm) | 1810 | | | 1776 | | |
| Peak-hour factor, PHF | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.25 |
| Adj. Flow (vph) | 503 | 0 | 0 | 205 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 503 | 0 | 0 | 205 | 0 | 0 |
| Confl. Peds. (#/hr) | | | | | 50 | |
| Heavy Vehicles (%) | 5% | 2% | 2% | 7% | 2% | 2% |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 30.5 | | | 30.5 | | |
| Effective Green, g (s) | 30.5 | | | 30.5 | | |
| Actuated g/C Ratio | 0.68 | | | 0.68 | | |
| Clearance Time (s) | 4.3 | | | 4.3 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Lane Grp Cap (vph) | 1232 | | | 1209 | | |
| v/s Ratio Prot | c0.28 | | | 0.12 | | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.41 | | | 0.17 | | |
| Uniform Delay, d1 | 3.2 | | | 2.6 | | |
| Progression Factor | 1.00 | | | 1.00 | | |
| Incremental Delay, d2 | 1.0 | | | 0.3 | | |
| Delay (s) | 4.2 | | | 2.9 | | |
| Level of Service | A | | | A | | |
| Approach Delay (s) | 4.2 | | | 2.9 | 0.0 | |
| Approach LOS | A | | | A | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 3.8 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.36 | | | |
| Actuated Cycle Length (s) | | | 44.8 | | Sum of lost time (s) | 10.1 |
| Intersection Capacity Utilization | | | 24.0% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| c Critical Lane Group | | | | | | |

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

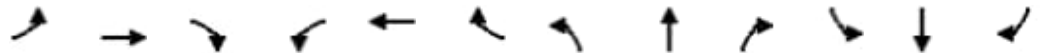
10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 147 | 392 | 99 | 262 | 580 | 423 | 102 | 1092 | 173 | 299 | 1114 | 97 |
| Future Volume (vph) | 147 | 392 | 99 | 262 | 580 | 423 | 102 | 1092 | 173 | 299 | 1114 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | | 0.97 | 0.99 | | 0.98 | 1.00 | | 0.95 | | 1.00 | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.988 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 3539 | 1583 | 1787 | 3610 | 1615 | 1805 | 3510 | 1553 | 1805 | 3494 | 0 |
| Flt Permitted | 0.159 | | | 0.458 | | | 0.145 | | | 0.088 | | |
| Satd. Flow (perm) | 298 | 3539 | 1532 | 852 | 3610 | 1582 | 275 | 3510 | 1481 | 167 | 3494 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 132 | | | 291 | | | 164 | | | 9 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 242.3 | | | 231.0 | | | 353.5 | | | 276.8 | |
| Travel Time (s) | | 17.4 | | | 16.6 | | | 25.5 | | | 19.9 | |
| Confl. Peds. (#/hr) | 6 | | 14 | 14 | | 6 | 12 | | 23 | 23 | | 12 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 2% | 2% | 1% | 0% | 0% | 0% | 1% | 4% | 0% | 2% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 150 | 400 | 101 | 267 | 592 | 432 | 104 | 1114 | 177 | 305 | 1137 | 99 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 150 | 400 | 101 | 267 | 592 | 432 | 104 | 1114 | 177 | 305 | 1236 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.02 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-20-2022

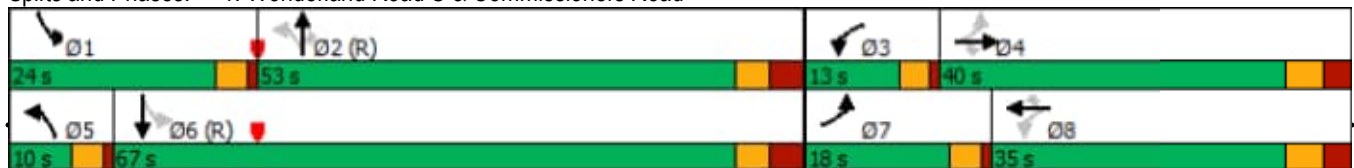


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 | |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 13.0 | 35.0 | 35.0 | 10.0 | 53.0 | 53.0 | 24.0 | 67.0 | |
| Total Split (%) | 13.8% | 30.8% | 30.8% | 10.0% | 26.9% | 26.9% | 7.7% | 40.8% | 40.8% | 18.5% | 51.5% | |
| Maximum Green (s) | 14.0 | 33.4 | 33.4 | 9.0 | 28.4 | 28.4 | 6.0 | 46.3 | 46.3 | 20.0 | 60.3 | |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | |
| Flash Dont Walk (s) | | 20.0 | 20.0 | | 20.0 | 20.0 | | 19.0 | 19.0 | | 19.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | |
| Act Effct Green (s) | 44.6 | 29.9 | 29.9 | 37.8 | 26.2 | 26.2 | 59.5 | 50.4 | 50.4 | 76.5 | 63.3 | |
| Actuated g/C Ratio | 0.34 | 0.23 | 0.23 | 0.29 | 0.20 | 0.20 | 0.46 | 0.39 | 0.39 | 0.59 | 0.49 | |
| v/c Ratio | 0.61 | 0.49 | 0.22 | 0.86 | 0.81 | 0.78 | 0.52 | 0.82 | 0.26 | 0.89 | 0.72 | |
| Control Delay | 39.9 | 45.0 | 3.8 | 62.2 | 59.1 | 26.3 | 27.4 | 29.5 | 2.9 | 60.2 | 30.0 | |
| 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 | 39.9 | 45.0 | 3.8 | 62.2 | 59.1 | 26.3 | 27.4 | 29.5 | 2.9 | 60.2 | 30.0 | |
| LOS | D | D | A | E | E | C | C | C | A | E | C | |
| Approach Delay | | 37.4 | | | 48.7 | | | 26.0 | | | 36.0 | |
| Approach LOS | | D | | | D | | | C | | | D | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 122 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 36.7
 Intersection LOS: D
 Intersection Capacity Utilization 94.2%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Timings

1: Wonderland Road S & Commissioners Road

10-20-2022

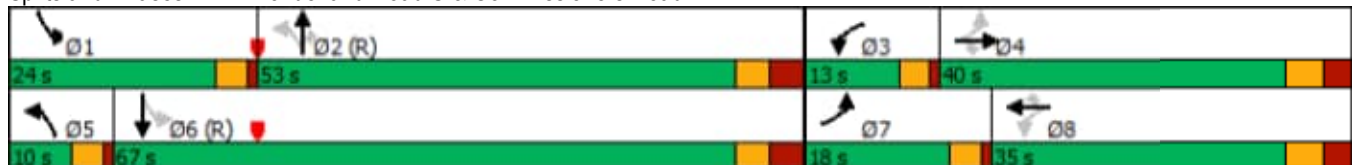


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↗ | ↘ | ↘ | ↗ | ↘ | ↘ | ↗ | ↘ | ↘ | ↗ |
| Traffic Volume (vph) | 147 | 392 | 99 | 262 | 580 | 423 | 102 | 1092 | 173 | 299 | 1114 |
| Future Volume (vph) | 147 | 392 | 99 | 262 | 580 | 423 | 102 | 1092 | 173 | 299 | 1114 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 13.0 | 35.0 | 35.0 | 10.0 | 53.0 | 53.0 | 24.0 | 67.0 |
| Total Split (%) | 13.8% | 30.8% | 30.8% | 10.0% | 26.9% | 26.9% | 7.7% | 40.8% | 40.8% | 18.5% | 51.5% |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effct Green (s) | 44.6 | 29.9 | 29.9 | 37.8 | 26.2 | 26.2 | 59.5 | 50.4 | 50.4 | 76.5 | 63.3 |
| Actuated g/C Ratio | 0.34 | 0.23 | 0.23 | 0.29 | 0.20 | 0.20 | 0.46 | 0.39 | 0.39 | 0.59 | 0.49 |
| v/c Ratio | 0.61 | 0.49 | 0.22 | 0.86 | 0.81 | 0.78 | 0.52 | 0.82 | 0.26 | 0.89 | 0.72 |
| Control Delay | 39.9 | 45.0 | 3.8 | 62.2 | 59.1 | 26.3 | 27.4 | 29.5 | 2.9 | 60.2 | 30.0 |
| 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 | 39.9 | 45.0 | 3.8 | 62.2 | 59.1 | 26.3 | 27.4 | 29.5 | 2.9 | 60.2 | 30.0 |
| LOS | D | D | A | E | E | C | C | C | A | E | C |
| Approach Delay | | 37.4 | | | 48.7 | | | 26.0 | | | 36.0 |
| Approach LOS | | D | | | D | | | C | | | D |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 122 (94%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 36.7
 Intersection LOS: D
 Intersection Capacity Utilization 94.2%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Queues

1: Wonderland Road S & Commissioners Road

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|------|-------|------|-------|-------|-------|------|--------|------|--------|-------|
| Lane Group Flow (vph) | 150 | 400 | 101 | 267 | 592 | 432 | 104 | 1114 | 177 | 305 | 1236 |
| v/c Ratio | 0.61 | 0.49 | 0.22 | 0.86 | 0.81 | 0.78 | 0.52 | 0.82 | 0.26 | 0.89 | 0.72 |
| Control Delay | 39.9 | 45.0 | 3.8 | 62.2 | 59.1 | 26.3 | 27.4 | 29.5 | 2.9 | 60.2 | 30.0 |
| 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 | 39.9 | 45.0 | 3.8 | 62.2 | 59.1 | 26.3 | 27.4 | 29.5 | 2.9 | 60.2 | 30.0 |
| Queue Length 50th (m) | 27.5 | 48.0 | 0.0 | 52.6 | 79.5 | 36.1 | 6.7 | 119.1 | 8.0 | 60.8 | 141.3 |
| Queue Length 95th (m) | 44.0 | 64.0 | 7.7 | #90.6 | 101.1 | 78.8 | 20.0 | #170.4 | 7.3 | #113.8 | 170.0 |
| Internal Link Dist (m) | | 218.3 | | | 207.0 | | | 329.5 | | | 252.8 |
| Turn Bay Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | |
| Base Capacity (vph) | 264 | 909 | 491 | 312 | 788 | 573 | 201 | 1359 | 674 | 353 | 1705 |
| 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 | 0.57 | 0.44 | 0.21 | 0.86 | 0.75 | 0.75 | 0.52 | 0.82 | 0.26 | 0.86 | 0.72 |

























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Wonderland Road S & Commissioners Road

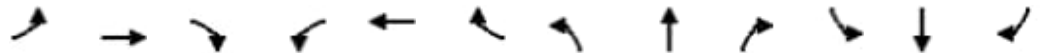
10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  | |
| Traffic Volume (vph) | 147 | 392 | 99 | 262 | 580 | 423 | 102 | 1092 | 173 | 299 | 1114 | 97 | |
| Future Volume (vph) | 147 | 392 | 99 | 262 | 580 | 423 | 102 | 1092 | 173 | 299 | 1114 | 97 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | |
| Satd. Flow (prot) | 1787 | 3539 | 1531 | 1779 | 3610 | 1582 | 1805 | 3510 | 1481 | 1805 | 3494 | | |
| Flt Permitted | 0.16 | 1.00 | 1.00 | 0.46 | 1.00 | 1.00 | 0.14 | 1.00 | 1.00 | 0.09 | 1.00 | | |
| Satd. Flow (perm) | 298 | 3539 | 1531 | 858 | 3610 | 1582 | 275 | 3510 | 1481 | 167 | 3494 | | |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | |
| Adj. Flow (vph) | 150 | 400 | 101 | 267 | 592 | 432 | 104 | 1114 | 177 | 305 | 1137 | 99 | |
| RTOR Reduction (vph) | 0 | 0 | 78 | 0 | 0 | 232 | 0 | 0 | 100 | 0 | 5 | 0 | |
| Lane Group Flow (vph) | 150 | 400 | 23 | 267 | 592 | 200 | 104 | 1114 | 77 | 305 | 1231 | 0 | |
| Confl. Peds. (#/hr) | 6 | | 14 | 14 | | 6 | 12 | | 23 | 23 | | 12 | |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | | |
| Heavy Vehicles (%) | 1% | 2% | 2% | 1% | 0% | 0% | 0% | 1% | 4% | 0% | 2% | 0% | |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | | |
| Actuated Green, G (s) | 42.6 | 29.9 | 29.9 | 35.2 | 26.2 | 26.2 | 56.9 | 50.4 | 50.4 | 73.8 | 63.3 | | |
| Effective Green, g (s) | 42.6 | 29.9 | 29.9 | 35.2 | 26.2 | 26.2 | 56.9 | 50.4 | 50.4 | 73.8 | 63.3 | | |
| Actuated g/C Ratio | 0.33 | 0.23 | 0.23 | 0.27 | 0.20 | 0.20 | 0.44 | 0.39 | 0.39 | 0.57 | 0.49 | | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | |
| Lane Grp Cap (vph) | 243 | 813 | 352 | 296 | 727 | 318 | 196 | 1360 | 574 | 339 | 1701 | | |
| v/s Ratio Prot | c0.06 | 0.11 | | c0.06 | 0.16 | | 0.03 | 0.32 | | c0.13 | 0.35 | | |
| v/s Ratio Perm | 0.14 | | 0.02 | c0.18 | | 0.13 | 0.20 | | 0.05 | c0.38 | | | |
| v/c Ratio | 0.62 | 0.49 | 0.07 | 0.90 | 0.81 | 0.63 | 0.53 | 0.82 | 0.13 | 0.90 | 0.72 | | |
| Uniform Delay, d1 | 33.7 | 43.5 | 39.1 | 43.6 | 49.6 | 47.4 | 23.5 | 35.7 | 25.7 | 37.2 | 26.4 | | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.26 | 0.65 | 0.38 | 1.00 | 1.00 | | |
| Incremental Delay, d2 | 4.6 | 0.5 | 0.1 | 28.5 | 7.0 | 3.8 | 2.5 | 5.1 | 0.4 | 25.2 | 2.7 | | |
| Delay (s) | 38.4 | 43.9 | 39.2 | 72.2 | 56.6 | 51.3 | 32.1 | 28.3 | 10.2 | 62.4 | 29.1 | | |
| Level of Service | D | D | D | E | E | D | C | C | B | E | C | | |
| Approach Delay (s) | | 41.9 | | | 58.0 | | | 26.3 | | | 35.7 | | |
| Approach LOS | | D | | | E | | | C | | | D | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 39.7 | | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.90 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | | | | | | | | | Sum of lost time (s) | 21.3 |
| Intersection Capacity Utilization | | | 94.2% | | | | | | | | | ICU Level of Service | F |
| Analysis Period (min) | | | 15 | | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
2: Wonderland Road S & Village Green Ave

10-20-2022

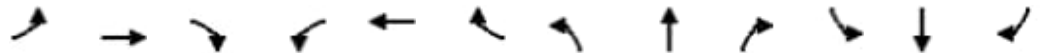


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1314 | 67 | 33 | 1429 | 35 |
| Future Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1314 | 67 | 33 | 1429 | 35 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (m) | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Storage Length (m) | 30.0 | | 0.0 | 20.0 | | 0.0 | 35.0 | | 0.0 | 28.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | 0.99 | | 0.99 | 0.98 | | | 1.00 | | | 1.00 | |
| Frt | | 0.923 | | | 0.899 | | | 0.993 | | | 0.996 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1685 | 1691 | 0 | 1620 | 1627 | 0 | 1685 | 3497 | 0 | 1685 | 3388 | 0 |
| Flt Permitted | 0.717 | | | 0.732 | | | 0.151 | | | 0.168 | | |
| Satd. Flow (perm) | 1258 | 1691 | 0 | 1237 | 1627 | 0 | 268 | 3497 | 0 | 298 | 3388 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 20 | | | 41 | | | 9 | | | 4 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 279.4 | | | 195.9 | | | 119.4 | | | 353.5 | |
| Travel Time (s) | | 20.1 | | | 14.1 | | | 8.6 | | | 25.5 | |
| Confl. Peds. (#/hr) | 8 | | 7 | 7 | | 8 | 19 | | 16 | 16 | | 19 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 5% | 4% | 0% | 5% | 0% | 2% | 4% | 0% | 4% | 3% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| Adj. Flow (vph) | 18 | 19 | 20 | 48 | 20 | 41 | 30 | 1369 | 70 | 34 | 1489 | 36 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 18 | 39 | 0 | 48 | 61 | 0 | 30 | 1439 | 0 | 34 | 1525 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.0 | | | 3.0 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.09 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.02 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings

2: Wonderland Road S & Village Green Ave

10-20-2022

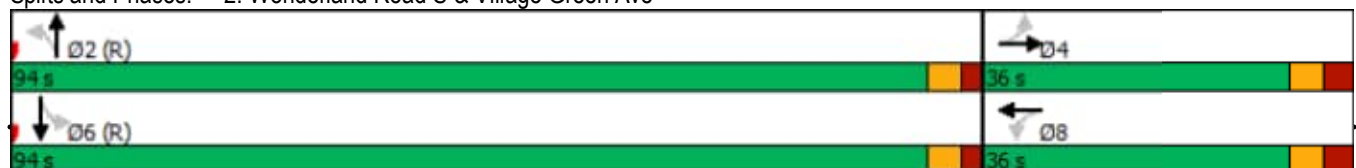


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 34.6 | 34.6 | | 34.6 | 34.6 | | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (s) | 36.0 | 36.0 | | 36.0 | 36.0 | | 94.0 | 94.0 | | 94.0 | 94.0 | |
| Total Split (%) | 27.7% | 27.7% | | 27.7% | 27.7% | | 72.3% | 72.3% | | 72.3% | 72.3% | |
| Maximum Green (s) | 29.7 | 29.7 | | 29.7 | 29.7 | | 88.6 | 88.6 | | 88.6 | 88.6 | |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 2.1 | 2.1 | | 2.1 | 2.1 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 21.0 | 21.0 | | 21.0 | 21.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 10.7 | 10.7 | | 10.7 | 10.7 | | 111.3 | 111.3 | | 111.3 | 111.3 | |
| Actuated g/C Ratio | 0.08 | 0.08 | | 0.08 | 0.08 | | 0.86 | 0.86 | | 0.86 | 0.86 | |
| v/c Ratio | 0.17 | 0.25 | | 0.48 | 0.36 | | 0.13 | 0.48 | | 0.13 | 0.53 | |
| Control Delay | 57.6 | 35.7 | | 71.3 | 29.6 | | 3.2 | 4.7 | | 2.5 | 2.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 57.6 | 35.7 | | 71.3 | 29.6 | | 3.2 | 4.7 | | 2.5 | 2.1 | |
| LOS | E | D | | E | C | | A | A | | A | A | |
| Approach Delay | | 42.7 | | | 48.0 | | | 4.7 | | | 2.2 | |
| Approach LOS | | D | | | D | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 5.6
 Intersection Capacity Utilization 62.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

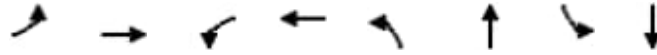
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Timings

2: Wonderland Road S & Village Green Ave

10-20-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↶ | ↷ | ↶ | ↷ | ↶ | ↷ | ↶ | ↷ |
| Traffic Volume (vph) | 17 | 18 | 46 | 19 | 29 | 1314 | 33 | 1429 |
| Future Volume (vph) | 17 | 18 | 46 | 19 | 29 | 1314 | 33 | 1429 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA |
| Protected Phases | | 4 | | 8 | | 2 | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 34.6 | 34.6 | 34.6 | 34.6 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 94.0 | 94.0 | 94.0 | 94.0 |
| Total Split (%) | 27.7% | 27.7% | 27.7% | 27.7% | 72.3% | 72.3% | 72.3% | 72.3% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.1 | 2.1 | 2.1 | 2.1 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 5.4 | 5.4 | 5.4 | 5.4 |
| Lead/Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| Act Effect Green (s) | 10.7 | 10.7 | 10.7 | 10.7 | 111.3 | 111.3 | 111.3 | 111.3 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.08 | 0.08 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.17 | 0.25 | 0.48 | 0.36 | 0.13 | 0.48 | 0.13 | 0.53 |
| Control Delay | 57.6 | 35.7 | 71.3 | 29.6 | 3.2 | 4.7 | 2.5 | 2.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.6 | 35.7 | 71.3 | 29.6 | 3.2 | 4.7 | 2.5 | 2.1 |
| LOS | E | D | E | C | A | A | A | A |
| Approach Delay | | 42.7 | | 48.0 | | 4.7 | | 2.2 |
| Approach LOS | | D | | D | | A | | A |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 5.6
 Intersection Capacity Utilization 62.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

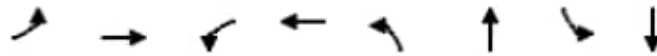
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Queues

2: Wonderland Road S & Village Green Ave

10-20-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|------|-------|------|-------|------|-------|------|-------|
| Lane Group Flow (vph) | 18 | 39 | 48 | 61 | 30 | 1439 | 34 | 1525 |
| v/c Ratio | 0.17 | 0.25 | 0.48 | 0.36 | 0.13 | 0.48 | 0.13 | 0.53 |
| Control Delay | 57.6 | 35.7 | 71.3 | 29.6 | 3.2 | 4.7 | 2.5 | 2.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 57.6 | 35.7 | 71.3 | 29.6 | 3.2 | 4.7 | 2.5 | 2.1 |
| Queue Length 50th (m) | 4.6 | 4.8 | 12.6 | 5.1 | 1.4 | 86.3 | 0.8 | 32.2 |
| Queue Length 95th (m) | 12.6 | 16.1 | 25.4 | 19.0 | m1.9 | 129.2 | m1.7 | 34.6 |
| Internal Link Dist (m) | | 255.4 | | 171.9 | | 95.4 | | 329.5 |
| Turn Bay Length (m) | 30.0 | | 20.0 | | 35.0 | | 28.0 | |
| Base Capacity (vph) | 287 | 401 | 282 | 403 | 229 | 2996 | 255 | 2902 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.06 | 0.10 | 0.17 | 0.15 | 0.13 | 0.48 | 0.13 | 0.53 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Wonderland Road S & Village Green Ave

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|-------|------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | |
| Traffic Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1314 | 67 | 33 | 1429 | 35 |
| Future Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1314 | 67 | 33 | 1429 | 35 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Total Lost time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 0.92 | | 1.00 | 0.90 | | 1.00 | 0.99 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1667 | 1691 | | 1605 | 1627 | | 1675 | 3496 | | 1674 | 3390 | |
| Flt Permitted | 0.72 | 1.00 | | 0.73 | 1.00 | | 0.15 | 1.00 | | 0.17 | 1.00 | |
| Satd. Flow (perm) | 1259 | 1691 | | 1236 | 1627 | | 267 | 3496 | | 296 | 3390 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 18 | 19 | 20 | 48 | 20 | 41 | 30 | 1369 | 70 | 34 | 1489 | 36 |
| RTOR Reduction (vph) | 0 | 19 | 0 | 0 | 38 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 18 | 20 | 0 | 48 | 23 | 0 | 30 | 1438 | 0 | 34 | 1524 | 0 |
| Confl. Peds. (#/hr) | 8 | | 7 | 7 | | 8 | 19 | | 16 | 16 | | 19 |
| Heavy Vehicles (%) | 0% | 0% | 5% | 4% | 0% | 5% | 0% | 2% | 4% | 0% | 4% | 3% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 9.3 | 9.3 | | 9.3 | 9.3 | | 109.0 | 109.0 | | 109.0 | 109.0 | |
| Effective Green, g (s) | 9.3 | 9.3 | | 9.3 | 9.3 | | 109.0 | 109.0 | | 109.0 | 109.0 | |
| Actuated g/C Ratio | 0.07 | 0.07 | | 0.07 | 0.07 | | 0.84 | 0.84 | | 0.84 | 0.84 | |
| Clearance Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 90 | 120 | | 88 | 116 | | 223 | 2931 | | 248 | 2842 | |
| v/s Ratio Prot | | 0.01 | | | 0.01 | | | 0.41 | | | c0.45 | |
| v/s Ratio Perm | 0.01 | | | c0.04 | | | 0.11 | | | 0.11 | | |
| v/c Ratio | 0.20 | 0.17 | | 0.55 | 0.20 | | 0.13 | 0.49 | | 0.14 | 0.54 | |
| Uniform Delay, d1 | 56.8 | 56.7 | | 58.3 | 56.8 | | 1.9 | 2.9 | | 1.9 | 3.1 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.75 | 1.31 | | 0.59 | 0.48 | |
| Incremental Delay, d2 | 1.1 | 0.7 | | 6.7 | 0.8 | | 1.1 | 0.5 | | 0.8 | 0.5 | |
| Delay (s) | 57.9 | 57.4 | | 65.1 | 57.7 | | 2.6 | 4.3 | | 2.0 | 2.0 | |
| Level of Service | E | E | | E | E | | A | A | | A | A | |
| Approach Delay (s) | | 57.6 | | | 60.9 | | | 4.3 | | | 2.0 | |
| Approach LOS | | E | | | E | | | A | | | A | |

Intersection Summary

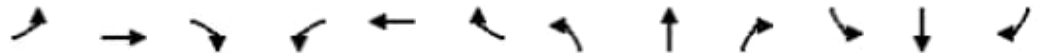
| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 6.0 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.54 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 11.7 |
| Intersection Capacity Utilization | 62.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings

3: Wonderland Road S & Mall Access East (N)/Private Access

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 8 | 0 | 25 | 3 | 0 | 22 | 14 | 1405 | 4 | 24 | 1401 | 65 |
| Future Volume (vph) | 8 | 0 | 25 | 3 | 0 | 22 | 14 | 1405 | 4 | 24 | 1401 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 50.0 | | 0.0 | 30.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.881 | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.994 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 0 | 1442 | 0 | 1664 | 0 | 1583 | 3539 | 0 | 1805 | 3471 | 1568 |
| Flt Permitted | 0.950 | | | | 0.994 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 0 | 1442 | 0 | 1664 | 0 | 1583 | 3539 | 0 | 1805 | 3471 | 1568 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | 50 | |
| Link Distance (m) | | 100.3 | | | 66.2 | | | 161.3 | | | 119.4 | |
| Travel Time (s) | | 18.1 | | | 11.9 | | | 11.6 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 14 | | 11 | 11 | | 14 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 12% | 0% | 0% | 0% | 14% | 2% | 0% | 0% | 4% | 3% |
| Adj. Flow (vph) | 8 | 0 | 26 | 3 | 0 | 23 | 14 | 1448 | 4 | 25 | 1444 | 67 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 8 | 0 | 26 | 0 | 26 | 0 | 14 | 1452 | 0 | 25 | 1444 | 67 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | |
|-----------------------------------|------------------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 55.4% |
| | ICU Level of Service B |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

3: Wonderland Road S & Mall Access East (N)/Private Access

10-20-2022

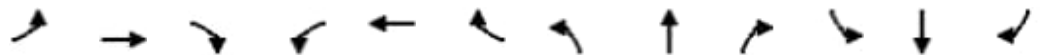


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|------|----------------------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 8 | 0 | 25 | 3 | 0 | 22 | 14 | 1405 | 4 | 24 | 1401 | 65 |
| Future Volume (Veh/h) | 8 | 0 | 25 | 3 | 0 | 22 | 14 | 1405 | 4 | 24 | 1401 | 65 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 8 | 0 | 26 | 3 | 0 | 23 | 14 | 1448 | 4 | 25 | 1444 | 67 |
| Pedestrians | 14 | | | 11 | | | | | | | | |
| Lane Width (m) | 3.6 | | | 3.6 | | | | | | | | |
| Walking Speed (m/s) | 1.2 | | | 1.2 | | | | | | | | |
| Percent Blockage | 1 | | | 1 | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | 161 | | | 119 | | |
| pX, platoon unblocked | 0.91 | 0.91 | 0.87 | 0.91 | 0.91 | 0.85 | 0.87 | | | | 0.85 | |
| vC, conflicting volume | 2283 | 2999 | 736 | 2287 | 3064 | 737 | 1525 | | | | 1463 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1568 | 2353 | 395 | 1573 | 2424 | 329 | 1303 | | | | 1186 | |
| tC, single (s) | 7.5 | 6.5 | 7.1 | 7.5 | 6.5 | 6.9 | 4.4 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 2.3 | | | | 2.2 | |
| p0 queue free % | 87 | 100 | 95 | 95 | 100 | 96 | 97 | | | | 95 | |
| cM capacity (veh/h) | 61 | 30 | 496 | 60 | 27 | 565 | 402 | | | | 500 | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | SB 4 | | |
| Volume Total | 8 | 26 | 26 | 14 | 965 | 487 | 25 | 722 | 722 | 67 | | |
| Volume Left | 8 | 0 | 3 | 14 | 0 | 0 | 25 | 0 | 0 | 0 | | |
| Volume Right | 0 | 26 | 23 | 0 | 0 | 4 | 0 | 0 | 0 | 67 | | |
| cSH | 61 | 496 | 286 | 402 | 1700 | 1700 | 500 | 1700 | 1700 | 1700 | | |
| Volume to Capacity | 0.13 | 0.05 | 0.09 | 0.03 | 0.57 | 0.29 | 0.05 | 0.42 | 0.42 | 0.04 | | |
| Queue Length 95th (m) | 3.4 | 1.3 | 2.4 | 0.9 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 | | |
| Control Delay (s) | 72.8 | 12.7 | 18.8 | 14.3 | 0.0 | 0.0 | 12.6 | 0.0 | 0.0 | 0.0 | | |
| Lane LOS | F | B | C | B | | | | B | | | | |
| Approach Delay (s) | 26.8 | 18.8 | | 0.1 | | | | 0.2 | | | | |
| Approach LOS | D | C | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 0.6 | | | | | | | | | | | |
| Intersection Capacity Utilization | 55.4% | | ICU Level of Service | | | | | B | | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022

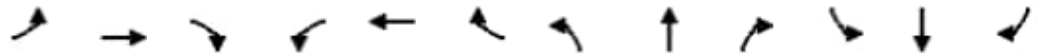


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↗ | | ↔ | | ↗ | ↕ | | ↗ | ↕ | ↗ |
| Traffic Volume (vph) | 114 | 0 | 42 | 4 | 0 | 4 | 28 | 1317 | 13 | 13 | 1396 | 50 |
| Future Volume (vph) | 114 | 0 | 42 | 4 | 0 | 4 | 28 | 1317 | 13 | 13 | 1396 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 35.0 | | 0.0 | 40.0 | | 35.0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | 0.99 | 0.97 | | 0.98 | | | 1.00 | | | | 0.97 |
| Frt | | | 0.850 | | 0.932 | | | 0.998 | | | | 0.850 |
| Flt Protected | | 0.950 | | | 0.976 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1641 | 1615 | 0 | 1706 | 0 | 1805 | 3565 | 0 | 1805 | 3471 | 1526 |
| Flt Permitted | | 0.752 | | | 0.866 | | 0.152 | | | 0.166 | | |
| Satd. Flow (perm) | 0 | 1281 | 1572 | 0 | 1505 | 0 | 289 | 3565 | 0 | 315 | 3471 | 1481 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 44 | | 23 | | | 2 | | | | 31 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | | 50 |
| Link Distance (m) | | 105.0 | | | 57.0 | | | 158.8 | | | | 161.3 |
| Travel Time (s) | | 18.9 | | | 10.3 | | | 11.4 | | | | 11.6 |
| Confl. Peds. (#/hr) | 8 | | 10 | 10 | | 8 | 12 | | 14 | 14 | | 12 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 10% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 4% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Adj. Flow (vph) | 119 | 0 | 44 | 4 | 0 | 4 | 29 | 1372 | 14 | 14 | 1454 | 52 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 119 | 44 | 0 | 8 | 0 | 29 | 1386 | 0 | 14 | 1454 | 52 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.05 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | | 28.7 | 28.7 | | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | | 91.0 | 91.0 | | 91.0 | 91.0 | 91.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 30.0% | | 70.0% | 70.0% | | 70.0% | 70.0% | 70.0% |
| Maximum Green (s) | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | | 85.3 | 85.3 | | 85.3 | 85.3 | 85.3 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 19.0 | 19.0 | 19.0 | 16.0 | 16.0 | | 16.0 | 16.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | | 17.4 | 17.4 | | 17.4 | | 100.2 | 100.2 | | 100.2 | 100.2 | 100.2 |
| Actuated g/C Ratio | | 0.13 | 0.13 | | 0.13 | | 0.77 | 0.77 | | 0.77 | 0.77 | 0.77 |
| v/c Ratio | | 0.70 | 0.18 | | 0.04 | | 0.13 | 0.50 | | 0.06 | 0.54 | 0.05 |
| Control Delay | | 73.7 | 14.3 | | 3.6 | | 3.1 | 2.7 | | 2.7 | 5.0 | 0.5 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 73.7 | 14.3 | | 3.6 | | 3.1 | 2.7 | | 2.7 | 5.0 | 0.5 |
| LOS | | E | B | | A | | A | A | | A | A | A |
| Approach Delay | | 57.6 | | | 3.6 | | | 2.7 | | | 4.9 | |
| Approach LOS | | E | | | A | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 40 (31%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 6.7
 Intersection LOS: A
 Intersection Capacity Utilization 73.8%
 ICU Level of Service D
 Analysis Period (min) 15

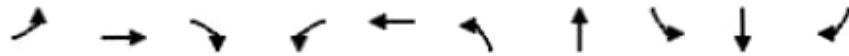
Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022



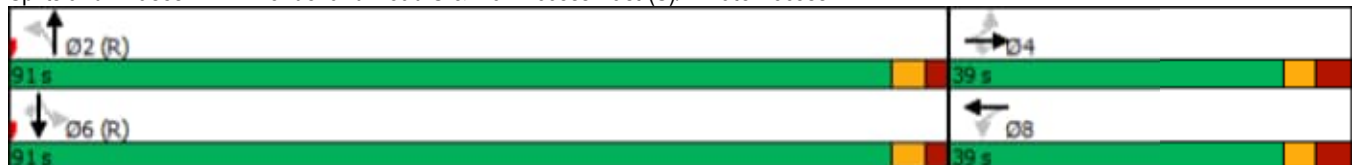
| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↔ | | ↔ | ↔ | ↔ | ↔ | ↔ | ↔ |
| Traffic Volume (vph) | 114 | 0 | 42 | 4 | 0 | 28 | 1317 | 13 | 1396 | 50 |
| Future Volume (vph) | 114 | 0 | 42 | 4 | 0 | 28 | 1317 | 13 | 1396 | 50 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | 28.7 | 28.7 | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | | 17.4 | 17.4 | | 17.4 | 100.2 | 100.2 | 100.2 | 100.2 | 100.2 |
| Actuated g/C Ratio | | 0.13 | 0.13 | | 0.13 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| v/c Ratio | | 0.70 | 0.18 | | 0.04 | 0.13 | 0.50 | 0.06 | 0.54 | 0.05 |
| Control Delay | | 73.7 | 14.3 | | 3.6 | 3.1 | 2.7 | 2.7 | 5.0 | 0.5 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 73.7 | 14.3 | | 3.6 | 3.1 | 2.7 | 2.7 | 5.0 | 0.5 |
| LOS | | E | B | | A | A | A | A | A | A |
| Approach Delay | | 57.6 | | | 3.6 | | 2.7 | | 4.9 | |
| Approach LOS | | E | | | A | | A | | A | |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 40 (31%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 6.7
 Intersection Capacity Utilization 73.8%
 Analysis Period (min) 15

Intersection LOS: A
 ICU Level of Service D

Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Queues

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022



| Lane Group | EBT | EBR | WBT | NBL | NBT | SBL | SBT | SBR |
|------------------------|------|------|------|------|-------|------|-------|------|
| Lane Group Flow (vph) | 119 | 44 | 8 | 29 | 1386 | 14 | 1454 | 52 |
| v/c Ratio | 0.70 | 0.18 | 0.04 | 0.13 | 0.50 | 0.06 | 0.54 | 0.05 |
| Control Delay | 73.7 | 14.3 | 3.6 | 3.1 | 2.7 | 2.7 | 5.0 | 0.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 73.7 | 14.3 | 3.6 | 3.1 | 2.7 | 2.7 | 5.0 | 0.5 |
| Queue Length 50th (m) | 31.1 | 0.0 | 0.0 | 0.9 | 25.5 | 0.2 | 11.3 | 0.2 |
| Queue Length 95th (m) | 49.8 | 10.7 | 1.3 | m2.1 | 30.5 | m1.0 | 129.6 | m1.0 |
| Internal Link Dist (m) | 81.0 | | 33.0 | | 134.8 | | 137.3 | |
| Turn Bay Length (m) | | | | 35.0 | | 40.0 | | 35.0 |
| Base Capacity (vph) | 318 | 423 | 391 | 222 | 2748 | 242 | 2675 | 1149 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 1 | 0 | 0 | 0 | 0 | 133 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.37 | 0.10 | 0.02 | 0.13 | 0.51 | 0.06 | 0.57 | 0.05 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: Wonderland Road S & Mall Access East (S)/Private Access

10-20-2022

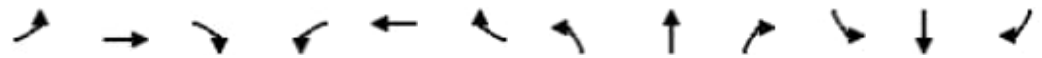


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|-------|-------|------|------|------|-------|-------|------|-------|-------|-------|
| Lane Configurations | | 4 | 7 | | 4 | | 7 | 4 | 7 | 7 | 4 | 7 |
| Traffic Volume (vph) | 114 | 0 | 42 | 4 | 0 | 4 | 28 | 1317 | 13 | 13 | 1396 | 50 |
| Future Volume (vph) | 114 | 0 | 42 | 4 | 0 | 4 | 28 | 1317 | 13 | 13 | 1396 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frb, ped/bikes | | 1.00 | 0.97 | | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | | 0.99 | 1.00 | | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 0.85 | | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | | 0.98 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1619 | 1572 | | 1696 | | 1802 | 3567 | | 1798 | 3471 | 1481 |
| Flt Permitted | | 0.75 | 1.00 | | 0.87 | | 0.15 | 1.00 | | 0.17 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1282 | 1572 | | 1506 | | 288 | 3567 | | 315 | 3471 | 1481 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 119 | 0 | 44 | 4 | 0 | 4 | 29 | 1372 | 14 | 14 | 1454 | 52 |
| RTOR Reduction (vph) | 0 | 0 | 38 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Lane Group Flow (vph) | 0 | 119 | 6 | 0 | 1 | 0 | 29 | 1386 | 0 | 14 | 1454 | 45 |
| Confl. Peds. (#/hr) | 8 | | 10 | 10 | | 8 | 12 | | 14 | 14 | | 12 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Heavy Vehicles (%) | 10% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 4% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Actuated Green, G (s) | | 17.4 | 17.4 | | 17.4 | | 100.2 | 100.2 | | 100.2 | 100.2 | 100.2 |
| Effective Green, g (s) | | 17.4 | 17.4 | | 17.4 | | 100.2 | 100.2 | | 100.2 | 100.2 | 100.2 |
| Actuated g/C Ratio | | 0.13 | 0.13 | | 0.13 | | 0.77 | 0.77 | | 0.77 | 0.77 | 0.77 |
| Clearance Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 171 | 210 | | 201 | | 221 | 2749 | | 242 | 2675 | 1141 |
| v/s Ratio Prot | | | | | | | | 0.39 | | | c0.42 | |
| v/s Ratio Perm | | c0.09 | 0.00 | | 0.00 | | 0.10 | | | 0.04 | | 0.03 |
| v/c Ratio | | 0.70 | 0.03 | | 0.01 | | 0.13 | 0.50 | | 0.06 | 0.54 | 0.04 |
| Uniform Delay, d1 | | 53.8 | 48.9 | | 48.8 | | 3.8 | 5.6 | | 3.6 | 5.9 | 3.5 |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.39 | 0.34 | | 0.46 | 0.65 | 0.19 |
| Incremental Delay, d2 | | 11.6 | 0.1 | | 0.0 | | 1.1 | 0.6 | | 0.4 | 0.7 | 0.1 |
| Delay (s) | | 65.4 | 49.0 | | 48.8 | | 2.6 | 2.5 | | 2.0 | 4.5 | 0.7 |
| Level of Service | | E | D | | D | | A | A | | A | A | A |
| Approach Delay (s) | | 61.0 | | | 48.8 | | | 2.5 | | | 4.4 | |
| Approach LOS | | E | | | D | | | A | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 6.6 | | | | | | | | | A |
| HCM 2000 Volume to Capacity ratio | | | 0.57 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | | | | | | | 12.4 | | |
| Intersection Capacity Utilization | | | 73.8% | | | | | | | | | D |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
5: Wonderland Road S & Viscount Rd

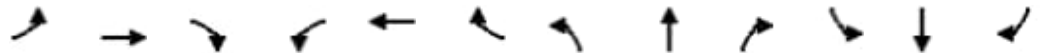
10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 106 | 143 | 157 | 73 | 121 | 67 | 157 | 1141 | 59 | 114 | 1157 | 116 |
| Future Volume (vph) | 106 | 143 | 157 | 73 | 121 | 67 | 157 | 1141 | 59 | 114 | 1157 | 116 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 40.0 | | 95.0 | 30.0 | | 30.0 | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | 0.98 | | 0.96 | 0.98 | 0.99 | | | | 0.92 | 0.99 | | 0.94 |
| Frt | | | 0.850 | | 0.947 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1900 | 1522 | 1805 | 3290 | 0 | 1752 | 3574 | 1568 | 1770 | 3539 | 1553 |
| Flt Permitted | 0.632 | | | 0.435 | | | 0.163 | | | 0.186 | | |
| Satd. Flow (perm) | 1166 | 1900 | 1467 | 812 | 3290 | 0 | 301 | 3574 | 1447 | 344 | 3539 | 1462 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 160 | | 68 | | | | 97 | | | 97 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 157.9 | | | 309.4 | | | 1206.3 | | | 158.8 | |
| Travel Time (s) | | 11.4 | | | 22.3 | | | 86.9 | | | 11.4 | |
| Confl. Peds. (#/hr) | 23 | | 22 | 22 | | 23 | 34 | | 25 | 25 | | 34 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 4% | 0% | 4% | 0% | 3% | 1% | 3% | 2% | 2% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 108 | 146 | 160 | 74 | 123 | 68 | 160 | 1164 | 60 | 116 | 1181 | 118 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 108 | 146 | 160 | 74 | 191 | 0 | 160 | 1164 | 60 | 116 | 1181 | 118 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.03 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings
 5: Wonderland Road S & Viscount Rd

10-20-2022

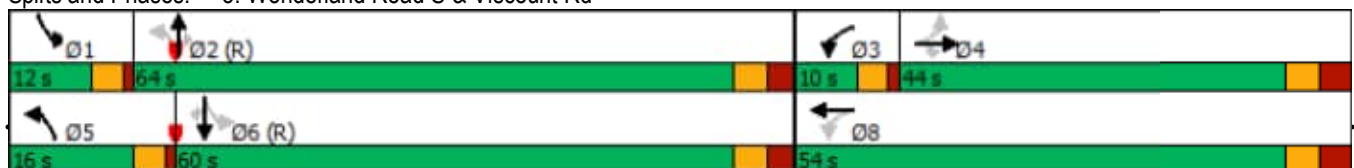


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | | 16.0 | 64.0 | 64.0 | 12.0 | 60.0 | 60.0 |
| Total Split (%) | 33.8% | 33.8% | 33.8% | 7.7% | 41.5% | | 12.3% | 49.2% | 49.2% | 9.2% | 46.2% | 46.2% |
| Maximum Green (s) | 37.5 | 37.5 | 37.5 | 6.0 | 47.5 | | 12.0 | 58.0 | 58.0 | 8.0 | 54.0 | 54.0 |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | None | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | 7.0 | | | 7.0 | 7.0 | | 7.0 | 7.0 |
| Flash Dont Walk (s) | 29.0 | 29.0 | 29.0 | | 29.0 | | | 21.0 | 21.0 | | 21.0 | 21.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | 0 | | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 17.5 | 17.5 | 17.5 | 28.0 | 25.5 | | 92.4 | 79.6 | 79.6 | 87.4 | 77.0 | 77.0 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.13 | 0.22 | 0.20 | | 0.71 | 0.61 | 0.61 | 0.67 | 0.59 | 0.59 |
| v/c Ratio | 0.69 | 0.57 | 0.48 | 0.34 | 0.27 | | 0.47 | 0.53 | 0.07 | 0.36 | 0.56 | 0.13 |
| Control Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | | 17.0 | 18.1 | 3.0 | 10.9 | 14.3 | 2.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | | 17.0 | 18.1 | 3.0 | 10.9 | 14.5 | 2.3 |
| LOS | E | E | B | D | C | | B | B | A | B | B | A |
| Approach Delay | | 47.0 | | | 31.6 | | | 17.3 | | | 13.2 | |
| Approach LOS | | D | | | C | | | B | | | B | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 59 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 20.2
 Intersection LOS: C
 Intersection Capacity Utilization 84.7%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Timings

5: Wonderland Road S & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↑ | ↗ | ↖ | ↕ | ↖ | ↕ | ↗ | ↖ | ↕ | ↗ |
| Traffic Volume (vph) | 106 | 143 | 157 | 73 | 121 | 157 | 1141 | 59 | 114 | 1157 | 116 |
| Future Volume (vph) | 106 | 143 | 157 | 73 | 121 | 157 | 1141 | 59 | 114 | 1157 | 116 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | 16.0 | 64.0 | 64.0 | 12.0 | 60.0 | 60.0 |
| Total Split (%) | 33.8% | 33.8% | 33.8% | 7.7% | 41.5% | 12.3% | 49.2% | 49.2% | 9.2% | 46.2% | 46.2% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 17.5 | 17.5 | 17.5 | 28.0 | 25.5 | 92.4 | 79.6 | 79.6 | 87.4 | 77.0 | 77.0 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.13 | 0.22 | 0.20 | 0.71 | 0.61 | 0.61 | 0.67 | 0.59 | 0.59 |
| v/c Ratio | 0.69 | 0.57 | 0.48 | 0.34 | 0.27 | 0.47 | 0.53 | 0.07 | 0.36 | 0.56 | 0.13 |
| Control Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | 17.0 | 18.1 | 3.0 | 10.9 | 14.3 | 2.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | 17.0 | 18.1 | 3.0 | 10.9 | 14.5 | 2.3 |
| LOS | E | E | B | D | C | B | B | A | B | B | A |
| Approach Delay | | 47.0 | | | 31.6 | | 17.3 | | | 13.2 | |
| Approach LOS | | D | | | C | | B | | | B | |

Intersection Summary

| | |
|-------------------------------------------------------------------------|------------------------|
| Cycle Length: 130 | |
| Actuated Cycle Length: 130 | |
| Offset: 59 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green | |
| Natural Cycle: 100 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 0.69 | |
| Intersection Signal Delay: 20.2 | Intersection LOS: C |
| Intersection Capacity Utilization 84.7% | ICU Level of Service E |
| Analysis Period (min) 15 | |

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Queues

5: Wonderland Road S & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|-------|-------|--------|------|------|-------|------|
| Lane Group Flow (vph) | 108 | 146 | 160 | 74 | 191 | 160 | 1164 | 60 | 116 | 1181 | 118 |
| v/c Ratio | 0.69 | 0.57 | 0.48 | 0.34 | 0.27 | 0.47 | 0.53 | 0.07 | 0.36 | 0.56 | 0.13 |
| Control Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | 17.0 | 18.1 | 3.0 | 10.9 | 14.3 | 2.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 75.5 | 61.1 | 14.8 | 42.9 | 27.2 | 17.0 | 18.1 | 3.0 | 10.9 | 14.5 | 2.3 |
| Queue Length 50th (m) | 29.3 | 39.0 | 0.0 | 16.1 | 14.4 | 14.7 | 87.0 | 0.1 | 4.9 | 71.5 | 0.2 |
| Queue Length 95th (m) | 47.9 | 59.4 | 19.6 | 27.5 | 23.5 | m32.3 | 118.4 | m1.3 | 11.6 | 192.5 | 6.1 |
| Internal Link Dist (m) | | 133.9 | | | 285.4 | | 1182.3 | | | 134.8 | |
| Turn Bay Length (m) | 40.0 | | 95.0 | 30.0 | | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Base Capacity (vph) | 336 | 548 | 537 | 220 | 1245 | 365 | 2187 | 923 | 332 | 2095 | 904 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 231 | 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 | 0.32 | 0.27 | 0.30 | 0.34 | 0.15 | 0.44 | 0.53 | 0.07 | 0.35 | 0.63 | 0.13 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

5: Wonderland Road S & Viscount Rd

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|------|------|-------|------|------|-------|------|------|-------|-------|------|
| Lane Configurations | ↖ | ↑ | ↗ | ↖ | ↕ | | ↖ | ↕ | ↗ | ↖ | ↕ | ↗ |
| Traffic Volume (vph) | 106 | 143 | 157 | 73 | 121 | 67 | 157 | 1141 | 59 | 114 | 1157 | 116 |
| Future Volume (vph) | 106 | 143 | 157 | 73 | 121 | 67 | 157 | 1141 | 59 | 114 | 1157 | 116 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.96 | 1.00 | 0.99 | | 1.00 | 1.00 | 0.92 | 1.00 | 1.00 | 0.94 |
| Flpb, ped/bikes | 0.98 | 1.00 | 1.00 | 0.99 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.95 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1753 | 1900 | 1466 | 1792 | 3288 | | 1751 | 3574 | 1447 | 1768 | 3539 | 1462 |
| Flt Permitted | 0.63 | 1.00 | 1.00 | 0.43 | 1.00 | | 0.16 | 1.00 | 1.00 | 0.19 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1165 | 1900 | 1466 | 820 | 3288 | | 301 | 3574 | 1447 | 346 | 3539 | 1462 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 108 | 146 | 160 | 74 | 123 | 68 | 160 | 1164 | 60 | 116 | 1181 | 118 |
| RTOR Reduction (vph) | 0 | 0 | 138 | 0 | 54 | 0 | 0 | 0 | 24 | 0 | 0 | 40 |
| Lane Group Flow (vph) | 108 | 146 | 22 | 74 | 137 | 0 | 160 | 1164 | 36 | 116 | 1181 | 78 |
| Confl. Peds. (#/hr) | 23 | | 22 | 22 | | 23 | 34 | | 25 | 25 | | 34 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 0% | 4% | 0% | 4% | 0% | 3% | 1% | 3% | 2% | 2% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Actuated Green, G (s) | 17.5 | 17.5 | 17.5 | 26.3 | 26.3 | | 89.8 | 78.7 | 78.7 | 84.6 | 76.1 | 76.1 |
| Effective Green, g (s) | 17.5 | 17.5 | 17.5 | 26.3 | 26.3 | | 89.8 | 78.7 | 78.7 | 84.6 | 76.1 | 76.1 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.13 | 0.20 | 0.20 | | 0.69 | 0.61 | 0.61 | 0.65 | 0.59 | 0.59 |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 156 | 255 | 197 | 201 | 665 | | 331 | 2163 | 875 | 318 | 2071 | 855 |
| v/s Ratio Prot | | 0.08 | | c0.01 | 0.04 | | c0.04 | 0.33 | | 0.02 | c0.33 | |
| v/s Ratio Perm | c0.09 | | 0.01 | 0.06 | | | 0.29 | | 0.03 | 0.21 | | 0.05 |
| v/c Ratio | 0.69 | 0.57 | 0.11 | 0.37 | 0.21 | | 0.48 | 0.54 | 0.04 | 0.36 | 0.57 | 0.09 |
| Uniform Delay, d1 | 53.7 | 52.7 | 49.4 | 43.4 | 43.2 | | 10.6 | 15.0 | 10.4 | 10.1 | 16.8 | 11.8 |
| Progression Factor | 1.02 | 1.01 | 1.46 | 1.00 | 1.00 | | 2.06 | 1.06 | 3.73 | 1.16 | 0.71 | 0.43 |
| Incremental Delay, d2 | 12.4 | 3.1 | 0.2 | 1.1 | 0.2 | | 0.7 | 0.6 | 0.1 | 0.6 | 1.0 | 0.2 |
| Delay (s) | 66.9 | 56.4 | 72.4 | 44.5 | 43.3 | | 22.5 | 16.6 | 38.8 | 12.4 | 13.0 | 5.2 |
| Level of Service | E | E | E | D | D | | C | B | D | B | B | A |
| Approach Delay (s) | | 65.4 | | | 43.6 | | | 18.2 | | | 12.3 | |
| Approach LOS | | E | | | D | | | B | | | B | |

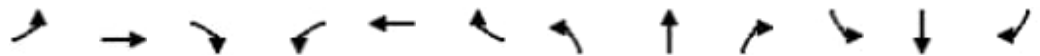
Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 23.4 | HCM 2000 Level of Service | C |
| HCM 2000 Volume to Capacity ratio | 0.57 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 20.5 |
| Intersection Capacity Utilization | 84.7% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings
6: Wonderland Road S & Southdale Road W

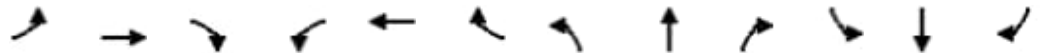
10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Lane Configurations | ↘ | ↗↗ | ↘ | ↘ | ↗↗ | | ↘ | ↗↗ | | ↘ | ↗↗ | |
| Traffic Volume (vph) | 176 | 420 | 85 | 210 | 286 | 381 | 109 | 893 | 110 | 332 | 840 | 50 |
| Future Volume (vph) | 176 | 420 | 85 | 210 | 286 | 381 | 109 | 893 | 110 | 332 | 840 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 35.0 | | 35.0 | 80.0 | | 0.0 | 75.0 | | 0.0 | 35.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | | 0.95 | 0.98 | 0.98 | | 0.99 | 1.00 | | | 1.00 | |
| Frt | | | 0.850 | | 0.914 | | | 0.984 | | | | 0.992 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1736 | 3574 | 1583 | 1805 | 3191 | 0 | 1752 | 3494 | 0 | 1752 | 3428 | 0 |
| Flt Permitted | 0.141 | | | 0.417 | | | 0.304 | | | 0.100 | | |
| Satd. Flow (perm) | 256 | 3574 | 1504 | 776 | 3191 | 0 | 556 | 3494 | 0 | 184 | 3428 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 93 | | 250 | | | 11 | | | | 5 |
| Link Speed (k/h) | | 60 | | | 60 | | | 60 | | | | 60 |
| Link Distance (m) | | 446.9 | | | 385.1 | | | 438.6 | | | | 1206.3 |
| Travel Time (s) | | 26.8 | | | 23.1 | | | 26.3 | | | | 72.4 |
| Confl. Peds. (#/hr) | 18 | | 32 | 32 | | 18 | 36 | | 21 | 21 | | 36 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 4% | 1% | 2% | 0% | 2% | 1% | 3% | 1% | 3% | 3% | 4% | 6% |
| Adj. Flow (vph) | 180 | 429 | 87 | 214 | 292 | 389 | 111 | 911 | 112 | 339 | 857 | 51 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 180 | 429 | 87 | 214 | 681 | 0 | 111 | 1023 | 0 | 339 | 908 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |

Lanes, Volumes, Timings
6: Wonderland Road S & Southdale Road W

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | | 9.0 | 35.1 | | 9.0 | 35.1 | |
| Total Split (s) | 16.0 | 44.0 | 44.0 | 12.0 | 40.0 | | 23.0 | 48.0 | | 26.0 | 51.0 | |
| Total Split (%) | 12.3% | 33.8% | 33.8% | 9.2% | 30.8% | | 17.7% | 36.9% | | 20.0% | 39.2% | |
| Maximum Green (s) | 12.0 | 37.4 | 37.4 | 8.0 | 33.4 | | 19.0 | 41.9 | | 22.0 | 44.9 | |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | | 3.0 | 3.7 | | 3.0 | 3.7 | |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | | 1.0 | 2.4 | | 1.0 | 2.4 | |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | C-Max | | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 25.0 | 25.0 | | 25.0 | | | 22.0 | | | 22.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 42.8 | 28.4 | 28.4 | 35.2 | 24.6 | | 58.8 | 47.5 | | 79.0 | 63.8 | |
| Actuated g/C Ratio | 0.33 | 0.22 | 0.22 | 0.27 | 0.19 | | 0.45 | 0.37 | | 0.61 | 0.49 | |
| v/c Ratio | 0.82 | 0.55 | 0.22 | 0.78 | 0.85 | | 0.33 | 0.80 | | 0.81 | 0.54 | |
| Control Delay | 60.9 | 47.1 | 7.5 | 56.5 | 41.8 | | 16.7 | 43.3 | | 60.3 | 10.2 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 60.9 | 47.1 | 7.5 | 56.5 | 41.8 | | 16.7 | 43.3 | | 60.3 | 10.2 | |
| LOS | E | D | A | E | D | | B | D | | E | B | |
| Approach Delay | | 45.7 | | | 45.3 | | | 40.7 | | | 23.8 | |
| Approach LOS | | D | | | D | | | D | | | C | |

Intersection Summary

| | |
|-----------------------------------|---------------------------------------------------------------|
| Area Type: | Other |
| Cycle Length: | 130 |
| Actuated Cycle Length: | 130 |
| Offset: | 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green |
| Natural Cycle: | 95 |
| Control Type: | Actuated-Coordinated |
| Maximum v/c Ratio: | 0.85 |
| Intersection Signal Delay: | 37.3 |
| Intersection LOS: | D |
| Intersection Capacity Utilization | 97.5% |
| ICU Level of Service | F |
| Analysis Period (min) | 15 |

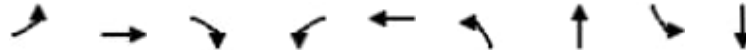
Splits and Phases: 6: Wonderland Road S & Southdale Road W



Timings

6: Wonderland Road S & Southdale Road W

10-20-2022

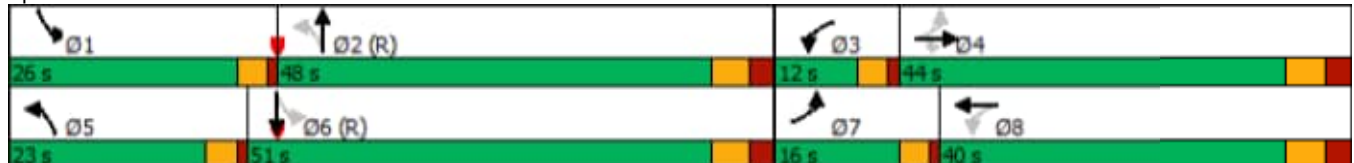


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↑↑ | ↗ | ↘ | ↑↑ | ↘ | ↑↑ | ↘ | ↑↑ |
| Traffic Volume (vph) | 176 | 420 | 85 | 210 | 286 | 109 | 893 | 332 | 840 |
| Future Volume (vph) | 176 | 420 | 85 | 210 | 286 | 109 | 893 | 332 | 840 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | 9.0 | 35.1 | 9.0 | 35.1 |
| Total Split (s) | 16.0 | 44.0 | 44.0 | 12.0 | 40.0 | 23.0 | 48.0 | 26.0 | 51.0 |
| Total Split (%) | 12.3% | 33.8% | 33.8% | 9.2% | 30.8% | 17.7% | 36.9% | 20.0% | 39.2% |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | 3.0 | 3.7 | 3.0 | 3.7 |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 1.0 | 2.4 | 1.0 | 2.4 |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 4.0 | 6.1 | 4.0 | 6.1 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | None | C-Max |
| Act Effct Green (s) | 42.8 | 28.4 | 28.4 | 35.2 | 24.6 | 58.8 | 47.5 | 79.0 | 63.8 |
| Actuated g/C Ratio | 0.33 | 0.22 | 0.22 | 0.27 | 0.19 | 0.45 | 0.37 | 0.61 | 0.49 |
| v/c Ratio | 0.82 | 0.55 | 0.22 | 0.78 | 0.85 | 0.33 | 0.80 | 0.81 | 0.54 |
| Control Delay | 60.9 | 47.1 | 7.5 | 56.5 | 41.8 | 16.7 | 43.3 | 60.3 | 10.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 60.9 | 47.1 | 7.5 | 56.5 | 41.8 | 16.7 | 43.3 | 60.3 | 10.2 |
| LOS | E | D | A | E | D | B | D | E | B |
| Approach Delay | | 45.7 | | | 45.3 | | 40.7 | | 23.8 |
| Approach LOS | | D | | | D | | D | | C |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 37.3
 Intersection LOS: D
 Intersection Capacity Utilization 97.5%
 ICU Level of Service F
 Analysis Period (min) 15

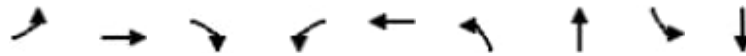
Splits and Phases: 6: Wonderland Road S & Southdale Road W



Queues

6: Wonderland Road S & Southdale Road W

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|------|------|-------|------|--------|--------|--------|
| Lane Group Flow (vph) | 180 | 429 | 87 | 214 | 681 | 111 | 1023 | 339 | 908 |
| v/c Ratio | 0.82 | 0.55 | 0.22 | 0.78 | 0.85 | 0.33 | 0.80 | 0.81 | 0.54 |
| Control Delay | 60.9 | 47.1 | 7.5 | 56.5 | 41.8 | 16.7 | 43.3 | 60.3 | 10.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 60.9 | 47.1 | 7.5 | 56.5 | 41.8 | 16.7 | 43.3 | 60.3 | 10.2 |
| Queue Length 50th (m) | 36.2 | 54.5 | 0.0 | 43.8 | 61.6 | 11.8 | 133.4 | 49.2 | 20.7 |
| Queue Length 95th (m) | #60.6 | 66.0 | 11.7 | 60.0 | 79.1 | 24.0 | #176.8 | #126.7 | 32.2 |
| Internal Link Dist (m) | | 422.9 | | | 361.1 | | 414.6 | | 1182.3 |
| Turn Bay Length (m) | 35.0 | | 35.0 | 80.0 | | 75.0 | | 35.0 | |
| Base Capacity (vph) | 221 | 1028 | 498 | 273 | 1005 | 468 | 1284 | 419 | 1684 |
| 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 | 0.81 | 0.42 | 0.17 | 0.78 | 0.68 | 0.24 | 0.80 | 0.81 | 0.54 |




























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

6: Wonderland Road S & Southdale Road W






















10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   | |  |   | |  |   |   |
| Traffic Volume (vph) | 176 | 420 | 85 | 210 | 286 | 381 | 109 | 893 | 110 | 332 | 840 | 50 |
| Future Volume (vph) | 176 | 420 | 85 | 210 | 286 | 381 | 109 | 893 | 110 | 332 | 840 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.95 | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.91 | | 1.00 | 0.98 | | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1735 | 3574 | 1504 | 1791 | 3192 | | 1746 | 3493 | | 1752 | 3427 | |
| Flt Permitted | 0.14 | 1.00 | 1.00 | 0.42 | 1.00 | | 0.30 | 1.00 | | 0.10 | 1.00 | |
| Satd. Flow (perm) | 257 | 3574 | 1504 | 786 | 3192 | | 559 | 3493 | | 185 | 3427 | |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 180 | 429 | 87 | 214 | 292 | 389 | 111 | 911 | 112 | 339 | 857 | 51 |
| RTOR Reduction (vph) | 0 | 0 | 68 | 0 | 203 | 0 | 0 | 7 | 0 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 180 | 429 | 19 | 214 | 478 | 0 | 111 | 1016 | 0 | 339 | 905 | 0 |
| Confl. Peds. (#/hr) | 18 | | 32 | 32 | | 18 | 36 | | 21 | 21 | | 36 |
| Heavy Vehicles (%) | 4% | 1% | 2% | 0% | 2% | 1% | 3% | 1% | 3% | 3% | 4% | 6% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 40.2 | 28.4 | 28.4 | 32.6 | 24.6 | | 56.6 | 47.5 | | 76.9 | 63.8 | |
| Effective Green, g (s) | 40.2 | 28.4 | 28.4 | 32.6 | 24.6 | | 56.6 | 47.5 | | 76.9 | 63.8 | |
| Actuated g/C Ratio | 0.31 | 0.22 | 0.22 | 0.25 | 0.19 | | 0.44 | 0.37 | | 0.59 | 0.49 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 213 | 780 | 328 | 258 | 604 | | 326 | 1276 | | 415 | 1681 | |
| v/s Ratio Prot | c0.08 | 0.12 | | 0.05 | 0.15 | | 0.02 | 0.29 | | c0.16 | 0.26 | |
| v/s Ratio Perm | c0.18 | | 0.01 | 0.16 | | | 0.12 | | | c0.32 | | |
| v/c Ratio | 0.85 | 0.55 | 0.06 | 0.83 | 0.79 | | 0.34 | 0.80 | | 0.82 | 0.54 | |
| Uniform Delay, d1 | 37.0 | 45.1 | 40.2 | 44.0 | 50.3 | | 22.1 | 36.9 | | 34.1 | 22.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.58 | 0.37 | |
| Incremental Delay, d2 | 25.2 | 0.8 | 0.1 | 19.3 | 7.0 | | 0.6 | 5.2 | | 10.3 | 1.1 | |
| Delay (s) | 62.2 | 46.0 | 40.3 | 63.3 | 57.3 | | 22.8 | 42.1 | | 64.2 | 9.6 | |
| Level of Service | E | D | D | E | E | | C | D | | E | A | |
| Approach Delay (s) | | 49.5 | | | 58.7 | | | 40.2 | | | 24.4 | |
| Approach LOS | | D | | | E | | | D | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 41.1 | HCM 2000 Level of Service | | | | D | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.87 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | Sum of lost time (s) | | | | 20.7 | | | | |
| Intersection Capacity Utilization | | | 97.5% | ICU Level of Service | | | | F | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Lanes, Volumes, Timings

7: Saunders School Access/Mall Access South (E) & Viscount Rd

10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (vph) | 6 | 270 | 10 | 20 | 323 | 61 | 14 | 0 | 36 | 62 | 0 | 24 |
| Future Volume (vph) | 6 | 270 | 10 | 20 | 323 | 61 | 14 | 0 | 36 | 62 | 0 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 30.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.994 | | | | 0.850 | | 0.850 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 1871 | 0 | 1719 | 1863 | 1468 | 1805 | 1583 | 0 | 1805 | 0 | 1553 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 1871 | 0 | 1719 | 1863 | 1468 | 1805 | 1583 | 0 | 1805 | 0 | 1553 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | | 20 |
| Link Distance (m) | | 134.9 | | | 157.9 | | | 74.1 | | | | 83.9 |
| Travel Time (s) | | 12.1 | | | 14.2 | | | 13.3 | | | | 15.1 |
| Confl. Peds. (#/hr) | 15 | | 15 | 15 | | 15 | 11 | | 3 | 3 | | 11 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 5% | 2% | 10% | 0% | 0% | 2% | 0% | 0% | 4% |
| Adj. Flow (vph) | 6 | 287 | 11 | 21 | 344 | 65 | 15 | 0 | 38 | 66 | 0 | 26 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 6 | 298 | 0 | 21 | 344 | 65 | 15 | 38 | 0 | 66 | 0 | 26 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Free | | | Free | | | Stop | | | | Stop |

Intersection Summary

Area Type: Other

Control Type: Unsignalized






















Intersection Capacity Utilization 36.7% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

7: Saunders School Access/Mall Access South (E) & Viscount Rd

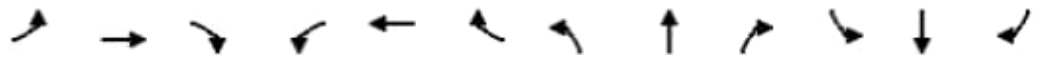
10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (veh/h) | 6 | 270 | 10 | 20 | 323 | 61 | 14 | 0 | 36 | 62 | 0 | 24 |
| Future Volume (Veh/h) | 6 | 270 | 10 | 20 | 323 | 61 | 14 | 0 | 36 | 62 | 0 | 24 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 6 | 287 | 11 | 21 | 344 | 65 | 15 | 0 | 38 | 66 | 0 | 26 |
| Pedestrians | 11 | | | 3 | | | 15 | | | 15 | | |
| Lane Width (m) | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | | |
| Walking Speed (m/s) | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | | |
| Percent Blockage | 1 | | | 0 | | | 1 | | | 1 | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (m) | 135 | | | 158 | | | | | | | | |
| pX, platoon unblocked | 0.97 | | | 1.00 | | | 0.97 | 0.97 | 1.00 | 0.97 | 0.97 | 0.97 |
| vC, conflicting volume | 424 | | | 313 | | | 742 | 786 | 310 | 741 | 726 | 370 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 394 | | | 308 | | | 713 | 757 | 305 | 711 | 696 | 338 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 98 | | | 95 | 100 | 95 | 79 | 100 | 96 |
| cM capacity (veh/h) | 1129 | | | 1215 | | | 309 | 315 | 720 | 307 | 342 | 666 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | NB 2 | SB 1 | SB 2 | | | |
| Volume Total | 6 | 298 | 21 | 344 | 65 | 15 | 38 | 66 | 26 | | | |
| Volume Left | 6 | 0 | 21 | 0 | 0 | 15 | 0 | 66 | 0 | | | |
| Volume Right | 0 | 11 | 0 | 0 | 65 | 0 | 38 | 0 | 26 | | | |
| cSH | 1129 | 1700 | 1215 | 1700 | 1700 | 309 | 720 | 307 | 666 | | | |
| Volume to Capacity | 0.01 | 0.18 | 0.02 | 0.20 | 0.04 | 0.05 | 0.05 | 0.21 | 0.04 | | | |
| Queue Length 95th (m) | 0.1 | 0.0 | 0.4 | 0.0 | 0.0 | 1.2 | 1.3 | 6.4 | 1.0 | | | |
| Control Delay (s) | 8.2 | 0.0 | 8.0 | 0.0 | 0.0 | 17.3 | 10.3 | 19.9 | 10.6 | | | |
| Lane LOS | A | | A | | | C | B | C | B | | | |
| Approach Delay (s) | 0.2 | | 0.4 | | | 12.3 | | 17.3 | | | | |
| Approach LOS | | | | | | B | | C | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 2.8 | | | | | | | | | |
| Intersection Capacity Utilization | | | 36.7% | | ICU Level of Service | | | | | | A | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022

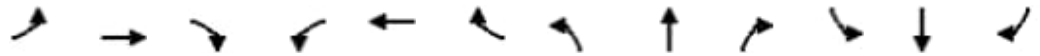


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 43 | 145 | 28 | 32 | 267 | 66 | 52 | 1 | 48 | 92 | 0 | 69 |
| Future Volume (vph) | 43 | 145 | 28 | 32 | 267 | 66 | 52 | 1 | 48 | 92 | 0 | 69 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 50.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | 0.99 | | 0.99 | | 0.99 | 1.00 | 0.97 | | | 0.99 | 0.98 |
| Frt | | 0.976 | | | | 0.850 | | 0.853 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1770 | 1829 | 0 | 1805 | 1881 | 1455 | 1805 | 1565 | 0 | 0 | 1736 | 1568 |
| Flt Permitted | 0.544 | | | 0.645 | | | 0.695 | | | | 0.724 | |
| Satd. Flow (perm) | 1012 | 1829 | 0 | 1214 | 1881 | 1435 | 1318 | 1565 | 0 | 0 | 1304 | 1533 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 17 | | | | 68 | | 49 | | | | 71 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | | 20 |
| Link Distance (m) | | 153.2 | | | 134.9 | | | 64.6 | | | | 87.9 |
| Travel Time (s) | | 13.8 | | | 12.1 | | | 11.6 | | | | 15.8 |
| Confl. Peds. (#/hr) | 2 | | 7 | 7 | | 2 | 2 | | 13 | 13 | | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 1% | 11% | 0% | 0% | 0% | 4% | 0% | 3% |
| Adj. Flow (vph) | 44 | 149 | 29 | 33 | 275 | 68 | 54 | 1 | 49 | 95 | 0 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 44 | 178 | 0 | 33 | 275 | 68 | 54 | 50 | 0 | 0 | 95 | 71 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | Yes | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022

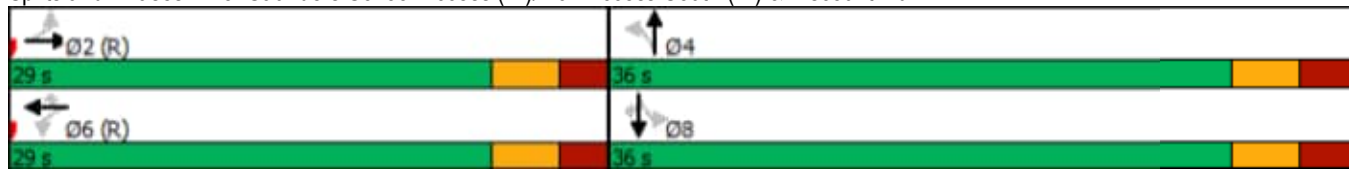


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-----|-------|-------|-------|
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Detector Phase | 2 | 2 | | 6 | 6 | 6 | 4 | 4 | | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | 29.0 | 36.0 | 36.0 | | 36.0 | 36.0 | 36.0 |
| Total Split (%) | 44.6% | 44.6% | | 44.6% | 44.6% | 44.6% | 55.4% | 55.4% | | 55.4% | 55.4% | 55.4% |
| Maximum Green (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | 30.1 | 30.1 | 30.1 |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | | 2.6 | 2.6 | 2.6 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | C-Max | C-Max | | C-Max | C-Max | C-Max | Max | Max | | Max | Max | Max |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 | 19.0 | 19.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | | 30.1 | 30.1 |
| Actuated g/C Ratio | 0.36 | 0.36 | | 0.36 | 0.36 | 0.36 | 0.46 | 0.46 | | | 0.46 | 0.46 |
| v/c Ratio | 0.12 | 0.27 | | 0.08 | 0.41 | 0.12 | 0.09 | 0.07 | | | 0.16 | 0.09 |
| Control Delay | 15.2 | 14.7 | | 13.0 | 16.7 | 3.7 | 10.3 | 3.7 | | | 11.0 | 3.3 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | 15.2 | 14.7 | | 13.0 | 16.7 | 3.7 | 10.3 | 3.7 | | | 11.0 | 3.3 |
| LOS | B | B | | B | B | A | B | A | | | B | A |
| Approach Delay | | 14.8 | | | 14.0 | | | 7.2 | | | 7.7 | |
| Approach LOS | | B | | | B | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 12 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.41
 Intersection Signal Delay: 12.2
 Intersection LOS: B
 Intersection Capacity Utilization 77.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↗ | ↘ | ↗ | ↖ | ↗ | ↗ | ↘ | | ↖ | ↗ |
| Traffic Volume (vph) | 43 | 145 | 32 | 267 | 66 | 52 | 1 | 92 | 0 | 69 |
| Future Volume (vph) | 43 | 145 | 32 | 267 | 66 | 52 | 1 | 92 | 0 | 69 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 2 | | 6 | | | 4 | | 8 | |
| Permitted Phases | 2 | | 6 | | 6 | 4 | | 8 | | 8 |
| Detector Phase | 2 | 2 | 6 | 6 | 6 | 4 | 4 | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 |
| Total Split (%) | 44.6% | 44.6% | 44.6% | 44.6% | 44.6% | 55.4% | 55.4% | 55.4% | 55.4% | 55.4% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| 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) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | C-Max | C-Max | Max | Max | Max | Max | Max |
| Act Effct Green (s) | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | 30.1 | 30.1 |
| Actuated g/C Ratio | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.46 | 0.46 | | 0.46 | 0.46 |
| v/c Ratio | 0.12 | 0.27 | 0.08 | 0.41 | 0.12 | 0.09 | 0.07 | | 0.16 | 0.09 |
| Control Delay | 15.2 | 14.7 | 13.0 | 16.7 | 3.7 | 10.3 | 3.7 | | 11.0 | 3.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 15.2 | 14.7 | 13.0 | 16.7 | 3.7 | 10.3 | 3.7 | | 11.0 | 3.3 |
| LOS | B | B | B | B | A | B | A | | B | A |
| Approach Delay | | 14.8 | | 14.0 | | | 7.2 | | 7.7 | |
| Approach LOS | | B | | B | | | A | | A | |

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 12 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.41

Intersection Signal Delay: 12.2

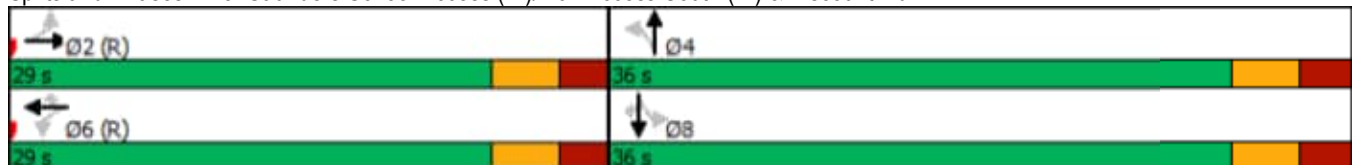
Intersection LOS: B

Intersection Capacity Utilization 77.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Queues

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-20-2022
























| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBT | SBR |
|------------------------|------|-------|------|-------|------|------|------|------|------|
| Lane Group Flow (vph) | 44 | 178 | 33 | 275 | 68 | 54 | 50 | 95 | 71 |
| v/c Ratio | 0.12 | 0.27 | 0.08 | 0.41 | 0.12 | 0.09 | 0.07 | 0.16 | 0.09 |
| Control Delay | 15.2 | 14.7 | 13.0 | 16.7 | 3.7 | 10.3 | 3.7 | 11.0 | 3.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 15.2 | 14.7 | 13.0 | 16.7 | 3.7 | 10.3 | 3.7 | 11.0 | 3.3 |
| Queue Length 50th (m) | 3.7 | 14.0 | 2.9 | 26.8 | 0.2 | 3.6 | 0.1 | 6.6 | 0.0 |
| Queue Length 95th (m) | 10.1 | 27.4 | 7.7 | 45.1 | 7.2 | 9.3 | 5.0 | 14.6 | 5.9 |
| Internal Link Dist (m) | | 129.2 | | 110.9 | | | 40.6 | 63.9 | |
| Turn Bay Length (m) | 30.0 | | 50.0 | | | | | | |
| Base Capacity (vph) | 362 | 666 | 435 | 674 | 558 | 610 | 751 | 603 | 748 |
| 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 | 0.27 | 0.08 | 0.41 | 0.12 | 0.09 | 0.07 | 0.16 | 0.09 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

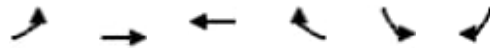
10-20-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | | |  |  |
| Traffic Volume (vph) | 43 | 145 | 28 | 32 | 267 | 66 | 52 | 1 | 48 | 92 | 0 | 69 |
| Future Volume (vph) | 43 | 145 | 28 | 32 | 267 | 66 | 52 | 1 | 48 | 92 | 0 | 69 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Frbp, ped/bikes | 1.00 | 0.99 | | 1.00 | 1.00 | 0.99 | 1.00 | 0.97 | | | 1.00 | 0.98 |
| Flpb, ped/bikes | 1.00 | 1.00 | | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | | | 0.99 | 1.00 |
| Frt | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.85 | | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | | 0.95 | 1.00 |
| Satd. Flow (prot) | 1767 | 1829 | | 1788 | 1881 | 1435 | 1801 | 1565 | | | 1711 | 1533 |
| Flt Permitted | 0.54 | 1.00 | | 0.64 | 1.00 | 1.00 | 0.70 | 1.00 | | | 0.72 | 1.00 |
| Satd. Flow (perm) | 1012 | 1829 | | 1214 | 1881 | 1435 | 1319 | 1565 | | | 1305 | 1533 |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 44 | 149 | 29 | 33 | 275 | 68 | 54 | 1 | 49 | 95 | 0 | 71 |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 0 | 44 | 0 | 26 | 0 | 0 | 0 | 38 |
| Lane Group Flow (vph) | 44 | 167 | 0 | 33 | 275 | 24 | 54 | 24 | 0 | 0 | 95 | 33 |
| Confl. Peds. (#/hr) | 2 | | 7 | 7 | | 2 | 2 | | 13 | 13 | | 2 |
| Heavy Vehicles (%) | 2% | 1% | 0% | 0% | 1% | 11% | 0% | 0% | 0% | 4% | 0% | 3% |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | | 8 |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Actuated Green, G (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | | 30.1 | 30.1 |
| Effective Green, g (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | | 30.1 | 30.1 |
| Actuated g/C Ratio | 0.36 | 0.36 | | 0.36 | 0.36 | 0.36 | 0.46 | 0.46 | | | 0.46 | 0.46 |
| Clearance Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 362 | 655 | | 435 | 674 | 514 | 610 | 724 | | | 604 | 709 |
| v/s Ratio Prot | | 0.09 | | | c0.15 | | | 0.02 | | | | |
| v/s Ratio Perm | 0.04 | | | 0.03 | | 0.02 | 0.04 | | | | c0.07 | 0.02 |
| v/c Ratio | 0.12 | 0.26 | | 0.08 | 0.41 | 0.05 | 0.09 | 0.03 | | | 0.16 | 0.05 |
| Uniform Delay, d1 | 14.0 | 14.7 | | 13.7 | 15.7 | 13.6 | 9.8 | 9.5 | | | 10.1 | 9.6 |
| Progression Factor | 1.00 | 1.00 | | 0.91 | 0.94 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.7 | 0.9 | | 0.3 | 1.8 | 0.2 | 0.3 | 0.1 | | | 0.6 | 0.1 |
| Delay (s) | 14.7 | 15.7 | | 12.8 | 16.5 | 13.7 | 10.1 | 9.6 | | | 10.7 | 9.7 |
| Level of Service | B | B | | B | B | B | B | A | | | B | A |
| Approach Delay (s) | | 15.5 | | | 15.7 | | | 9.8 | | | 10.2 | |
| Approach LOS | | B | | | B | | | A | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 13.9 | | | | | | | | | B |
| HCM 2000 Volume to Capacity ratio | | | 0.27 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 65.0 | | | | | | 11.6 | | | |
| Intersection Capacity Utilization | | | 77.1% | | | | | | | | | D |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
 9: Viscount Rd & Woodcrest Rd

10-20-2022



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations | | 4 | 4 | | 4 | |
| Traffic Volume (vph) | 24 | 176 | 313 | 68 | 37 | 19 |
| Future Volume (vph) | 24 | 176 | 313 | 68 | 37 | 19 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.976 | | 0.953 | |
| Flt Protected | | 0.994 | | | 0.968 | |
| Satd. Flow (prot) | 0 | 1872 | 1824 | 0 | 1690 | 0 |
| Flt Permitted | | 0.994 | | | 0.968 | |
| Satd. Flow (perm) | 0 | 1872 | 1824 | 0 | 1690 | 0 |
| Link Speed (k/h) | | 40 | 40 | | 50 | |
| Link Distance (m) | | 15.9 | 153.2 | | 195.3 | |
| Travel Time (s) | | 1.4 | 13.8 | | 14.1 | |
| Confl. Peds. (#/hr) | 19 | | | 19 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 3% | 5% |
| Adj. Flow (vph) | 25 | 181 | 323 | 70 | 38 | 20 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 206 | 393 | 0 | 58 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(m) | | 3.6 | 3.6 | | 3.6 | |
| Link Offset(m) | | 0.0 | 0.0 | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | Yes | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | | 15 | 25 | 15 |
| Sign Control | | Free | Free | | Stop | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 39.5% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

9: Viscount Rd & Woodcrest Rd

10-20-2022

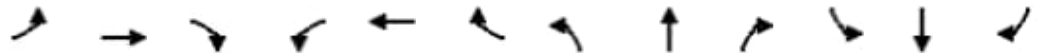


| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|-------------|-------------|-------------|------|----------------------|------|
| Lane Configurations | | 4 | 1 | | 2 | |
| Traffic Volume (veh/h) | 24 | 176 | 313 | 68 | 37 | 19 |
| Future Volume (Veh/h) | 24 | 176 | 313 | 68 | 37 | 19 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 25 | 181 | 323 | 70 | 38 | 20 |
| Pedestrians | | | | | 19 | |
| Lane Width (m) | | | | | 3.6 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 2 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | TWLTL | | | |
| Median storage veh | | | 2 | | | |
| Upstream signal (m) | | 16 | 153 | | | |
| pX, platoon unblocked | 0.91 | | | | 0.93 | 0.91 |
| vC, conflicting volume | 412 | | | | 608 | 377 |
| vC1, stage 1 conf vol | | | | | 377 | |
| vC2, stage 2 conf vol | | | | | 231 | |
| vCu, unblocked vol | 303 | | | | 449 | 264 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 98 | | | | 94 | 97 |
| cM capacity (veh/h) | 1136 | | | | 641 | 686 |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 206 | 393 | 58 | | | |
| Volume Left | 25 | 0 | 38 | | | |
| Volume Right | 0 | 70 | 20 | | | |
| cSH | 1136 | 1700 | 656 | | | |
| Volume to Capacity | 0.02 | 0.23 | 0.09 | | | |
| Queue Length 95th (m) | 0.5 | 0.0 | 2.3 | | | |
| Control Delay (s) | 1.2 | 0.0 | 11.0 | | | |
| Lane LOS | A | | B | | | |
| Approach Delay (s) | 1.2 | 0.0 | 11.0 | | | |
| Approach LOS | | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.3 | | | |
| Intersection Capacity Utilization | | | 39.5% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-20-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|------|-------|------|-------|-------|-------|------|-------|------|-------|-------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Traffic Volume (vph) | 0 | 15 | 85 | 22 | 32 | 6 | 63 | 6 | 41 | 1 | 54 | 20 |
| Future Volume (vph) | 0 | 15 | 85 | 22 | 32 | 6 | 63 | 6 | 41 | 1 | 54 | 20 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | 0.885 | | | | 0.986 | | | | 0.869 | | 0.963 | |
| Flt Protected | | | | | 0.982 | | 0.950 | | | | 0.999 | |
| Satd. Flow (prot) | 0 | 1682 | 0 | 0 | 1672 | 0 | 1805 | 1386 | 0 | 0 | 1828 | 0 |
| Flt Permitted | | | | | 0.982 | | 0.950 | | | | 0.999 | |
| Satd. Flow (perm) | 0 | 1682 | 0 | 0 | 1672 | 0 | 1805 | 1386 | 0 | 0 | 1828 | 0 |
| Link Speed (k/h) | 20 | | | | 20 | | | | 20 | | 20 | |
| Link Distance (m) | 78.9 | | | | 182.4 | | | | 87.9 | | 68.5 | |
| Travel Time (s) | 14.2 | | | | 32.8 | | | | 15.8 | | 12.3 | |
| Confl. Peds. (#/hr) | 9 | | | 6 | 6 | | | 9 | | | 1 | 1 |
| Confl. Bikes (#/hr) | | | | | | | 2 | | | | 1 | |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 23% | 3% | 0% | 0% | 0% | 22% | 0% | 0% | 0% |
| Adj. Flow (vph) | 0 | 17 | 97 | 25 | 36 | 7 | 72 | 7 | 47 | 1 | 61 | 23 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 114 | 0 | 0 | 68 | 0 | 72 | 54 | 0 | 0 | 85 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | 0.0 | | | | 0.0 | | | | 3.6 | | 3.6 | |
| Link Offset(m) | 0.0 | | | | 0.0 | | | | 0.0 | | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | | 4.8 | | | | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | | 15 | 25 | | | 15 | 25 | | | 15 |
| Sign Control | Stop | | | | Stop | | | | Stop | | Stop | |

Intersection Summary

Area Type: Other

Control Type: Unsignalized

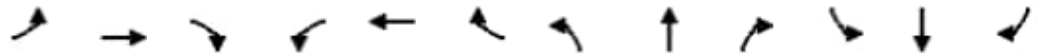
Intersection Capacity Utilization 27.8% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-20-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 0 | 15 | 85 | 22 | 32 | 6 | 63 | 6 | 41 | 1 | 54 | 20 |
| Future Volume (vph) | 0 | 15 | 85 | 22 | 32 | 6 | 63 | 6 | 41 | 1 | 54 | 20 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 0 | 17 | 97 | 25 | 36 | 7 | 72 | 7 | 47 | 1 | 61 | 23 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|-----------------------|-------|------|------|-------|-------|
| Volume Total (vph) | 114 | 68 | 72 | 54 | 85 |
| Volume Left (vph) | 0 | 25 | 72 | 0 | 1 |
| Volume Right (vph) | 97 | 7 | 0 | 47 | 23 |
| Hadj (s) | -0.51 | 0.18 | 0.50 | -0.28 | -0.16 |
| Departure Headway (s) | 4.0 | 4.7 | 5.5 | 4.7 | 4.4 |
| Degree Utilization, x | 0.13 | 0.09 | 0.11 | 0.07 | 0.10 |
| Capacity (veh/h) | 857 | 718 | 630 | 731 | 770 |
| Control Delay (s) | 7.6 | 8.2 | 8.0 | 6.9 | 7.9 |
| Approach Delay (s) | 7.6 | 8.2 | 7.5 | | 7.9 |
| Approach LOS | A | A | A | | A |

| Intersection Summary | |
|-----------------------------------|-------|
| Delay | 7.7 |
| Level of Service | A |
| Intersection Capacity Utilization | 27.8% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

Lanes, Volumes, Timings
 11: Mall Access South (E) & Internal Mall Rd

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|-------|------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 73 | 43 | 43 | 44 | 24 | 43 |
| Future Volume (vph) | 73 | 43 | 43 | 44 | 24 | 43 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.950 | | | | 0.850 | |
| Flt Protected | | | 0.976 | | 0.950 | |
| Satd. Flow (prot) | 1650 | 0 | 0 | 1827 | 1399 | 1615 |
| Flt Permitted | | | 0.976 | | 0.950 | |
| Satd. Flow (perm) | 1650 | 0 | 0 | 1827 | 1399 | 1615 |
| Link Speed (k/h) | 20 | | 20 | | 20 | |
| Link Distance (m) | 182.4 | | 55.5 | | 83.9 | |
| Travel Time (s) | 32.8 | | 10.0 | | 15.1 | |
| Confl. Peds. (#/hr) | 21 | | 21 | | 5 | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 15% | 0% | 3% | 0% | 29% | 0% |
| Adj. Flow (vph) | 76 | 45 | 45 | 46 | 25 | 45 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 121 | 0 | 0 | 91 | 25 | 45 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | 0.0 | | 3.6 | |
| Link Offset(m) | 0.0 | | 0.0 | | 0.0 | |
| Crosswalk Width(m) | 4.8 | | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | | 25 | |
| Sign Control | Stop | | Stop | | Stop | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 23.4% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis
 11: Mall Access South (E) & Internal Mall Rd

10-20-2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | P | | | 4 | 7 | 7 |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 73 | 43 | 43 | 44 | 24 | 43 |
| Future Volume (vph) | 73 | 43 | 43 | 44 | 24 | 43 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 76 | 45 | 45 | 46 | 25 | 45 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 |
|-----------------------|-------|------|------|-------|
| Volume Total (vph) | 121 | 91 | 25 | 45 |
| Volume Left (vph) | 0 | 45 | 25 | 0 |
| Volume Right (vph) | 45 | 0 | 0 | 45 |
| Hadj (s) | -0.06 | 0.12 | 0.99 | -0.70 |
| Departure Headway (s) | 4.1 | 4.3 | 6.0 | 4.3 |
| Degree Utilization, x | 0.14 | 0.11 | 0.04 | 0.05 |
| Capacity (veh/h) | 856 | 814 | 579 | 799 |
| Control Delay (s) | 7.8 | 7.8 | 8.0 | 6.3 |
| Approach Delay (s) | 7.8 | 7.8 | 6.9 | |
| Approach LOS | A | A | A | |

| Intersection Summary | | | |
|-----------------------------------|-------|-----|------------------------|
| Delay | | 7.6 | |
| Level of Service | | A | |
| Intersection Capacity Utilization | 23.4% | | ICU Level of Service A |
| Analysis Period (min) | | 15 | |

Lanes, Volumes, Timings
 12: Mall Access East (S) & Internal Mall Road











10-20-2022



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|--------------|-------|------------------------|-------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 48 | 30 | 27 | 82 | 74 | 40 |
| Future Volume (vph) | 48 | 30 | 27 | 82 | 74 | 40 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | 0.850 | 0.899 | | | |
| Flt Protected | 0.950 | | | | | 0.969 |
| Satd. Flow (prot) | 1805 | 1568 | 1556 | 0 | 0 | 1810 |
| Flt Permitted | 0.950 | | | | | 0.969 |
| Satd. Flow (perm) | 1805 | 1568 | 1556 | 0 | 0 | 1810 |
| Link Speed (k/h) | 20 | | 20 | | | 20 |
| Link Distance (m) | 105.0 | | 76.6 | | | 159.1 |
| Travel Time (s) | 18.9 | | 13.8 | | | 28.6 |
| Confl. Peds. (#/hr) | 36 | | | 3 | 3 | |
| Confl. Bikes (#/hr) | | 1 | | 3 | | |
| Peak Hour Factor | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| Heavy Vehicles (%) | 0% | 3% | 0% | 13% | 1% | 3% |
| Adj. Flow (vph) | 63 | 39 | 36 | 108 | 97 | 53 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 63 | 39 | 144 | 0 | 0 | 150 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(m) | 3.6 | | 0.0 | | | 0.0 |
| Link Offset(m) | 0.0 | | 0.0 | | | 0.0 |
| Crosswalk Width(m) | 4.8 | | 4.8 | | | 4.8 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | 15 | | 15 | 25 | |
| Sign Control | Stop | | Stop | | | Stop |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 22.9% | | ICU Level of Service A | | | |
| Analysis Period (min) | 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 12: Mall Access East (S) & Internal Mall Road

10-20-2022

| |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | | |  |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 48 | 30 | 27 | 82 | 74 | 40 |
| Future Volume (vph) | 48 | 30 | 27 | 82 | 74 | 40 |
| Peak Hour Factor | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| Hourly flow rate (vph) | 63 | 39 | 36 | 108 | 97 | 53 |
| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 | | |
| Volume Total (vph) | 63 | 39 | 144 | 150 | | |
| Volume Left (vph) | 63 | 0 | 0 | 97 | | |
| Volume Right (vph) | 0 | 39 | 108 | 0 | | |
| Hadj (s) | 0.50 | -0.65 | -0.28 | 0.16 | | |
| Departure Headway (s) | 5.7 | 4.5 | 4.1 | 4.5 | | |
| Degree Utilization, x | 0.10 | 0.05 | 0.16 | 0.19 | | |
| Capacity (veh/h) | 599 | 749 | 856 | 774 | | |
| Control Delay (s) | 8.1 | 6.5 | 7.8 | 8.5 | | |
| Approach Delay (s) | 7.5 | | 7.8 | 8.5 | | |
| Approach LOS | A | | A | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 8.0 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 22.9% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 13: Internal Mall Road & Mall Access East (N)

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|-------|------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 20 | 15 | 48 | 31 | 8 | 13 |
| Future Volume (vph) | 20 | 15 | 48 | 31 | 8 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.943 | | | | 0.915 | |
| Flt Protected | | | 0.950 | | 0.982 | |
| Satd. Flow (prot) | 1740 | 0 | 1805 | 1845 | 1707 | 0 |
| Flt Permitted | | | 0.950 | | 0.982 | |
| Satd. Flow (perm) | 1740 | 0 | 1805 | 1845 | 1707 | 0 |
| Link Speed (k/h) | 20 | | 20 | | 20 | |
| Link Distance (m) | 158.8 | | 100.3 | | 159.1 | |
| Travel Time (s) | 28.6 | | 18.1 | | 28.6 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | 7 | |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Heavy Vehicles (%) | 0% | 7% | 0% | 3% | 0% | 0% |
| Adj. Flow (vph) | 26 | 19 | 62 | 40 | 10 | 17 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 45 | 0 | 62 | 40 | 27 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.6 | | 3.6 | | 3.6 | |
| Link Offset(m) | 0.0 | | 0.0 | | 0.0 | |
| Crosswalk Width(m) | 4.8 | | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | | 25 | |
| Sign Control | Stop | | Stop | | Stop | |

Intersection Summary

| | |
|-----------------------------------|------------------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 21.4% |
| Analysis Period (min) | 15 |
| | ICU Level of Service A |

HCM Unsignalized Intersection Capacity Analysis
 13: Internal Mall Road & Mall Access East (N)

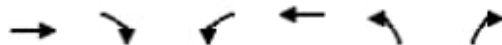
10-20-2022

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------|------|-------|----------------------|------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | P | | ↑ | ↑ | ↑ | |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 20 | 15 | 48 | 31 | 8 | 13 |
| Future Volume (vph) | 20 | 15 | 48 | 31 | 8 | 13 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Hourly flow rate (vph) | 26 | 19 | 62 | 40 | 10 | 17 |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | | |
| Volume Total (vph) | 45 | 62 | 40 | 27 | | |
| Volume Left (vph) | 0 | 62 | 0 | 10 | | |
| Volume Right (vph) | 19 | 0 | 0 | 17 | | |
| Hadj (s) | -0.20 | 0.50 | 0.05 | -0.30 | | |
| Departure Headway (s) | 4.0 | 5.1 | 4.6 | 3.9 | | |
| Degree Utilization, x | 0.05 | 0.09 | 0.05 | 0.03 | | |
| Capacity (veh/h) | 893 | 691 | 761 | 874 | | |
| Control Delay (s) | 7.2 | 7.4 | 6.7 | 7.1 | | |
| Approach Delay (s) | 7.2 | 7.1 | | 7.1 | | |
| Approach LOS | A | A | | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 7.1 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 21.4% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings

14: Viscount Rd

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|------|-------|-------|-------|
| Lane Configurations | ↑ | | | ↑ | ↘ | |
| Traffic Volume (vph) | 200 | 0 | 0 | 332 | 0 | 0 |
| Future Volume (vph) | 200 | 0 | 0 | 332 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 1881 | 0 | 0 | 1863 | 1900 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 1881 | 0 | 0 | 1863 | 1900 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (k/h) | 40 | | | 50 | 50 | |
| Link Distance (m) | 218.9 | | | 0.0 | 20.6 | |
| Travel Time (s) | 19.7 | | | 0.0 | 1.5 | |
| Confl. Peds. (#/hr) | | | | | 11 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 2% | 0% | 0% |
| Adj. Flow (vph) | 206 | 0 | 0 | 342 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 206 | 0 | 0 | 342 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | | 0.0 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | | 100 | 100 | | 100 | 100 |
| Number of Detectors | 2 | | | 2 | 1 | |
| Detector Template | Thru | | | Thru | Left | |
| Leading Detector (m) | 10.0 | | | 10.0 | 2.0 | |
| Trailing Detector (m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 0.6 | | | 0.6 | 2.0 | |
| Detector 1 Type | Cl+Ex | | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 2 Position(m) | 9.4 | | | 9.4 | | |
| Detector 2 Size(m) | 0.6 | | | 0.6 | | |
| Detector 2 Type | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |

Lanes, Volumes, Timings

14: Viscount Rd

10-20-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|-------|-----|-----|-------|-------|-----|
| Detector Phase | 4 | | | 8 | 2 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | | 10.0 | 40.2 | |
| Minimum Split (s) | 16.0 | | | 16.0 | 46.0 | |
| Total Split (s) | 16.0 | | | 16.0 | 46.0 | |
| Total Split (%) | 25.8% | | | 25.8% | 74.2% | |
| Maximum Green (s) | 11.7 | | | 11.7 | 40.2 | |
| Yellow Time (s) | 3.3 | | | 3.3 | 3.3 | |
| All-Red Time (s) | 1.0 | | | 1.0 | 2.5 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | | | 4.3 | 5.8 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | |
| Recall Mode | Max | | | Max | None | |
| Walk Time (s) | | | | | 35.0 | |
| Flash Dont Walk (s) | | | | | 5.0 | |
| Pedestrian Calls (#/hr) | | | | | 11 | |
| Act Effect Green (s) | 34.9 | | | 34.9 | | |
| Actuated g/C Ratio | 0.87 | | | 0.87 | | |
| v/c Ratio | 0.13 | | | 0.21 | | |
| Control Delay | 6.9 | | | 7.2 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 6.9 | | | 7.2 | | |
| LOS | A | | | A | | |
| Approach Delay | 6.9 | | | 7.2 | | |
| Approach LOS | A | | | A | | |

Intersection Summary

| | |
|------------------------------------|------------------|
| Area Type: | Other |
| Cycle Length: | 62 |
| Actuated Cycle Length: | 40.2 |
| Natural Cycle: | 65 |
| Control Type: | Semi Act-Uncoord |
| Maximum v/c Ratio: | 0.21 |
| Intersection Signal Delay: | 7.1 |
| Intersection LOS: | A |
| Intersection Capacity Utilization: | 21.1% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Splits and Phases: 14: Viscount Rd



Timings
14: Viscount Rd

10-20-2022

| | → | ← | |
|----------------------|-------|-------|------|
| Lane Group | EBT | WBT | Ø2 |
| Lane Configurations | ↑ | ↑ | |
| Traffic Volume (vph) | 200 | 332 | |
| Future Volume (vph) | 200 | 332 | |
| Turn Type | NA | NA | |
| Protected Phases | 4 | 8 | 2 |
| Permitted Phases | | | |
| Detector Phase | 4 | 8 | |
| Switch Phase | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 40.2 |
| Minimum Split (s) | 16.0 | 16.0 | 46.0 |
| Total Split (s) | 16.0 | 16.0 | 46.0 |
| Total Split (%) | 25.8% | 25.8% | 74% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.0 | 1.0 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | 4.3 | |
| Lead/Lag | | | |
| Lead-Lag Optimize? | | | |
| Recall Mode | Max | Max | None |
| Act Effct Green (s) | 34.9 | 34.9 | |
| Actuated g/C Ratio | 0.87 | 0.87 | |
| v/c Ratio | 0.13 | 0.21 | |
| Control Delay | 6.9 | 7.2 | |
| Queue Delay | 0.0 | 0.0 | |
| Total Delay | 6.9 | 7.2 | |
| LOS | A | A | |
| Approach Delay | 6.9 | 7.2 | |
| Approach LOS | A | A | |

Intersection Summary

| | |
|-----------------------------------------|------------------------|
| Cycle Length: 62 | |
| Actuated Cycle Length: 40.2 | |
| Natural Cycle: 65 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.21 | |
| Intersection Signal Delay: 7.1 | Intersection LOS: A |
| Intersection Capacity Utilization 21.1% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 14: Viscount Rd



Queues

14: Viscount Rd

10-20-2022

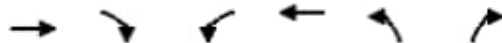


| Lane Group | EBT | WBT |
|-----------------------------|-------|------|
| Lane Group Flow (vph) | 206 | 342 |
| v/c Ratio | 0.13 | 0.21 |
| Control Delay | 6.9 | 7.2 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 6.9 | 7.2 |
| Queue Length 50th (m) | 0.0 | 0.0 |
| Queue Length 95th (m) | 39.4 | 66.5 |
| Internal Link Dist (m) | 194.9 | 0.1 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 1635 | 1620 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.13 | 0.21 |
| Intersection Summary | | |

HCM Signalized Intersection Capacity Analysis

14: Viscount Rd

10-20-2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|------|------|-------|------|---------------------------|------|
| Lane Configurations | ↑ | | | ↑ | ↔ | |
| Traffic Volume (vph) | 200 | 0 | 0 | 332 | 0 | 0 |
| Future Volume (vph) | 200 | 0 | 0 | 332 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.3 | | | 4.3 | | |
| Lane Util. Factor | 1.00 | | | 1.00 | | |
| Frbp, ped/bikes | 1.00 | | | 1.00 | | |
| Flpb, ped/bikes | 1.00 | | | 1.00 | | |
| Frt | 1.00 | | | 1.00 | | |
| Flt Protected | 1.00 | | | 1.00 | | |
| Satd. Flow (prot) | 1881 | | | 1863 | | |
| Flt Permitted | 1.00 | | | 1.00 | | |
| Satd. Flow (perm) | 1881 | | | 1863 | | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 206 | 0 | 0 | 342 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 206 | 0 | 0 | 342 | 0 | 0 |
| Confl. Peds. (#/hr) | | | | | 11 | |
| Heavy Vehicles (%) | 1% | 0% | 0% | 2% | 0% | 0% |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 30.5 | | | 30.5 | | |
| Effective Green, g (s) | 30.5 | | | 30.5 | | |
| Actuated g/C Ratio | 0.68 | | | 0.68 | | |
| Clearance Time (s) | 4.3 | | | 4.3 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Lane Grp Cap (vph) | 1280 | | | 1268 | | |
| v/s Ratio Prot | 0.11 | | | 0.18 | | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.16 | | | 0.27 | | |
| Uniform Delay, d1 | 2.6 | | | 2.8 | | |
| Progression Factor | 1.00 | | | 1.00 | | |
| Incremental Delay, d2 | 0.3 | | | 0.5 | | |
| Delay (s) | 2.8 | | | 3.3 | | |
| Level of Service | A | | | A | | |
| Approach Delay (s) | 2.8 | | | 3.3 | 0.0 | |
| Approach LOS | A | | | A | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 3.1 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.24 | | | |
| Actuated Cycle Length (s) | | | 44.8 | | Sum of lost time (s) | 10.1 |
| Intersection Capacity Utilization | | | 21.1% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| c Critical Lane Group | | | | | | |

FUTURE TOTAL

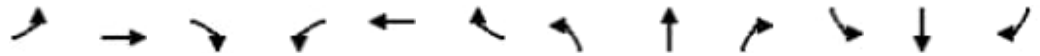


CANADA | INDIA | AFRICA | MIDDLE EAST

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-26-2022

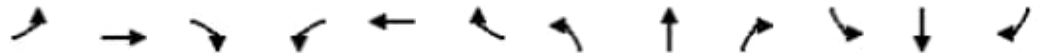


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 | 55 |
| Future Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | | 0.97 | 0.99 | | 0.98 | 1.00 | | 0.95 | | 1.00 | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.993 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 3574 | 1482 | 1719 | 3343 | 1568 | 1671 | 3409 | 1568 | 1787 | 3455 | 0 |
| Flt Permitted | 0.498 | | | 0.264 | | | 0.159 | | | 0.088 | | |
| Satd. Flow (perm) | 922 | 3574 | 1445 | 475 | 3343 | 1535 | 280 | 3409 | 1496 | 166 | 3455 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 143 | | | 307 | | | 142 | | | 5 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 242.3 | | | 231.0 | | | 353.5 | | | 276.8 | |
| Travel Time (s) | | 17.4 | | | 16.6 | | | 25.5 | | | 19.9 | |
| Confl. Peds. (#/hr) | 7 | | 10 | 10 | | 7 | 5 | | 25 | 25 | | 5 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 1% | 9% | 5% | 8% | 3% | 8% | 4% | 3% | 1% | 3% | 18% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 239 | 488 | 118 | 276 | 298 | 307 | 86 | 1059 | 217 | 361 | 1219 | 57 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 239 | 488 | 118 | 276 | 298 | 307 | 86 | 1059 | 217 | 361 | 1276 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.02 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-26-2022

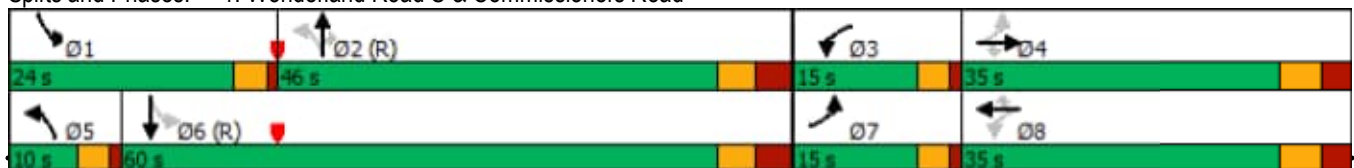


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 | |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 15.0 | 35.0 | 35.0 | 10.0 | 46.0 | 46.0 | 24.0 | 60.0 | |
| Total Split (%) | 12.5% | 29.2% | 29.2% | 12.5% | 29.2% | 29.2% | 8.3% | 38.3% | 38.3% | 20.0% | 50.0% | |
| Maximum Green (s) | 11.0 | 28.4 | 28.4 | 11.0 | 28.4 | 28.4 | 6.0 | 39.3 | 39.3 | 20.0 | 53.3 | |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | |
| Flash Dont Walk (s) | | 20.0 | 20.0 | | 20.0 | 20.0 | | 19.0 | 19.0 | | 19.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | |
| Act Effct Green (s) | 35.5 | 21.9 | 21.9 | 35.5 | 21.9 | 21.9 | 51.7 | 41.6 | 41.6 | 72.5 | 60.4 | |
| Actuated g/C Ratio | 0.30 | 0.18 | 0.18 | 0.30 | 0.18 | 0.18 | 0.43 | 0.35 | 0.35 | 0.60 | 0.50 | |
| v/c Ratio | 0.68 | 0.75 | 0.31 | 1.09 | 0.49 | 0.58 | 0.42 | 0.90 | 0.36 | 0.85 | 0.73 | |
| Control Delay | 42.5 | 53.7 | 5.7 | 115.3 | 46.2 | 9.0 | 23.4 | 42.7 | 8.2 | 49.8 | 28.1 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 42.5 | 53.7 | 5.7 | 115.3 | 46.2 | 9.0 | 23.4 | 42.7 | 8.2 | 49.8 | 28.1 | |
| LOS | D | D | A | F | D | A | C | D | A | D | C | |
| Approach Delay | | 43.8 | | | 54.9 | | | 36.0 | | | 32.9 | |
| Approach LOS | | D | | | D | | | D | | | C | |

Intersection Summary

| | |
|-----------------------------------|-----------------------------------------------------------------|
| Area Type: | Other |
| Cycle Length: | 120 |
| Actuated Cycle Length: | 120 |
| Offset: | 26 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green |
| Natural Cycle: | 105 |
| Control Type: | Actuated-Coordinated |
| Maximum v/c Ratio: | 1.09 |
| Intersection Signal Delay: | 39.8 |
| Intersection LOS: | D |
| Intersection Capacity Utilization | 95.4% |
| ICU Level of Service | F |
| Analysis Period (min) | 15 |

Splits and Phases: 1: Wonderland Road S & Commissioners Road



FT AM 10:17 pm 10-13-2022

Timings

1: Wonderland Road S & Commissioners Road

10-26-2022

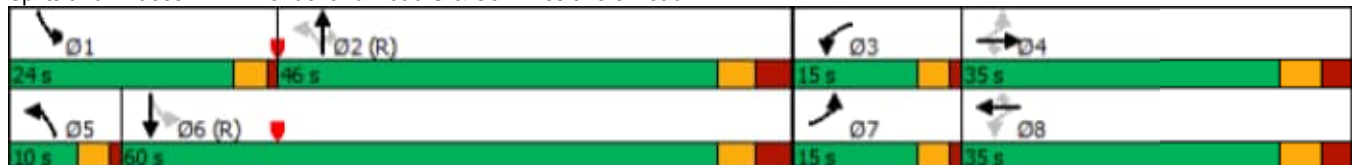


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↗ | ↘ | ↘ | ↗ | ↘ | ↘ | ↗ | ↘ | ↘ | ↗ |
| Traffic Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 |
| Future Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 |
| Total Split (s) | 15.0 | 35.0 | 35.0 | 15.0 | 35.0 | 35.0 | 10.0 | 46.0 | 46.0 | 24.0 | 60.0 |
| Total Split (%) | 12.5% | 29.2% | 29.2% | 12.5% | 29.2% | 29.2% | 8.3% | 38.3% | 38.3% | 20.0% | 50.0% |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effct Green (s) | 35.5 | 21.9 | 21.9 | 35.5 | 21.9 | 21.9 | 51.7 | 41.6 | 41.6 | 72.5 | 60.4 |
| Actuated g/C Ratio | 0.30 | 0.18 | 0.18 | 0.30 | 0.18 | 0.18 | 0.43 | 0.35 | 0.35 | 0.60 | 0.50 |
| v/c Ratio | 0.68 | 0.75 | 0.31 | 1.09 | 0.49 | 0.58 | 0.42 | 0.90 | 0.36 | 0.85 | 0.73 |
| Control Delay | 42.5 | 53.7 | 5.7 | 115.3 | 46.2 | 9.0 | 23.4 | 42.7 | 8.2 | 49.8 | 28.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 42.5 | 53.7 | 5.7 | 115.3 | 46.2 | 9.0 | 23.4 | 42.7 | 8.2 | 49.8 | 28.1 |
| LOS | D | D | A | F | D | A | C | D | A | D | C |
| Approach Delay | | 43.8 | | | 54.9 | | | 36.0 | | | 32.9 |
| Approach LOS | | D | | | D | | | D | | | C |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 26 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 39.8
 Intersection Capacity Utilization 95.4%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Queues

1: Wonderland Road S & Commissioners Road

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|------|-------|------|-------|-------|-------|------|--------|------|--------|-------|
| Lane Group Flow (vph) | 239 | 488 | 118 | 276 | 298 | 307 | 86 | 1059 | 217 | 361 | 1276 |
| v/c Ratio | 0.68 | 0.75 | 0.31 | 1.09 | 0.49 | 0.58 | 0.42 | 0.90 | 0.36 | 0.85 | 0.73 |
| Control Delay | 42.5 | 53.7 | 5.7 | 115.3 | 46.2 | 9.0 | 23.4 | 42.7 | 8.2 | 49.8 | 28.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 42.5 | 53.7 | 5.7 | 115.3 | 46.2 | 9.0 | 23.4 | 42.7 | 8.2 | 49.8 | 28.1 |
| Queue Length 50th (m) | 46.0 | 61.1 | 0.0 | ~61.3 | 35.3 | 0.0 | 7.7 | 146.0 | 17.3 | 66.4 | 131.7 |
| Queue Length 95th (m) | 64.6 | 75.7 | 10.2 | #94.4 | 47.2 | 24.0 | 14.0 | #184.5 | 31.2 | #133.9 | 174.2 |
| Internal Link Dist (m) | | 218.3 | | | 207.0 | | | 329.5 | | | 252.8 |
| Turn Bay Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | |
| Base Capacity (vph) | 350 | 845 | 451 | 254 | 791 | 597 | 206 | 1180 | 610 | 427 | 1740 |
| 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 | 0.68 | 0.58 | 0.26 | 1.09 | 0.38 | 0.51 | 0.42 | 0.90 | 0.36 | 0.85 | 0.73 |

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis

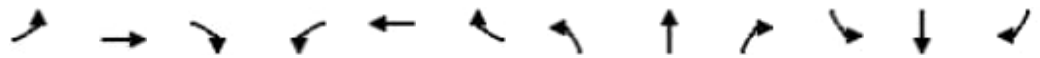
1: Wonderland Road S & Commissioners Road

10-26-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 | 55 |
| Future Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1765 | 3574 | 1445 | 1717 | 3343 | 1535 | 1671 | 3409 | 1496 | 1787 | 3456 | |
| Flt Permitted | 0.50 | 1.00 | 1.00 | 0.26 | 1.00 | 1.00 | 0.16 | 1.00 | 1.00 | 0.09 | 1.00 | |
| Satd. Flow (perm) | 925 | 3574 | 1445 | 476 | 3343 | 1535 | 279 | 3409 | 1496 | 165 | 3456 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 239 | 488 | 118 | 276 | 298 | 307 | 86 | 1059 | 217 | 361 | 1219 | 57 |
| RTOR Reduction (vph) | 0 | 0 | 96 | 0 | 0 | 251 | 0 | 0 | 93 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 239 | 488 | 22 | 276 | 298 | 56 | 86 | 1059 | 124 | 361 | 1273 | 0 |
| Confl. Peds. (#/hr) | 7 | | 10 | 10 | | 7 | 5 | | 25 | 25 | | 5 |
| Heavy Vehicles (%) | 2% | 1% | 9% | 5% | 8% | 3% | 8% | 4% | 3% | 1% | 3% | 18% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Actuated Green, G (s) | 32.9 | 21.9 | 21.9 | 32.9 | 21.9 | 21.9 | 47.8 | 41.6 | 41.6 | 69.8 | 59.6 | |
| Effective Green, g (s) | 32.9 | 21.9 | 21.9 | 32.9 | 21.9 | 21.9 | 47.8 | 41.6 | 41.6 | 69.8 | 59.6 | |
| Actuated g/C Ratio | 0.27 | 0.18 | 0.18 | 0.27 | 0.18 | 0.18 | 0.40 | 0.35 | 0.35 | 0.58 | 0.50 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 330 | 652 | 263 | 244 | 610 | 280 | 183 | 1181 | 518 | 423 | 1716 | |
| v/s Ratio Prot | 0.07 | 0.14 | | c0.10 | 0.09 | | 0.02 | 0.31 | | c0.17 | 0.37 | |
| v/s Ratio Perm | 0.13 | | 0.01 | c0.21 | | 0.04 | 0.16 | | 0.08 | c0.32 | | |
| v/c Ratio | 0.72 | 0.75 | 0.08 | 1.13 | 0.49 | 0.20 | 0.47 | 0.90 | 0.24 | 0.85 | 0.74 | |
| Uniform Delay, d1 | 37.3 | 46.4 | 40.7 | 40.2 | 44.0 | 41.6 | 23.6 | 37.2 | 27.9 | 34.3 | 24.1 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.29 | 0.84 | 0.61 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 7.7 | 4.7 | 0.1 | 97.5 | 0.6 | 0.4 | 1.8 | 10.0 | 1.0 | 15.3 | 2.9 | |
| Delay (s) | 44.9 | 51.1 | 40.8 | 137.7 | 44.6 | 42.0 | 32.2 | 41.4 | 17.9 | 49.6 | 27.0 | |
| Level of Service | D | D | D | F | D | D | C | D | B | D | C | |
| Approach Delay (s) | | 47.9 | | | 72.9 | | | 37.1 | | | 32.0 | |
| Approach LOS | | D | | | E | | | D | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 43.9 | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.97 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | | | | | 21.3 | | |
| Intersection Capacity Utilization | | | 95.4% | | | | | | | | ICU Level of Service | F |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Lanes, Volumes, Timings
2: Wonderland Road S & Village Green Ave

10-26-2022

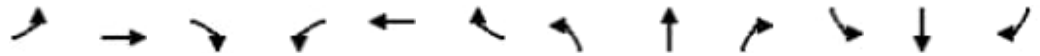


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1229 | 34 | 44 | 1644 | 24 |
| Future Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1229 | 34 | 44 | 1644 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (m) | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Storage Length (m) | 30.0 | | 0.0 | 20.0 | | 0.0 | 35.0 | | 0.0 | 28.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | 0.99 | | 0.99 | 0.99 | | | 1.00 | | | 1.00 | |
| Frt | | 0.925 | | | 0.880 | | | 0.996 | | | 0.998 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1636 | 1741 | 0 | 1685 | 1594 | 0 | 1685 | 3421 | 0 | 1652 | 3430 | 0 |
| Flt Permitted | 0.717 | | | 0.723 | | | 0.119 | | | 0.198 | | |
| Satd. Flow (perm) | 1227 | 1741 | 0 | 1274 | 1594 | 0 | 211 | 3421 | 0 | 344 | 3430 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 26 | | | 49 | | | 5 | | | | 2 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | | 50 |
| Link Distance (m) | | 279.4 | | | 195.9 | | | 119.4 | | | | 353.5 |
| Travel Time (s) | | 20.1 | | | 14.1 | | | 8.6 | | | | 25.5 |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 9 | | 16 | 16 | | 19 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 2 | | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 17% | 0% | 0% | 5% | 0% | 2% | 3% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| Adj. Flow (vph) | 36 | 26 | 26 | 27 | 12 | 49 | 8 | 1267 | 35 | 45 | 1695 | 25 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 36 | 52 | 0 | 27 | 61 | 0 | 8 | 1302 | 0 | 45 | 1720 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.0 | | | 3.0 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.09 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.02 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |

Lanes, Volumes, Timings

2: Wonderland Road S & Village Green Ave

10-26-2022

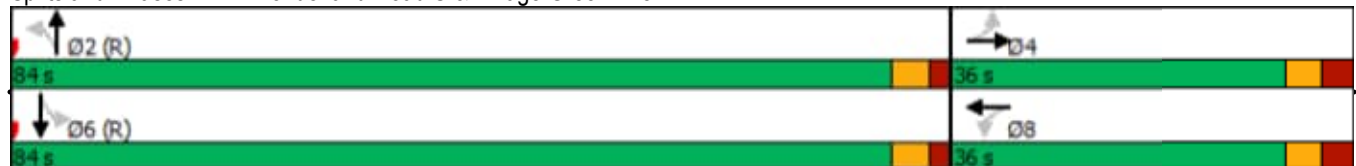


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Detector 2 Type | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 34.6 | 34.6 | | 34.6 | 34.6 | | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (s) | 36.0 | 36.0 | | 36.0 | 36.0 | | 84.0 | 84.0 | | 84.0 | 84.0 | |
| Total Split (%) | 30.0% | 30.0% | | 30.0% | 30.0% | | 70.0% | 70.0% | | 70.0% | 70.0% | |
| Maximum Green (s) | 29.7 | 29.7 | | 29.7 | 29.7 | | 78.6 | 78.6 | | 78.6 | 78.6 | |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 2.1 | 2.1 | | 2.1 | 2.1 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 21.0 | 21.0 | | 21.0 | 21.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 9.3 | 9.3 | | 9.3 | 9.3 | | 102.7 | 102.7 | | 102.7 | 102.7 | |
| Actuated g/C Ratio | 0.08 | 0.08 | | 0.08 | 0.08 | | 0.86 | 0.86 | | 0.86 | 0.86 | |
| v/c Ratio | 0.38 | 0.33 | | 0.27 | 0.36 | | 0.04 | 0.44 | | 0.15 | 0.59 | |
| Control Delay | 63.1 | 35.7 | | 58.0 | 24.6 | | 3.4 | 3.5 | | 4.5 | 4.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 63.1 | 35.7 | | 58.0 | 24.6 | | 3.4 | 3.5 | | 4.5 | 4.7 | |
| LOS | E | D | | E | C | | A | A | | A | A | |
| Approach Delay | 46.9 | | | 34.9 | | | 3.5 | | | 4.6 | | |
| Approach LOS | D | | | C | | | A | | | A | | |

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 114 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 6.2
 Intersection Capacity Utilization 66.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

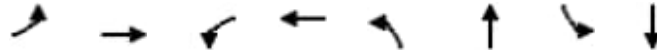
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Timings

2: Wonderland Road S & Village Green Ave

10-26-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↗ | ↖ | ↗ | ↖ | ↕ | ↖ | ↕ |
| Traffic Volume (vph) | 35 | 25 | 26 | 12 | 8 | 1229 | 44 | 1644 |
| Future Volume (vph) | 35 | 25 | 26 | 12 | 8 | 1229 | 44 | 1644 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA |
| Protected Phases | | 4 | | 8 | | 2 | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 34.6 | 34.6 | 34.6 | 34.6 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 84.0 | 84.0 | 84.0 | 84.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.1 | 2.1 | 2.1 | 2.1 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 5.4 | 5.4 | 5.4 | 5.4 |
| Lead/Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | 9.3 | 9.3 | 9.3 | 9.3 | 102.7 | 102.7 | 102.7 | 102.7 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.08 | 0.08 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.38 | 0.33 | 0.27 | 0.36 | 0.04 | 0.44 | 0.15 | 0.59 |
| Control Delay | 63.1 | 35.7 | 58.0 | 24.6 | 3.4 | 3.5 | 4.5 | 4.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.1 | 35.7 | 58.0 | 24.6 | 3.4 | 3.5 | 4.5 | 4.7 |
| LOS | E | D | E | C | A | A | A | A |
| Approach Delay | | 46.9 | | 34.9 | | 3.5 | | 4.6 |
| Approach LOS | | D | | C | | A | | A |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 114 (95%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 6.2
 Intersection Capacity Utilization 66.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

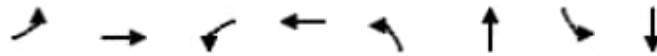
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Queues

2: Wonderland Road S & Village Green Ave

10-26-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|------|-------|------|-------|------|------|------|--------|
| Lane Group Flow (vph) | 36 | 52 | 27 | 61 | 8 | 1302 | 45 | 1720 |
| v/c Ratio | 0.38 | 0.33 | 0.27 | 0.36 | 0.04 | 0.44 | 0.15 | 0.59 |
| Control Delay | 63.1 | 35.7 | 58.0 | 24.6 | 3.4 | 3.5 | 4.5 | 4.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 63.1 | 35.7 | 58.0 | 24.6 | 3.4 | 3.5 | 4.5 | 4.7 |
| Queue Length 50th (m) | 8.7 | 6.2 | 6.5 | 2.8 | 0.2 | 13.6 | 1.4 | 32.2 |
| Queue Length 95th (m) | 19.5 | 18.6 | 15.9 | 16.2 | m0.9 | 39.2 | m4.3 | m102.1 |
| Internal Link Dist (m) | | 255.4 | | 171.9 | | 95.4 | | 329.5 |
| Turn Bay Length (m) | 30.0 | | 20.0 | | 35.0 | | 28.0 | |
| Base Capacity (vph) | 303 | 450 | 315 | 431 | 180 | 2928 | 294 | 2935 |
| 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 | 0.12 | 0.12 | 0.09 | 0.14 | 0.04 | 0.44 | 0.15 | 0.59 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Wonderland Road S & Village Green Ave

10-26-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|------|------|------|------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | |
| Traffic Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1229 | 34 | 44 | 1644 | 24 |
| Future Volume (vph) | 35 | 25 | 25 | 26 | 12 | 48 | 8 | 1229 | 34 | 44 | 1644 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Total Lost time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | |
| Frt | 1.00 | 0.93 | | 1.00 | 0.88 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1626 | 1738 | | 1675 | 1593 | | 1682 | 3421 | | 1639 | 3429 | |
| Flt Permitted | 0.72 | 1.00 | | 0.72 | 1.00 | | 0.12 | 1.00 | | 0.20 | 1.00 | |
| Satd. Flow (perm) | 1228 | 1738 | | 1275 | 1593 | | 210 | 3421 | | 341 | 3429 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 36 | 26 | 26 | 27 | 12 | 49 | 8 | 1267 | 35 | 45 | 1695 | 25 |
| RTOR Reduction (vph) | 0 | 24 | 0 | 0 | 46 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 36 | 28 | 0 | 27 | 15 | 0 | 8 | 1301 | 0 | 45 | 1720 | 0 |
| Confl. Peds. (#/hr) | 5 | | 5 | 5 | | 5 | 9 | | 16 | 16 | | 19 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 2 | | | |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 17% | 0% | 0% | 5% | 0% | 2% | 3% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 9 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 7.9 | 7.9 | | 7.9 | 7.9 | | 100.4 | 100.4 | | 100.4 | 100.4 | |
| Effective Green, g (s) | 7.9 | 7.9 | | 7.9 | 7.9 | | 100.4 | 100.4 | | 100.4 | 100.4 | |
| Actuated g/C Ratio | 0.07 | 0.07 | | 0.07 | 0.07 | | 0.84 | 0.84 | | 0.84 | 0.84 | |
| Clearance Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 80 | 114 | | 83 | 104 | | 175 | 2862 | | 285 | 2868 | |
| v/s Ratio Prot | | 0.02 | | | 0.01 | | | 0.38 | | | c0.50 | |
| v/s Ratio Perm | c0.03 | | | 0.02 | | | 0.04 | | | 0.13 | | |
| v/c Ratio | 0.45 | 0.24 | | 0.33 | 0.15 | | 0.05 | 0.45 | | 0.16 | 0.60 | |
| Uniform Delay, d1 | 54.0 | 53.2 | | 53.5 | 52.9 | | 1.7 | 2.6 | | 1.8 | 3.2 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.16 | 1.09 | | 1.37 | 1.12 | |
| Incremental Delay, d2 | 4.0 | 1.1 | | 2.3 | 0.7 | | 0.5 | 0.5 | | 0.8 | 0.7 | |
| Delay (s) | 57.9 | 54.3 | | 55.8 | 53.5 | | 2.4 | 3.3 | | 3.4 | 4.3 | |
| Level of Service | E | D | | E | D | | A | A | | A | A | |
| Approach Delay (s) | | 55.8 | | | 54.2 | | | 3.3 | | | 4.2 | |
| Approach LOS | | E | | | D | | | A | | | A | |

Intersection Summary

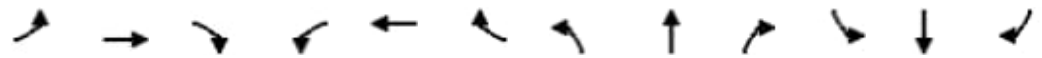
| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 6.6 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.59 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 11.7 |
| Intersection Capacity Utilization | 66.9% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings

3: Wonderland Road S & Mall Access East (N)/Private Access

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 22 | 0 | 9 | 6 | 0 | 24 | 25 | 1133 | 2 | 15 | 1525 | 115 |
| Future Volume (vph) | 22 | 0 | 9 | 6 | 0 | 24 | 25 | 1133 | 2 | 15 | 1525 | 115 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 50.0 | | 0.0 | 30.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.894 | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.990 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 0 | 1214 | 0 | 1630 | 0 | 1805 | 3471 | 0 | 1805 | 3505 | 1583 |
| Flt Permitted | 0.950 | | | | 0.990 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 0 | 1214 | 0 | 1630 | 0 | 1805 | 3471 | 0 | 1805 | 3505 | 1583 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | 50 | |
| Link Distance (m) | | 100.3 | | | 66.2 | | | 161.3 | | | 119.4 | |
| Travel Time (s) | | 18.1 | | | 11.9 | | | 11.6 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 11 | | 24 | 24 | | 11 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%) | 0% | 0% | 33% | 0% | 0% | 4% | 0% | 4% | 0% | 0% | 3% | 2% |
| Adj. Flow (vph) | 24 | 0 | 10 | 7 | 0 | 26 | 27 | 1232 | 2 | 16 | 1658 | 125 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 24 | 0 | 10 | 0 | 33 | 0 | 27 | 1234 | 0 | 16 | 1658 | 125 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 58.8% |
| ICU Level of Service | B |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

3: Wonderland Road S & Mall Access East (N)/Private Access

10-26-2022

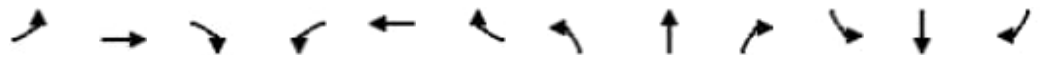


| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|------|----------------------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 22 | 0 | 9 | 6 | 0 | 24 | 25 | 1133 | 2 | 15 | 1525 | 115 |
| Future Volume (Veh/h) | 22 | 0 | 9 | 6 | 0 | 24 | 25 | 1133 | 2 | 15 | 1525 | 115 |
| Sign Control | Stop | | | Stop | | | Free | | | Free | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 24 | 0 | 10 | 7 | 0 | 26 | 27 | 1232 | 2 | 16 | 1658 | 125 |
| Pedestrians | 11 | | | 24 | | | | | | | | |
| Lane Width (m) | 3.6 | | | 3.6 | | | | | | | | |
| Walking Speed (m/s) | 1.2 | | | 1.2 | | | | | | | | |
| Percent Blockage | 1 | | | 2 | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | None | | | None | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | 161 | | | 119 | | |
| pX, platoon unblocked | 0.89 | 0.89 | 0.83 | 0.89 | 0.89 | 0.87 | 0.83 | | | | 0.87 | |
| vC, conflicting volume | 2397 | 3013 | 840 | 2182 | 3137 | 641 | 1794 | | | | 1258 | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1684 | 2373 | 399 | 1444 | 2512 | 297 | 1548 | | | | 1004 | |
| tC, single (s) | 7.5 | 6.5 | 7.6 | 7.5 | 6.5 | 7.0 | 4.1 | | | | 4.1 | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.6 | 3.5 | 4.0 | 3.3 | 2.2 | | | | 2.2 | |
| p0 queue free % | 50 | 100 | 98 | 90 | 100 | 96 | 92 | | | | 97 | |
| cM capacity (veh/h) | 48 | 27 | 429 | 73 | 22 | 593 | 357 | | | | 597 | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | SB 4 | | |
| Volume Total | 24 | 10 | 33 | 27 | 821 | 413 | 16 | 829 | 829 | 125 | | |
| Volume Left | 24 | 0 | 7 | 27 | 0 | 0 | 16 | 0 | 0 | 0 | | |
| Volume Right | 0 | 10 | 26 | 0 | 0 | 2 | 0 | 0 | 0 | 125 | | |
| cSH | 48 | 429 | 236 | 357 | 1700 | 1700 | 597 | 1700 | 1700 | 1700 | | |
| Volume to Capacity | 0.50 | 0.02 | 0.14 | 0.08 | 0.48 | 0.24 | 0.03 | 0.49 | 0.49 | 0.07 | | |
| Queue Length 95th (m) | 14.9 | 0.6 | 3.8 | 2.0 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.0 | | |
| Control Delay (s) | 139.9 | 13.6 | 22.7 | 15.9 | 0.0 | 0.0 | 11.2 | 0.0 | 0.0 | 0.0 | | |
| Lane LOS | F | B | C | C | | | | B | | | | |
| Approach Delay (s) | 102.8 | 22.7 | | 0.3 | | | | 0.1 | | | | |
| Approach LOS | F | C | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 1.6 | | | | | | | | | | | |
| Intersection Capacity Utilization | 58.8% | | ICU Level of Service | | | | | B | | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022

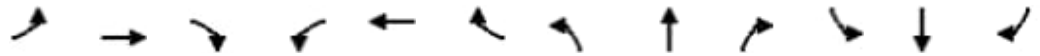


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↗ | | ↔ | | ↗ | ↕ | | ↗ | ↕ | ↗ |
| Traffic Volume (vph) | 105 | 1 | 10 | 6 | 1 | 8 | 21 | 1107 | 5 | 8 | 1197 | 328 |
| Future Volume (vph) | 105 | 1 | 10 | 6 | 1 | 8 | 21 | 1107 | 5 | 8 | 1197 | 328 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 35.0 | | 0.0 | 40.0 | | 35.0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | 1.00 | 0.98 | | 0.99 | | 1.00 | 1.00 | | 0.99 | | 0.98 |
| Frt | | | 0.850 | | 0.929 | | | 0.999 | | | | 0.850 |
| Flt Protected | | 0.953 | | | 0.980 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1662 | 1468 | 0 | 1715 | 0 | 1719 | 3434 | 0 | 1805 | 3471 | 1541 |
| Flt Permitted | | 0.716 | | | 0.870 | | 0.181 | | | 0.204 | | |
| Satd. Flow (perm) | 0 | 1243 | 1433 | 0 | 1515 | 0 | 327 | 3434 | 0 | 384 | 3471 | 1504 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 25 | | 9 | | | 1 | | | | 225 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | | 50 |
| Link Distance (m) | | 105.0 | | | 57.0 | | | 158.8 | | | | 161.3 |
| Travel Time (s) | | 18.9 | | | 10.3 | | | 11.4 | | | | 11.6 |
| Confl. Peds. (#/hr) | 3 | | 9 | 9 | | 3 | 9 | | 37 | 37 | | 9 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 9% | 0% | 10% | 0% | 0% | 0% | 5% | 5% | 0% | 0% | 4% | 1% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Adj. Flow (vph) | 115 | 1 | 11 | 7 | 1 | 9 | 23 | 1216 | 5 | 9 | 1315 | 360 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 116 | 11 | 0 | 17 | 0 | 23 | 1221 | 0 | 9 | 1315 | 360 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.05 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | | 28.7 | 28.7 | | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | | 81.0 | 81.0 | | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 32.5% | 32.5% | 32.5% | 32.5% | | 67.5% | 67.5% | | 67.5% | 67.5% | 67.5% |
| Maximum Green (s) | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | | 75.3 | 75.3 | | 75.3 | 75.3 | 75.3 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 19.0 | 19.0 | 19.0 | 16.0 | 16.0 | | 16.0 | 16.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | | 16.5 | 16.5 | | 16.5 | | 91.1 | 91.1 | | 91.1 | 91.1 | 91.1 |
| Actuated g/C Ratio | | 0.14 | 0.14 | | 0.14 | | 0.76 | 0.76 | | 0.76 | 0.76 | 0.76 |
| v/c Ratio | | 0.68 | 0.05 | | 0.08 | | 0.09 | 0.47 | | 0.03 | 0.50 | 0.30 |
| Control Delay | | 67.9 | 5.6 | | 28.3 | | 3.6 | 4.0 | | 3.9 | 3.8 | 1.4 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.2 | 0.0 |
| Total Delay | | 67.9 | 5.6 | | 28.3 | | 3.6 | 4.0 | | 3.9 | 4.0 | 1.4 |
| LOS | | E | A | | C | | A | A | | A | A | A |
| Approach Delay | | 62.5 | | | 28.3 | | | 4.0 | | | | 3.4 |
| Approach LOS | | E | | | C | | | A | | | | A |

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 63 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 6.3
 Intersection Capacity Utilization 66.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

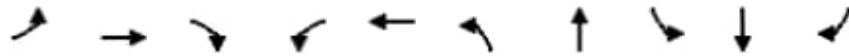
Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022

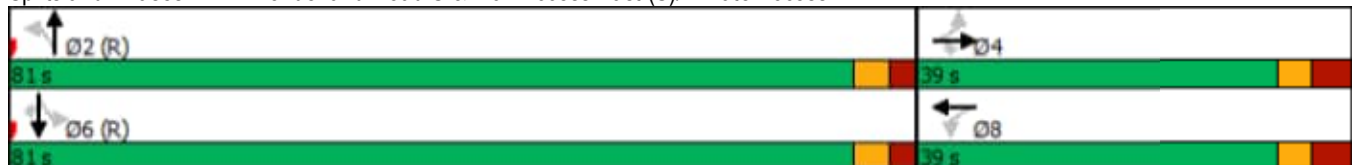


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↔ | | ↔ | ↔ | ↔ | ↔ | ↔ | ↔ |
| Traffic Volume (vph) | 105 | 1 | 10 | 6 | 1 | 21 | 1107 | 8 | 1197 | 328 |
| Future Volume (vph) | 105 | 1 | 10 | 6 | 1 | 21 | 1107 | 8 | 1197 | 328 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | 28.7 | 28.7 | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | 81.0 | 81.0 | 81.0 | 81.0 | 81.0 |
| Total Split (%) | 32.5% | 32.5% | 32.5% | 32.5% | 32.5% | 67.5% | 67.5% | 67.5% | 67.5% | 67.5% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effct Green (s) | | 16.5 | 16.5 | | 16.5 | 91.1 | 91.1 | 91.1 | 91.1 | 91.1 |
| Actuated g/C Ratio | | 0.14 | 0.14 | | 0.14 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| v/c Ratio | | 0.68 | 0.05 | | 0.08 | 0.09 | 0.47 | 0.03 | 0.50 | 0.30 |
| Control Delay | | 67.9 | 5.6 | | 28.3 | 3.6 | 4.0 | 3.9 | 3.8 | 1.4 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | | 67.9 | 5.6 | | 28.3 | 3.6 | 4.0 | 3.9 | 4.0 | 1.4 |
| LOS | | E | A | | C | A | A | A | A | A |
| Approach Delay | | 62.5 | | | 28.3 | | 4.0 | | 3.4 | |
| Approach LOS | | E | | | C | | A | | A | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 63 (53%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 6.3
 Intersection Capacity Utilization 66.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Queues

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022



| Lane Group | EBT | EBR | WBT | NBL | NBT | SBL | SBT | SBR |
|------------------------|------|------|------|------|-------|------|-------|------|
| Lane Group Flow (vph) | 116 | 11 | 17 | 23 | 1221 | 9 | 1315 | 360 |
| v/c Ratio | 0.68 | 0.05 | 0.08 | 0.09 | 0.47 | 0.03 | 0.50 | 0.30 |
| Control Delay | 67.9 | 5.6 | 28.3 | 3.6 | 4.0 | 3.9 | 3.8 | 1.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 67.9 | 5.6 | 28.3 | 3.6 | 4.0 | 3.9 | 4.0 | 1.4 |
| Queue Length 50th (m) | 27.7 | 0.0 | 1.7 | 0.9 | 32.1 | 0.2 | 15.8 | 0.0 |
| Queue Length 95th (m) | 45.5 | 2.4 | 8.3 | m1.9 | 37.4 | m0.8 | 56.4 | 7.5 |
| Internal Link Dist (m) | 81.0 | | 33.0 | | 134.8 | | 137.3 | |
| Turn Bay Length (m) | | | | 35.0 | | 40.0 | | 35.0 |
| Base Capacity (vph) | 334 | 403 | 414 | 248 | 2606 | 291 | 2634 | 1195 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 203 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 477 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.35 | 0.03 | 0.04 | 0.09 | 0.51 | 0.03 | 0.61 | 0.30 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations | | 4 | 7 | | 4 | | 7 | 4 | | 7 | 4 | 7 |
| Traffic Volume (vph) | 105 | 1 | 10 | 6 | 1 | 8 | 21 | 1107 | 5 | 8 | 1197 | 328 |
| Future Volume (vph) | 105 | 1 | 10 | 6 | 1 | 8 | 21 | 1107 | 5 | 8 | 1197 | 328 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frb, ped/bikes | | 1.00 | 0.98 | | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.98 |
| Flpb, ped/bikes | | 1.00 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 0.99 | 1.00 | 1.00 |
| Frt | | 1.00 | 0.85 | | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | | 0.98 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1654 | 1433 | | 1706 | | 1716 | 3435 | | 1780 | 3471 | 1504 |
| Flt Permitted | | 0.72 | 1.00 | | 0.87 | | 0.18 | 1.00 | | 0.20 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1243 | 1433 | | 1515 | | 327 | 3435 | | 382 | 3471 | 1504 |
| Peak-hour factor, PHF | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 115 | 1 | 11 | 7 | 1 | 9 | 23 | 1216 | 5 | 9 | 1315 | 360 |
| RTOR Reduction (vph) | 0 | 0 | 9 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 54 |
| Lane Group Flow (vph) | 0 | 116 | 2 | 0 | 9 | 0 | 23 | 1221 | 0 | 9 | 1315 | 306 |
| Confl. Peds. (#/hr) | 3 | | 9 | 9 | | 3 | 9 | | 37 | 37 | | 9 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Heavy Vehicles (%) | 9% | 0% | 10% | 0% | 0% | 0% | 5% | 5% | 0% | 0% | 4% | 1% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Actuated Green, G (s) | | 16.5 | 16.5 | | 16.5 | | 91.1 | 91.1 | | 91.1 | 91.1 | 91.1 |
| Effective Green, g (s) | | 16.5 | 16.5 | | 16.5 | | 91.1 | 91.1 | | 91.1 | 91.1 | 91.1 |
| Actuated g/C Ratio | | 0.14 | 0.14 | | 0.14 | | 0.76 | 0.76 | | 0.76 | 0.76 | 0.76 |
| Clearance Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 170 | 197 | | 208 | | 248 | 2607 | | 290 | 2635 | 1141 |
| v/s Ratio Prot | | | | | | | | 0.36 | | | c0.38 | |
| v/s Ratio Perm | | c0.09 | 0.00 | | 0.01 | | 0.07 | | | 0.02 | | 0.20 |
| v/c Ratio | | 0.68 | 0.01 | | 0.04 | | 0.09 | 0.47 | | 0.03 | 0.50 | 0.27 |
| Uniform Delay, d1 | | 49.3 | 44.7 | | 44.9 | | 3.7 | 5.4 | | 3.6 | 5.6 | 4.4 |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.56 | 0.57 | | 0.74 | 0.52 | 0.41 |
| Incremental Delay, d2 | | 10.7 | 0.0 | | 0.1 | | 0.6 | 0.5 | | 0.2 | 0.6 | 0.5 |
| Delay (s) | | 60.0 | 44.7 | | 45.0 | | 2.8 | 3.6 | | 2.8 | 3.5 | 2.3 |
| Level of Service | | E | D | | D | | A | A | | A | A | A |
| Approach Delay (s) | | 58.7 | | | 45.0 | | | 3.6 | | | 3.2 | |
| Approach LOS | | E | | | D | | | A | | | A | |

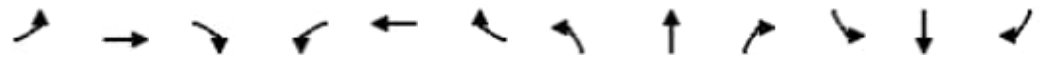
Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 5.9 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.53 | | |
| Actuated Cycle Length (s) | 120.0 | Sum of lost time (s) | 12.4 |
| Intersection Capacity Utilization | 66.0% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings
5: Wonderland Road S & Viscount Rd

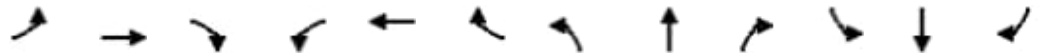
10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 153 | 120 | 176 | 71 | 131 | 86 | 237 | 861 | 42 | 60 | 1005 | 147 |
| Future Volume (vph) | 153 | 120 | 176 | 71 | 131 | 86 | 237 | 861 | 42 | 60 | 1005 | 147 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 40.0 | | 95.0 | 30.0 | | 30.0 | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | 0.98 | | 0.89 | 0.92 | 0.98 | | | | 0.89 | 0.98 | | 0.95 |
| Frt | | | 0.850 | | 0.940 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 1881 | 1567 | 1736 | 3176 | 0 | 1770 | 3438 | 1509 | 1719 | 3505 | 1468 |
| Flt Permitted | 0.596 | | | 0.541 | | | 0.079 | | | 0.285 | | |
| Satd. Flow (perm) | 1090 | 1881 | 1398 | 914 | 3176 | 0 | 147 | 3438 | 1340 | 508 | 3505 | 1397 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 195 | | 100 | | | | 105 | | | 105 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 157.9 | | | 309.4 | | | 1206.3 | | | 158.8 | |
| Travel Time (s) | | 11.4 | | | 22.3 | | | 86.9 | | | 11.4 | |
| Confl. Peds. (#/hr) | 26 | | 98 | 98 | | 26 | 28 | | 44 | 44 | | 28 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 2 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 4% | 8% | 1% | 2% | 5% | 7% | 5% | 3% | 10% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 178 | 140 | 205 | 83 | 152 | 100 | 276 | 1001 | 49 | 70 | 1169 | 171 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 178 | 140 | 205 | 83 | 252 | 0 | 276 | 1001 | 49 | 70 | 1169 | 171 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.03 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings
5: Wonderland Road S & Viscount Rd

10-26-2022

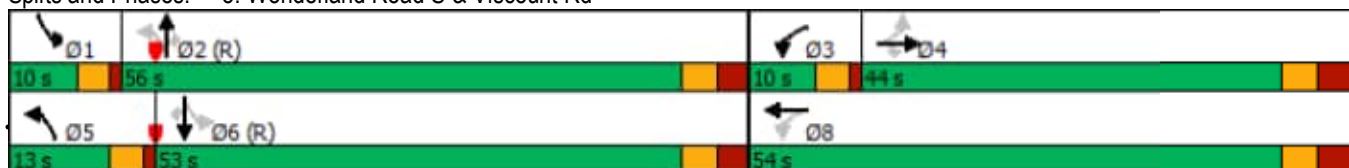


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | | 13.0 | 56.0 | 56.0 | 10.0 | 53.0 | 53.0 |
| Total Split (%) | 36.7% | 36.7% | 36.7% | 8.3% | 45.0% | | 10.8% | 46.7% | 46.7% | 8.3% | 44.2% | 44.2% |
| Maximum Green (s) | 37.5 | 37.5 | 37.5 | 6.0 | 47.5 | | 9.0 | 50.0 | 50.0 | 6.0 | 47.0 | 47.0 |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | None | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | 7.0 | | | 7.0 | 7.0 | | 7.0 | 7.0 |
| Flash Dont Walk (s) | 29.0 | 29.0 | 29.0 | | 29.0 | | | 21.0 | 21.0 | | 21.0 | 21.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | 0 | | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 25.1 | 25.1 | 25.1 | 35.6 | 33.1 | | 76.2 | 65.2 | 65.2 | 56.4 | 47.3 | 47.3 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | 0.30 | 0.28 | | 0.64 | 0.54 | 0.54 | 0.47 | 0.39 | 0.39 |
| v/c Ratio | 0.78 | 0.36 | 0.46 | 0.27 | 0.27 | | 0.68 | 0.54 | 0.06 | 0.23 | 0.85 | 0.28 |
| Control Delay | 64.2 | 39.1 | 9.8 | 30.0 | 18.7 | | 42.6 | 23.4 | 3.8 | 14.6 | 38.0 | 9.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Total Delay | 64.2 | 39.1 | 9.8 | 30.0 | 18.7 | | 42.6 | 23.4 | 3.8 | 14.6 | 38.9 | 9.4 |
| LOS | E | D | A | C | B | | D | C | A | B | D | A |
| Approach Delay | | 36.1 | | | 21.5 | | | 26.7 | | | 34.1 | |
| Approach LOS | | D | | | C | | | C | | | C | |

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 75 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 30.5
 Intersection LOS: C
 Intersection Capacity Utilization 91.3%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Timings

5: Wonderland Road S & Viscount Rd

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↑ | ↗ | ↖ | ↕ | ↖ | ↕ | ↗ | ↖ | ↕ | ↗ |
| Traffic Volume (vph) | 153 | 120 | 176 | 71 | 131 | 237 | 861 | 42 | 60 | 1005 | 147 |
| Future Volume (vph) | 153 | 120 | 176 | 71 | 131 | 237 | 861 | 42 | 60 | 1005 | 147 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | 13.0 | 56.0 | 56.0 | 10.0 | 53.0 | 53.0 |
| Total Split (%) | 36.7% | 36.7% | 36.7% | 8.3% | 45.0% | 10.8% | 46.7% | 46.7% | 8.3% | 44.2% | 44.2% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 25.1 | 25.1 | 25.1 | 35.6 | 33.1 | 76.2 | 65.2 | 65.2 | 56.4 | 47.3 | 47.3 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | 0.30 | 0.28 | 0.64 | 0.54 | 0.54 | 0.47 | 0.39 | 0.39 |
| v/c Ratio | 0.78 | 0.36 | 0.46 | 0.27 | 0.27 | 0.68 | 0.54 | 0.06 | 0.23 | 0.85 | 0.28 |
| Control Delay | 64.2 | 39.1 | 9.8 | 30.0 | 18.7 | 42.6 | 23.4 | 3.8 | 14.6 | 38.0 | 9.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Total Delay | 64.2 | 39.1 | 9.8 | 30.0 | 18.7 | 42.6 | 23.4 | 3.8 | 14.6 | 38.9 | 9.4 |
| LOS | E | D | A | C | B | D | C | A | B | D | A |
| Approach Delay | | 36.1 | | | 21.5 | | 26.7 | | | 34.1 | |
| Approach LOS | | D | | | C | | C | | | C | |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 75 (63%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 30.5
 Intersection Capacity Utilization 91.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Queues

5: Wonderland Road S & Viscount Rd

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|-------|---------|--------|------|------|-------|------|
| Lane Group Flow (vph) | 178 | 140 | 205 | 83 | 252 | 276 | 1001 | 49 | 70 | 1169 | 171 |
| v/c Ratio | 0.78 | 0.36 | 0.46 | 0.27 | 0.27 | 0.68 | 0.54 | 0.06 | 0.23 | 0.85 | 0.28 |
| Control Delay | 64.2 | 39.1 | 9.8 | 30.0 | 18.7 | 42.6 | 23.4 | 3.8 | 14.6 | 38.0 | 9.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Total Delay | 64.2 | 39.1 | 9.8 | 30.0 | 18.7 | 42.6 | 23.4 | 3.8 | 14.6 | 38.9 | 9.4 |
| Queue Length 50th (m) | 42.8 | 29.7 | 3.0 | 14.8 | 14.7 | 56.7 | 71.3 | 0.0 | 5.1 | 158.4 | 5.1 |
| Queue Length 95th (m) | 58.6 | m40.2 | 10.0 | 22.7 | 20.7 | m#113.3 | 126.5 | m3.3 | 9.8 | 173.7 | 12.0 |
| Internal Link Dist (m) | | 133.9 | | | 285.4 | | 1182.3 | | | 134.8 | |
| Turn Bay Length (m) | 40.0 | | 95.0 | 30.0 | | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Base Capacity (vph) | 340 | 587 | 570 | 312 | 1317 | 406 | 1867 | 775 | 312 | 1380 | 614 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 63 | 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 | 0.52 | 0.24 | 0.36 | 0.27 | 0.19 | 0.68 | 0.54 | 0.06 | 0.22 | 0.89 | 0.28 |

Intersection Summary

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.

HCM Signalized Intersection Capacity Analysis

5: Wonderland Road S & Viscount Rd

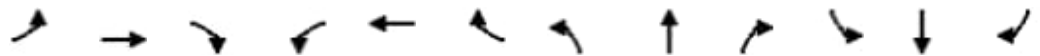
10-26-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 153 | 120 | 176 | 71 | 131 | 86 | 237 | 861 | 42 | 60 | 1005 | 147 |
| Future Volume (vph) | 153 | 120 | 176 | 71 | 131 | 86 | 237 | 861 | 42 | 60 | 1005 | 147 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.89 | 1.00 | 0.98 | | 1.00 | 1.00 | 0.89 | 1.00 | 1.00 | 0.95 |
| Flpb, ped/bikes | 0.98 | 1.00 | 1.00 | 0.96 | 1.00 | | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.94 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1737 | 1881 | 1398 | 1669 | 3178 | | 1770 | 3438 | 1340 | 1709 | 3505 | 1397 |
| Flt Permitted | 0.60 | 1.00 | 1.00 | 0.54 | 1.00 | | 0.08 | 1.00 | 1.00 | 0.28 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1089 | 1881 | 1398 | 951 | 3178 | | 148 | 3438 | 1340 | 512 | 3505 | 1397 |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Adj. Flow (vph) | 178 | 140 | 205 | 83 | 152 | 100 | 276 | 1001 | 49 | 70 | 1169 | 171 |
| RTOR Reduction (vph) | 0 | 0 | 154 | 0 | 72 | 0 | 0 | 0 | 23 | 0 | 0 | 64 |
| Lane Group Flow (vph) | 178 | 140 | 51 | 83 | 180 | 0 | 276 | 1001 | 26 | 70 | 1169 | 107 |
| Confl. Peds. (#/hr) | 26 | | 98 | 98 | | 26 | 28 | | 44 | 44 | | 28 |
| Confl. Bikes (#/hr) | | | | | | 1 | | | | | | 2 |
| Heavy Vehicles (%) | 2% | 1% | 1% | 4% | 8% | 1% | 2% | 5% | 7% | 5% | 3% | 10% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Actuated Green, G (s) | 25.1 | 25.1 | 25.1 | 33.9 | 33.9 | | 73.6 | 63.6 | 63.6 | 52.5 | 46.5 | 46.5 |
| Effective Green, g (s) | 25.1 | 25.1 | 25.1 | 33.9 | 33.9 | | 73.6 | 63.6 | 63.6 | 52.5 | 46.5 | 46.5 |
| Actuated g/C Ratio | 0.21 | 0.21 | 0.21 | 0.28 | 0.28 | | 0.61 | 0.53 | 0.53 | 0.44 | 0.39 | 0.39 |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 227 | 393 | 292 | 297 | 897 | | 403 | 1822 | 710 | 283 | 1358 | 541 |
| v/s Ratio Prot | | 0.07 | | c0.01 | 0.06 | | c0.13 | 0.29 | | 0.01 | c0.33 | |
| v/s Ratio Perm | c0.16 | | 0.04 | 0.07 | | | 0.29 | | 0.02 | 0.10 | | 0.08 |
| v/c Ratio | 0.78 | 0.36 | 0.17 | 0.28 | 0.20 | | 0.68 | 0.55 | 0.04 | 0.25 | 0.86 | 0.20 |
| Uniform Delay, d1 | 44.9 | 40.5 | 38.9 | 32.6 | 32.7 | | 30.8 | 18.7 | 13.5 | 19.8 | 33.8 | 24.4 |
| Progression Factor | 0.96 | 0.95 | 1.14 | 1.00 | 1.00 | | 1.22 | 1.07 | 1.00 | 1.07 | 0.95 | 0.82 |
| Incremental Delay, d2 | 15.6 | 0.5 | 0.3 | 0.5 | 0.1 | | 4.4 | 1.1 | 0.1 | 0.4 | 6.7 | 0.7 |
| Delay (s) | 58.6 | 38.9 | 44.7 | 33.2 | 32.9 | | 42.0 | 21.2 | 13.6 | 21.7 | 38.8 | 20.8 |
| Level of Service | E | D | D | C | C | | D | C | B | C | D | C |
| Approach Delay (s) | | 47.9 | | | 32.9 | | | 25.2 | | | 35.8 | |
| Approach LOS | | D | | | C | | | C | | | D | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 33.4 | | | | | | | | | C |
| HCM 2000 Volume to Capacity ratio | | | 0.78 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | | | | | 20.5 | | |
| Intersection Capacity Utilization | | | 91.3% | | | | | | | | | F |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
6: Wonderland Road S & Southdale Road W

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 123 | 325 | 38 | 74 | 226 | 247 | 58 | 588 | 28 | 330 | 756 | 63 |
| Future Volume (vph) | 123 | 325 | 38 | 74 | 226 | 247 | 58 | 588 | 28 | 330 | 756 | 63 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 35.0 | | 35.0 | 80.0 | | 0.0 | 75.0 | | 0.0 | 35.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | | 0.97 | 0.99 | 0.98 | | 0.99 | 1.00 | | 0.99 | 1.00 | |
| Frt | | | 0.850 | | 0.922 | | | 0.993 | | | 0.988 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 3574 | 1429 | 1736 | 3133 | 0 | 1583 | 3255 | 0 | 1719 | 3429 | 0 |
| Flt Permitted | 0.208 | | | 0.397 | | | 0.313 | | | 0.286 | | |
| Satd. Flow (perm) | 381 | 3574 | 1390 | 719 | 3133 | 0 | 519 | 3255 | 0 | 513 | 3429 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 137 | | 239 | | | 4 | | | 9 | |
| Link Speed (k/h) | | 60 | | | 60 | | | 60 | | | 60 | |
| Link Distance (m) | | 446.9 | | | 385.1 | | | 438.6 | | | 1206.3 | |
| Travel Time (s) | | 26.8 | | | 23.1 | | | 26.3 | | | 72.4 | |
| Confl. Peds. (#/hr) | 17 | | 14 | 14 | | 17 | 15 | | 27 | 27 | | 15 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 1% | 13% | 4% | 4% | 5% | 14% | 9% | 29% | 5% | 3% | 13% |
| Adj. Flow (vph) | 137 | 361 | 42 | 82 | 251 | 274 | 64 | 653 | 31 | 367 | 840 | 70 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 137 | 361 | 42 | 82 | 525 | 0 | 64 | 684 | 0 | 367 | 910 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |

Lanes, Volumes, Timings
6: Wonderland Road S & Southdale Road W

10-26-2022

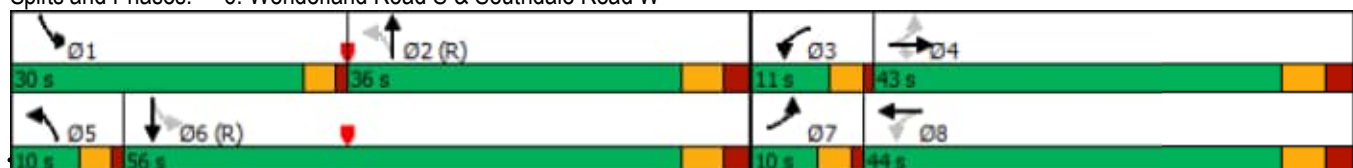


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | | 9.0 | 35.1 | | 9.0 | 35.1 | |
| Total Split (s) | 10.0 | 43.0 | 43.0 | 11.0 | 44.0 | | 10.0 | 36.0 | | 30.0 | 56.0 | |
| Total Split (%) | 8.3% | 35.8% | 35.8% | 9.2% | 36.7% | | 8.3% | 30.0% | | 25.0% | 46.7% | |
| Maximum Green (s) | 6.0 | 36.4 | 36.4 | 7.0 | 37.4 | | 6.0 | 29.9 | | 26.0 | 49.9 | |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | | 3.0 | 3.7 | | 3.0 | 3.7 | |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | | 1.0 | 2.4 | | 1.0 | 2.4 | |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | | None | C-Max | | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | | | 7.0 | | | 7.0 | |
| Flash Dont Walk (s) | | 25.0 | 25.0 | | 25.0 | | | 22.0 | | | 22.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | 0 | | | 0 | |
| Act Effct Green (s) | 26.6 | 19.2 | 19.2 | 27.5 | 18.0 | | 61.6 | 52.3 | | 81.4 | 70.0 | |
| Actuated g/C Ratio | 0.22 | 0.16 | 0.16 | 0.23 | 0.15 | | 0.51 | 0.44 | | 0.68 | 0.58 | |
| v/c Ratio | 0.90 | 0.63 | 0.12 | 0.37 | 0.78 | | 0.19 | 0.48 | | 0.63 | 0.45 | |
| Control Delay | 89.4 | 52.3 | 0.8 | 38.4 | 34.4 | | 11.6 | 27.8 | | 32.3 | 9.7 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 89.4 | 52.3 | 0.8 | 38.4 | 34.4 | | 11.6 | 27.8 | | 32.3 | 9.7 | |
| LOS | F | D | A | D | C | | B | C | | C | A | |
| Approach Delay | | 57.7 | | | 35.0 | | | 26.4 | | | 16.2 | |
| Approach LOS | | E | | | C | | | C | | | B | |

Intersection Summary

| | |
|-----------------------------------|-----------------------------------------------------------------|
| Area Type: | Other |
| Cycle Length: | 120 |
| Actuated Cycle Length: | 120 |
| Offset: | 34 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green |
| Natural Cycle: | 95 |
| Control Type: | Actuated-Coordinated |
| Maximum v/c Ratio: | 0.90 |
| Intersection Signal Delay: | 29.3 |
| Intersection LOS: | C |
| Intersection Capacity Utilization | 86.6% |
| ICU Level of Service | E |
| Analysis Period (min) | 15 |

Splits and Phases: 6: Wonderland Road S & Southdale Road W

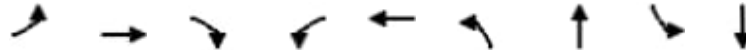


FT AM 10:17 pm 10-13-2022

Timings

6: Wonderland Road S & Southdale Road W

10-26-2022

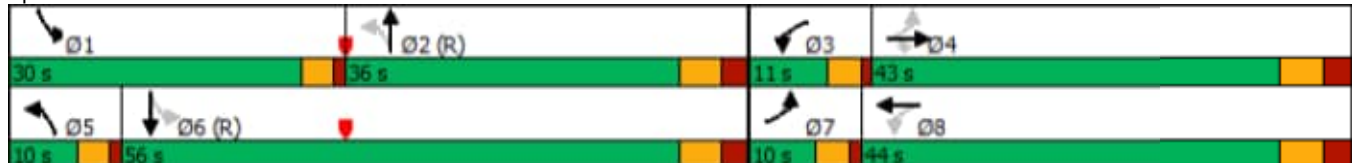


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↶ | ↷ | ↷ | ↶ | ↷ | ↶ | ↷ | ↶ | ↷ |
| Traffic Volume (vph) | 123 | 325 | 38 | 74 | 226 | 58 | 588 | 330 | 756 |
| Future Volume (vph) | 123 | 325 | 38 | 74 | 226 | 58 | 588 | 330 | 756 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | 9.0 | 35.1 | 9.0 | 35.1 |
| Total Split (s) | 10.0 | 43.0 | 43.0 | 11.0 | 44.0 | 10.0 | 36.0 | 30.0 | 56.0 |
| Total Split (%) | 8.3% | 35.8% | 35.8% | 9.2% | 36.7% | 8.3% | 30.0% | 25.0% | 46.7% |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | 3.0 | 3.7 | 3.0 | 3.7 |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 1.0 | 2.4 | 1.0 | 2.4 |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 4.0 | 6.1 | 4.0 | 6.1 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | None | C-Max |
| Act Effct Green (s) | 26.6 | 19.2 | 19.2 | 27.5 | 18.0 | 61.6 | 52.3 | 81.4 | 70.0 |
| Actuated g/C Ratio | 0.22 | 0.16 | 0.16 | 0.23 | 0.15 | 0.51 | 0.44 | 0.68 | 0.58 |
| v/c Ratio | 0.90 | 0.63 | 0.12 | 0.37 | 0.78 | 0.19 | 0.48 | 0.63 | 0.45 |
| Control Delay | 89.4 | 52.3 | 0.8 | 38.4 | 34.4 | 11.6 | 27.8 | 32.3 | 9.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 89.4 | 52.3 | 0.8 | 38.4 | 34.4 | 11.6 | 27.8 | 32.3 | 9.7 |
| LOS | F | D | A | D | C | B | C | C | A |
| Approach Delay | | 57.7 | | | 35.0 | | 26.4 | | 16.2 |
| Approach LOS | | E | | | C | | C | | B |

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 34 (28%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.90
 Intersection Signal Delay: 29.3
 Intersection Capacity Utilization 86.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

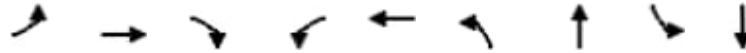
Splits and Phases: 6: Wonderland Road S & Southdale Road W



Queues

6: Wonderland Road S & Southdale Road W

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|------|------|-------|------|-------|-------|--------|
| Lane Group Flow (vph) | 137 | 361 | 42 | 82 | 525 | 64 | 684 | 367 | 910 |
| v/c Ratio | 0.90 | 0.63 | 0.12 | 0.37 | 0.78 | 0.19 | 0.48 | 0.63 | 0.45 |
| Control Delay | 89.4 | 52.3 | 0.8 | 38.4 | 34.4 | 11.6 | 27.8 | 32.3 | 9.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 89.4 | 52.3 | 0.8 | 38.4 | 34.4 | 11.6 | 27.8 | 32.3 | 9.7 |
| Queue Length 50th (m) | 27.4 | 45.3 | 0.0 | 15.9 | 36.3 | 4.9 | 62.6 | 50.8 | 25.1 |
| Queue Length 95th (m) | #47.4 | 58.8 | 0.0 | 27.8 | 53.7 | 11.4 | 99.1 | m72.2 | 49.9 |
| Internal Link Dist (m) | | 422.9 | | | 361.1 | | 414.6 | | 1182.3 |
| Turn Bay Length (m) | 35.0 | | 35.0 | 80.0 | | 75.0 | | 35.0 | |
| Base Capacity (vph) | 153 | 1084 | 517 | 224 | 1140 | 331 | 1420 | 622 | 2003 |
| 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 | 0.90 | 0.33 | 0.08 | 0.37 | 0.46 | 0.19 | 0.48 | 0.59 | 0.45 |

Intersection Summary

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.

HCM Signalized Intersection Capacity Analysis

6: Wonderland Road S & Southdale Road W






















10-26-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   | |  |   | |  |   |   |
| Traffic Volume (vph) | 123 | 325 | 38 | 74 | 226 | 247 | 58 | 588 | 28 | 330 | 756 | 63 |
| Future Volume (vph) | 123 | 325 | 38 | 74 | 226 | 247 | 58 | 588 | 28 | 330 | 756 | 63 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.92 | | 1.00 | 0.99 | | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1750 | 3574 | 1390 | 1730 | 3132 | | 1581 | 3256 | | 1715 | 3431 | |
| Flt Permitted | 0.21 | 1.00 | 1.00 | 0.40 | 1.00 | | 0.31 | 1.00 | | 0.29 | 1.00 | |
| Satd. Flow (perm) | 384 | 3574 | 1390 | 722 | 3132 | | 522 | 3256 | | 515 | 3431 | |
| Peak-hour factor, PHF | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 137 | 361 | 42 | 82 | 251 | 274 | 64 | 653 | 31 | 367 | 840 | 70 |
| RTOR Reduction (vph) | 0 | 0 | 35 | 0 | 202 | 0 | 0 | 2 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 137 | 361 | 7 | 82 | 323 | 0 | 64 | 682 | 0 | 367 | 906 | 0 |
| Confl. Peds. (#/hr) | 17 | | 14 | 14 | | 17 | 15 | | 27 | 27 | | 15 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Heavy Vehicles (%) | 3% | 1% | 13% | 4% | 4% | 5% | 14% | 9% | 29% | 5% | 3% | 13% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 25.2 | 19.2 | 19.2 | 24.4 | 18.8 | | 57.6 | 51.5 | | 78.5 | 68.4 | |
| Effective Green, g (s) | 25.2 | 19.2 | 19.2 | 24.4 | 18.8 | | 57.6 | 51.5 | | 78.5 | 68.4 | |
| Actuated g/C Ratio | 0.21 | 0.16 | 0.16 | 0.20 | 0.16 | | 0.48 | 0.43 | | 0.65 | 0.57 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 148 | 571 | 222 | 193 | 490 | | 304 | 1397 | | 566 | 1955 | |
| v/s Ratio Prot | c0.05 | 0.10 | | 0.02 | 0.10 | | 0.01 | 0.21 | | c0.12 | 0.26 | |
| v/s Ratio Perm | c0.15 | | 0.00 | 0.07 | | | 0.09 | | | c0.30 | | |
| v/c Ratio | 0.93 | 0.63 | 0.03 | 0.42 | 0.66 | | 0.21 | 0.49 | | 0.65 | 0.46 | |
| Uniform Delay, d1 | 44.3 | 47.1 | 42.5 | 40.1 | 47.6 | | 16.9 | 24.7 | | 11.1 | 15.1 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 3.30 | 0.59 | |
| Incremental Delay, d2 | 51.8 | 2.3 | 0.1 | 1.5 | 3.3 | | 0.3 | 1.2 | | 1.7 | 0.5 | |
| Delay (s) | 96.1 | 49.4 | 42.6 | 41.6 | 50.9 | | 17.3 | 26.0 | | 38.3 | 9.4 | |
| Level of Service | F | D | D | D | D | | B | C | | D | A | |
| Approach Delay (s) | | 60.7 | | | 49.7 | | | 25.2 | | | 17.7 | |
| Approach LOS | | E | | | D | | | C | | | B | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 32.9 | | | HCM 2000 Level of Service | | | | C | | |
| HCM 2000 Volume to Capacity ratio | | | 0.74 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | Sum of lost time (s) | | 20.7 | | | | |
| Intersection Capacity Utilization | | | 86.6% | | | ICU Level of Service | | | | E | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c | Critical Lane Group | | | | | | | | | | | |

Lanes, Volumes, Timings

7: Saunders School Access/Mall Access South (E) & Viscount Rd

10-26-2022






















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|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (vph) | 5 | 300 | 45 | 146 | 327 | 30 | 9 | 1 | 95 | 7 | 1 | 4 |
| Future Volume (vph) | 5 | 300 | 45 | 146 | 327 | 30 | 9 | 1 | 95 | 7 | 1 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 30.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.981 | | | | 0.850 | | 0.851 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 1743 | 0 | 1805 | 1827 | 1214 | 1805 | 1617 | 0 | 1399 | 0 | 1615 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 1743 | 0 | 1805 | 1827 | 1214 | 1805 | 1617 | 0 | 1399 | 0 | 1615 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | 20 | |
| Link Distance (m) | | 134.9 | | | 157.9 | | | 74.1 | | | 83.9 | |
| Travel Time (s) | | 12.1 | | | 14.2 | | | 13.3 | | | 15.1 | |
| Confl. Peds. (#/hr) | 9 | | 17 | 17 | | 9 | 67 | | 26 | 26 | | 67 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.67 | 0.67 | 0.67 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 0% | 8% | 0% | 0% | 4% | 33% | 0% | 0% | 0% | 29% | 0% | 0% |
| Adj. Flow (vph) | 6 | 349 | 52 | 170 | 380 | 35 | 13 | 1 | 142 | 8 | 1 | 5 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 6 | 401 | 0 | 170 | 380 | 35 | 13 | 143 | 0 | 8 | 1 | 5 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | |
|----------------------------------------|------------------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization Err% | ICU Level of Service H |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

7: Saunders School Access/Mall Access South (E) & Viscount Rd

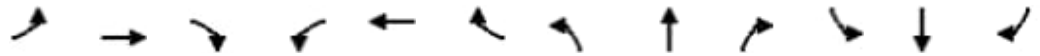
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| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (veh/h) | 5 | 300 | 45 | 146 | 327 | 30 | 9 | 1 | 95 | 7 | 1 | 4 |
| Future Volume (Veh/h) | 5 | 300 | 45 | 146 | 327 | 30 | 9 | 1 | 95 | 7 | 1 | 4 |
| Sign Control | Free | | | Free | | | Stop | | | Stop | | |
| Grade | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.67 | 0.67 | 0.67 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 6 | 349 | 52 | 170 | 380 | 35 | 13 | 1 | 142 | 8 | 1 | 5 |
| Pedestrians | 67 | | | 26 | | | 17 | | | 9 | | |
| Lane Width (m) | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | | |
| Walking Speed (m/s) | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | | |
| Percent Blockage | 6 | | | 2 | | | 1 | | | 1 | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | None | | | None | | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (m) | 135 | | | 158 | | | | | | | | |
| pX, platoon unblocked | 1.00 | | | | | | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| vC, conflicting volume | 424 | 418 | | | 1196 | | | 1168 | 418 | 1258 | 1159 | 456 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 420 | 418 | | | 1195 | | | 1167 | 418 | 1258 | 1158 | 452 |
| tC, single (s) | 4.1 | 4.1 | | | 7.1 | | | 6.5 | 6.2 | 7.4 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | 2.2 | | | 3.5 | | | 4.0 | 3.3 | 3.8 | 4.0 | 3.3 |
| p0 queue free % | 99 | 85 | | | 90 | | | 99 | 77 | 90 | 99 | 99 |
| cM capacity (veh/h) | 1137 | 1136 | | | 131 | | | 161 | 617 | 84 | 163 | 571 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | NB 2 | SB 1 | SB 2 | | | |
| Volume Total | 6 | 401 | 170 | 380 | 35 | 13 | 143 | 8 | 6 | | | |
| Volume Left | 6 | 0 | 170 | 0 | 0 | 13 | 0 | 8 | 0 | | | |
| Volume Right | 0 | 52 | 0 | 0 | 35 | 0 | 142 | 0 | 5 | | | |
| cSH | 1137 | 1700 | 1136 | 1700 | 1700 | 131 | 605 | 84 | 403 | | | |
| Volume to Capacity | 0.01 | 0.24 | 0.15 | 0.22 | 0.02 | 0.10 | 0.24 | 0.10 | 0.01 | | | |
| Queue Length 95th (m) | 0.1 | 0.0 | 4.2 | 0.0 | 0.0 | 2.6 | 7.3 | 2.5 | 0.4 | | | |
| Control Delay (s) | 8.2 | 0.0 | 8.7 | 0.0 | 0.0 | 35.6 | 12.8 | 52.5 | 14.1 | | | |
| Lane LOS | A | | A | | | E | B | F | B | | | |
| Approach Delay (s) | 0.1 | 2.5 | | 14.7 | | | 36.0 | | | | | |
| Approach LOS | | | B | | | E | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | 3.7 | | | | | | | | | | | |
| Intersection Capacity Utilization | Err% | | ICU Level of Service | | | H | | | | | | |
| Analysis Period (min) | 15 | | | | | | | | | | | |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-26-2022

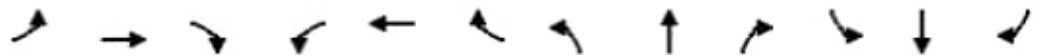


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 40 | 210 | 147 | 110 | 70 | 165 | 68 | 3 | 87 | 52 | 11 | 12 |
| Future Volume (vph) | 40 | 210 | 147 | 110 | 70 | 165 | 68 | 3 | 87 | 52 | 11 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 50.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 0.98 | 0.97 | | 0.97 | | 0.96 | 0.97 | 0.89 | | | 0.93 | 0.94 |
| Frt | | 0.938 | | | | 0.850 | | 0.855 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | | 0.961 | |
| Satd. Flow (prot) | 1719 | 1657 | 0 | 1736 | 1743 | 1568 | 1752 | 1349 | 0 | 0 | 1638 | 1214 |
| Flt Permitted | 0.704 | | | 0.361 | | | 0.709 | | | | 0.743 | |
| Satd. Flow (perm) | 1244 | 1657 | 0 | 641 | 1743 | 1508 | 1262 | 1349 | 0 | 0 | 1181 | 1144 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 64 | | | | 192 | | 132 | | | | 49 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | | 20 |
| Link Distance (m) | | 153.2 | | | 134.9 | | | 64.6 | | | | 87.9 |
| Travel Time (s) | | 13.8 | | | 12.1 | | | 11.6 | | | | 15.8 |
| Confl. Peds. (#/hr) | 28 | | 38 | 38 | | 28 | 36 | | 93 | 93 | | 36 |
| Confl. Bikes (#/hr) | | | 2 | | | | | | | | | |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.66 | 0.66 | 0.66 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 5% | 4% | 4% | 4% | 9% | 3% | 3% | 0% | 7% | 12% | 9% | 33% |
| Adj. Flow (vph) | 47 | 244 | 171 | 128 | 81 | 192 | 103 | 5 | 132 | 60 | 13 | 14 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 47 | 415 | 0 | 128 | 81 | 192 | 103 | 137 | 0 | 0 | 73 | 14 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | Yes | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |
| Detector 2 Channel | | | | | | | | | | | | |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-26-2022

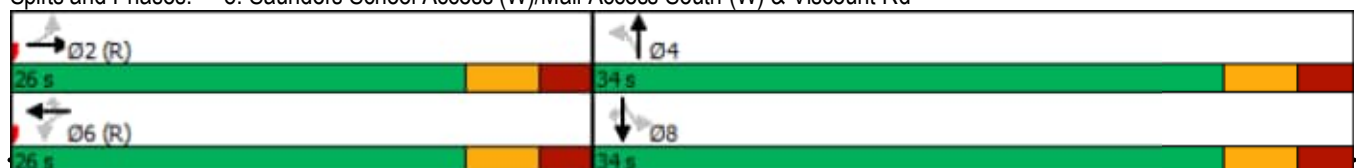


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-----|-------|-------|-------|
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Detector Phase | 2 | 2 | | 6 | 6 | 6 | 4 | 4 | | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 26.0 | 26.0 | | 26.0 | 26.0 | 26.0 | 34.0 | 34.0 | | 34.0 | 34.0 | 34.0 |
| Total Split (%) | 43.3% | 43.3% | | 43.3% | 43.3% | 43.3% | 56.7% | 56.7% | | 56.7% | 56.7% | 56.7% |
| Maximum Green (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | 28.1 | 28.1 | 28.1 |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | | 2.6 | 2.6 | 2.6 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | C-Max | C-Max | | C-Max | C-Max | C-Max | Max | Max | | Max | Max | Max |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 | 19.0 | 19.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | 28.1 | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.34 | 0.34 | | 0.34 | 0.34 | 0.34 | 0.47 | 0.47 | | 0.47 | 0.47 | 0.47 |
| v/c Ratio | 0.11 | 0.69 | | 0.59 | 0.14 | 0.30 | 0.17 | 0.20 | | 0.13 | 0.02 | 0.02 |
| Control Delay | 14.6 | 21.6 | | 32.6 | 15.0 | 7.2 | 10.3 | 3.0 | | 9.9 | 0.2 | 0.2 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | 14.6 | 21.6 | | 32.6 | 15.0 | 7.2 | 10.3 | 3.0 | | 9.9 | 0.2 | 0.2 |
| LOS | B | C | | C | B | A | B | A | | A | A | A |
| Approach Delay | | 20.9 | | | 16.9 | | | 6.1 | | | 8.4 | |
| Approach LOS | | C | | | B | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 47 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 15.7
 Intersection LOS: B
 Intersection Capacity Utilization 77.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-26-2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↗ | ↘ | ↗ | ↖ | ↗ | ↗ | ↘ | | ↖ | ↗ |
| Traffic Volume (vph) | 40 | 210 | 110 | 70 | 165 | 68 | 3 | 52 | 11 | 12 |
| Future Volume (vph) | 40 | 210 | 110 | 70 | 165 | 68 | 3 | 52 | 11 | 12 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 2 | | 6 | | | 4 | | 8 | |
| Permitted Phases | 2 | | 6 | | 6 | 4 | | 8 | | 8 |
| Detector Phase | 2 | 2 | 6 | 6 | 6 | 4 | 4 | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 26.0 | 26.0 | 26.0 | 26.0 | 26.0 | 34.0 | 34.0 | 34.0 | 34.0 | 34.0 |
| Total Split (%) | 43.3% | 43.3% | 43.3% | 43.3% | 43.3% | 56.7% | 56.7% | 56.7% | 56.7% | 56.7% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| 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) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | C-Max | C-Max | Max | Max | Max | Max | Max |
| Act Effct Green (s) | 20.3 | 20.3 | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.47 | 0.47 | | 0.47 | 0.47 |
| v/c Ratio | 0.11 | 0.69 | 0.59 | 0.14 | 0.30 | 0.17 | 0.20 | | 0.13 | 0.02 |
| Control Delay | 14.6 | 21.6 | 32.6 | 15.0 | 7.2 | 10.3 | 3.0 | | 9.9 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 14.6 | 21.6 | 32.6 | 15.0 | 7.2 | 10.3 | 3.0 | | 9.9 | 0.2 |
| LOS | B | C | C | B | A | B | A | | A | A |
| Approach Delay | | 20.9 | | 16.9 | | | 6.1 | | 8.4 | |
| Approach LOS | | C | | B | | | A | | A | |

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

Offset: 47 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 15.7

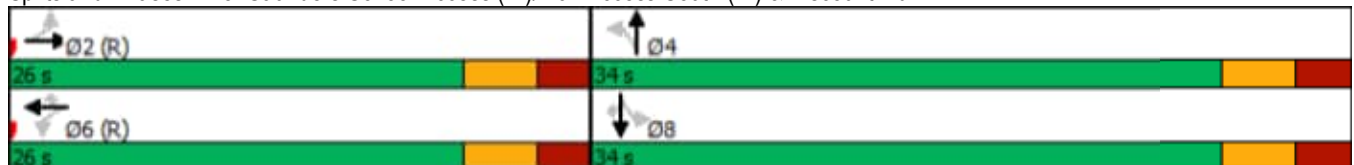
Intersection LOS: B

Intersection Capacity Utilization 77.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Queues

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-26-2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBT | SBR |
|------------------------|------|-------|-------|-------|------|------|------|------|------|
| Lane Group Flow (vph) | 47 | 415 | 128 | 81 | 192 | 103 | 137 | 73 | 14 |
| v/c Ratio | 0.11 | 0.69 | 0.59 | 0.14 | 0.30 | 0.17 | 0.20 | 0.13 | 0.02 |
| Control Delay | 14.6 | 21.6 | 32.6 | 15.0 | 7.2 | 10.3 | 3.0 | 9.9 | 0.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 14.6 | 21.6 | 32.6 | 15.0 | 7.2 | 10.3 | 3.0 | 9.9 | 0.2 |
| Queue Length 50th (m) | 3.7 | 34.0 | 20.2 | 10.9 | 11.2 | 6.5 | 0.3 | 4.5 | 0.0 |
| Queue Length 95th (m) | 9.5 | 58.3 | m34.3 | m16.0 | 24.4 | 10.1 | 3.4 | 10.4 | 0.2 |
| Internal Link Dist (m) | | 129.2 | | 110.9 | | | 40.6 | 63.9 | |
| Turn Bay Length (m) | 30.0 | | 50.0 | | | | | | |
| Base Capacity (vph) | 420 | 602 | 216 | 589 | 637 | 591 | 701 | 553 | 561 |
| 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 | 0.11 | 0.69 | 0.59 | 0.14 | 0.30 | 0.17 | 0.20 | 0.13 | 0.02 |























Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

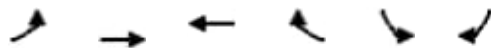
8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-26-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  | |  |  |
| Traffic Volume (vph) | 40 | 210 | 147 | 110 | 70 | 165 | 68 | 3 | 87 | 52 | 11 | 12 |
| Future Volume (vph) | 40 | 210 | 147 | 110 | 70 | 165 | 68 | 3 | 87 | 52 | 11 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Frbp, ped/bikes | 1.00 | 0.97 | | 1.00 | 1.00 | 0.96 | 1.00 | 0.89 | | | 1.00 | 0.94 |
| Flpb, ped/bikes | 0.98 | 1.00 | | 0.97 | 1.00 | 1.00 | 0.97 | 1.00 | | | 0.93 | 1.00 |
| Frt | 1.00 | 0.94 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.86 | | | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | | 0.96 | 1.00 |
| Satd. Flow (prot) | 1678 | 1657 | | 1687 | 1743 | 1508 | 1691 | 1350 | | | 1526 | 1144 |
| Flt Permitted | 0.70 | 1.00 | | 0.36 | 1.00 | 1.00 | 0.71 | 1.00 | | | 0.74 | 1.00 |
| Satd. Flow (perm) | 1244 | 1657 | | 641 | 1743 | 1508 | 1263 | 1350 | | | 1181 | 1144 |
| Peak-hour factor, PHF | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.66 | 0.66 | 0.66 | 0.86 | 0.86 | 0.86 |
| Adj. Flow (vph) | 47 | 244 | 171 | 128 | 81 | 192 | 103 | 5 | 132 | 60 | 13 | 14 |
| RTOR Reduction (vph) | 0 | 42 | 0 | 0 | 0 | 127 | 0 | 70 | 0 | 0 | 0 | 7 |
| Lane Group Flow (vph) | 47 | 373 | 0 | 128 | 81 | 65 | 103 | 67 | 0 | 0 | 73 | 7 |
| Confl. Peds. (#/hr) | 28 | | 38 | 38 | | 28 | 36 | | 93 | 93 | | 36 |
| Confl. Bikes (#/hr) | | | 2 | | | | | | | | | |
| Heavy Vehicles (%) | 5% | 4% | 4% | 4% | 9% | 3% | 3% | 0% | 7% | 12% | 9% | 33% |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Actuated Green, G (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | | 28.1 | 28.1 |
| Effective Green, g (s) | 20.3 | 20.3 | | 20.3 | 20.3 | 20.3 | 28.1 | 28.1 | | | 28.1 | 28.1 |
| Actuated g/C Ratio | 0.34 | 0.34 | | 0.34 | 0.34 | 0.34 | 0.47 | 0.47 | | | 0.47 | 0.47 |
| Clearance Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 420 | 560 | | 216 | 589 | 510 | 591 | 632 | | | 553 | 535 |
| v/s Ratio Prot | | c0.22 | | | 0.05 | | | 0.05 | | | | |
| v/s Ratio Perm | 0.04 | | | 0.20 | | 0.04 | c0.08 | | | | 0.06 | 0.01 |
| v/c Ratio | 0.11 | 0.67 | | 0.59 | 0.14 | 0.13 | 0.17 | 0.11 | | | 0.13 | 0.01 |
| Uniform Delay, d1 | 13.7 | 17.0 | | 16.4 | 13.8 | 13.7 | 9.2 | 8.9 | | | 9.0 | 8.5 |
| Progression Factor | 1.00 | 1.00 | | 1.27 | 1.04 | 3.05 | 1.00 | 1.00 | | | 1.00 | 1.00 |
| Incremental Delay, d2 | 0.5 | 6.1 | | 10.6 | 0.5 | 0.5 | 0.6 | 0.3 | | | 0.5 | 0.0 |
| Delay (s) | 14.2 | 23.1 | | 31.5 | 14.8 | 42.4 | 9.9 | 9.3 | | | 9.5 | 8.6 |
| Level of Service | B | C | | C | B | D | A | A | | | A | A |
| Approach Delay (s) | | 22.2 | | | 33.3 | | | 9.5 | | | 9.4 | |
| Approach LOS | | C | | | C | | | A | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 22.4 | | | | | | | | | C |
| HCM 2000 Volume to Capacity ratio | | | 0.38 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 60.0 | | | | | | 11.6 | | | |
| Intersection Capacity Utilization | | | 77.1% | | | | | | | | | D |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Lanes, Volumes, Timings
 9: Viscount Rd & Woodcrest Rd

10-26-2022



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations | | 4 | 4 | | 4 | |
| Traffic Volume (vph) | 11 | 343 | 123 | 32 | 52 | 21 |
| Future Volume (vph) | 11 | 343 | 123 | 32 | 52 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.972 | | 0.962 | |
| Flt Protected | | 0.998 | | | 0.965 | |
| Satd. Flow (prot) | 0 | 1809 | 1717 | 0 | 1692 | 0 |
| Flt Permitted | | 0.998 | | | 0.965 | |
| Satd. Flow (perm) | 0 | 1809 | 1717 | 0 | 1692 | 0 |
| Link Speed (k/h) | | 40 | 40 | | 50 | |
| Link Distance (m) | | 15.9 | 153.2 | | 195.3 | |
| Travel Time (s) | | 1.4 | 13.8 | | 14.1 | |
| Confl. Peds. (#/hr) | 15 | | | 15 | | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Heavy Vehicles (%) | 0% | 5% | 8% | 6% | 2% | 10% |
| Adj. Flow (vph) | 14 | 445 | 160 | 42 | 68 | 27 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 459 | 202 | 0 | 95 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(m) | | 3.6 | 3.6 | | 3.6 | |
| Link Offset(m) | | 0.0 | 0.0 | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | Yes | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | | 15 | 25 | 15 |
| Sign Control | | Free | Free | | Stop | |

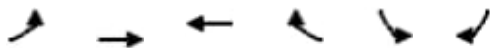
Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 37.8% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

9: Viscount Rd & Woodcrest Rd

10-26-2022



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|-------------|-------------|-------------|------|----------------------|------|
| Lane Configurations | | 4 | 1 | | 2 | |
| Traffic Volume (veh/h) | 11 | 343 | 123 | 32 | 52 | 21 |
| Future Volume (Veh/h) | 11 | 343 | 123 | 32 | 52 | 21 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Hourly flow rate (vph) | 14 | 445 | 160 | 42 | 68 | 27 |
| Pedestrians | | | | | 15 | |
| Lane Width (m) | | | | | 3.6 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 1 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | TWLTL | | | |
| Median storage veh | | | 2 | | | |
| Upstream signal (m) | | 16 | 153 | | | |
| pX, platoon unblocked | | | | | 0.89 | |
| vC, conflicting volume | 217 | | | | 669 | 196 |
| vC1, stage 1 conf vol | | | | | 196 | |
| vC2, stage 2 conf vol | | | | | 473 | |
| vCu, unblocked vol | 217 | | | | 566 | 196 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.3 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.4 |
| p0 queue free % | 99 | | | | 88 | 97 |
| cM capacity (veh/h) | 1348 | | | | 586 | 815 |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 459 | 202 | 95 | | | |
| Volume Left | 14 | 0 | 68 | | | |
| Volume Right | 0 | 42 | 27 | | | |
| cSH | 1348 | 1700 | 636 | | | |
| Volume to Capacity | 0.01 | 0.12 | 0.15 | | | |
| Queue Length 95th (m) | 0.3 | 0.0 | 4.2 | | | |
| Control Delay (s) | 0.3 | 0.0 | 11.6 | | | |
| Lane LOS | A | | B | | | |
| Approach Delay (s) | 0.3 | 0.0 | 11.6 | | | |
| Approach LOS | | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.7 | | | |
| Intersection Capacity Utilization | | | 37.8% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|-------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Traffic Volume (vph) | 0 | 4 | 36 | 23 | 10 | 160 | 106 | 74 | 26 | 42 | 16 | 1 |
| Future Volume (vph) | 0 | 4 | 36 | 23 | 10 | 160 | 106 | 74 | 26 | 42 | 16 | 1 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.879 | | | 0.888 | | | 0.961 | | | 0.998 | |
| Flt Protected | | | | | 0.994 | | 0.950 | | | | 0.966 | |
| Satd. Flow (prot) | 0 | 1626 | 0 | 0 | 1609 | 0 | 1787 | 1690 | 0 | 0 | 1832 | 0 |
| Flt Permitted | | | | | 0.994 | | 0.950 | | | | 0.966 | |
| Satd. Flow (perm) | 0 | 1626 | 0 | 0 | 1609 | 0 | 1787 | 1690 | 0 | 0 | 1832 | 0 |
| Link Speed (k/h) | | 20 | | | 20 | | | 20 | | | 20 | |
| Link Distance (m) | | 78.9 | | | 182.4 | | | 87.9 | | | 68.5 | |
| Travel Time (s) | | 14.2 | | | 32.8 | | | 15.8 | | | 12.3 | |
| Confl. Peds. (#/hr) | 2 | | 17 | 17 | | 2 | | | | | | |
| Confl. Bikes (#/hr) | | | 2 | | | | | | | | | 2 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Heavy Vehicles (%) | 0% | 0% | 3% | 35% | 0% | 0% | 1% | 0% | 31% | 0% | 0% | 0% |
| Adj. Flow (vph) | 0 | 5 | 42 | 27 | 12 | 186 | 123 | 86 | 30 | 49 | 19 | 1 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 47 | 0 | 0 | 225 | 0 | 123 | 116 | 0 | 0 | 69 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |

Intersection Summary

Area Type: Other

Control Type: Unsignalized


















Intersection Capacity Utilization 35.1% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-26-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | |  |  | | |  | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 0 | 4 | 36 | 23 | 10 | 160 | 106 | 74 | 26 | 42 | 16 | 1 |
| Future Volume (vph) | 0 | 4 | 36 | 23 | 10 | 160 | 106 | 74 | 26 | 42 | 16 | 1 |
| Peak Hour Factor | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 | 0.86 |
| Hourly flow rate (vph) | 0 | 5 | 42 | 27 | 12 | 186 | 123 | 86 | 30 | 49 | 19 | 1 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 | | | | | | | |
| Volume Total (vph) | 47 | 225 | 123 | 116 | 69 | | | | | | | |
| Volume Left (vph) | 0 | 27 | 123 | 0 | 49 | | | | | | | |
| Volume Right (vph) | 42 | 186 | 0 | 30 | 1 | | | | | | | |
| Hadj (s) | -0.49 | -0.40 | 0.52 | -0.04 | 0.13 | | | | | | | |
| Departure Headway (s) | 4.5 | 4.3 | 5.7 | 5.2 | 5.1 | | | | | | | |
| Degree Utilization, x | 0.06 | 0.27 | 0.20 | 0.17 | 0.10 | | | | | | | |
| Capacity (veh/h) | 735 | 781 | 602 | 665 | 659 | | | | | | | |
| Control Delay (s) | 7.7 | 8.9 | 8.9 | 8.0 | 8.6 | | | | | | | |
| Approach Delay (s) | 7.7 | 8.9 | 8.5 | | 8.6 | | | | | | | |
| Approach LOS | A | A | A | | A | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Delay | | | 8.6 | | | | | | | | | |
| Level of Service | | | A | | | | | | | | | |
| Intersection Capacity Utilization | | | 35.1% | | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

Lanes, Volumes, Timings
 11: Mall Access South (E) & Internal Mall Rd

10-26-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 58 | 8 | 4 | 184 | 24 | 12 |
| Future Volume (vph) | 58 | 8 | 4 | 184 | 24 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.983 | | | 0.850 | | |
| Flt Protected | | | | 0.999 | 0.950 | |
| Satd. Flow (prot) | 1640 | 0 | 0 | 1898 | 1357 | 1615 |
| Flt Permitted | | | | 0.999 | 0.950 | |
| Satd. Flow (perm) | 1640 | 0 | 0 | 1898 | 1357 | 1615 |
| Link Speed (k/h) | 20 | | | 20 | 20 | |
| Link Distance (m) | 182.4 | | | 55.5 | 83.9 | |
| Travel Time (s) | 32.8 | | | 10.0 | 15.1 | |
| Confl. Peds. (#/hr) | 21 | | 21 | 5 | | 9 |
| Peak Hour Factor | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| Heavy Vehicles (%) | 14% | 13% | 0% | 0% | 33% | 0% |
| Adj. Flow (vph) | 107 | 15 | 7 | 341 | 44 | 22 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 122 | 0 | 0 | 348 | 44 | 22 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | | 0.0 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | 25 | | 15 |
| Sign Control | Stop | | | Stop | Stop | |

Intersection Summary

| | |
|-----------------------------------|------------------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 25.5% |
| | ICU Level of Service A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis
 11: Mall Access South (E) & Internal Mall Rd

10-26-2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | P | | | 4 | 7 | 7 |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 58 | 8 | 4 | 184 | 24 | 12 |
| Future Volume (vph) | 58 | 8 | 4 | 184 | 24 | 12 |
| Peak Hour Factor | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 | 0.54 |
| Hourly flow rate (vph) | 107 | 15 | 7 | 341 | 44 | 22 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 |
|-----------------------|------|------|------|-------|
| Volume Total (vph) | 122 | 348 | 44 | 22 |
| Volume Left (vph) | 0 | 7 | 44 | 0 |
| Volume Right (vph) | 15 | 0 | 0 | 22 |
| Hadj (s) | 0.16 | 0.00 | 1.06 | -0.70 |
| Departure Headway (s) | 4.6 | 4.2 | 6.6 | 4.8 |
| Degree Utilization, x | 0.16 | 0.41 | 0.08 | 0.03 |
| Capacity (veh/h) | 754 | 826 | 507 | 678 |
| Control Delay (s) | 8.5 | 10.2 | 9.0 | 6.8 |
| Approach Delay (s) | 8.5 | 10.2 | 8.3 | |
| Approach LOS | A | B | A | |

| Intersection Summary | | | |
|-----------------------------------|-------|-----|------------------------|
| Delay | | 9.6 | |
| Level of Service | | A | |
| Intersection Capacity Utilization | 25.5% | | ICU Level of Service A |
| Analysis Period (min) | | 15 | |

Lanes, Volumes, Timings
 12: Mall Access East (S) & Internal Mall Road











10-26-2022



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|--------------|-------|-------|------------------------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 200 | 154 | 1 | 71 | 46 | 10 |
| Future Volume (vph) | 200 | 154 | 1 | 71 | 46 | 10 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | 0.850 | 0.867 | | | |
| Flt Protected | 0.950 | | | | | 0.960 |
| Satd. Flow (prot) | 1805 | 1599 | 1486 | 0 | 0 | 1824 |
| Flt Permitted | 0.950 | | | | | 0.960 |
| Satd. Flow (perm) | 1805 | 1599 | 1486 | 0 | 0 | 1824 |
| Link Speed (k/h) | 20 | | 20 | | | 20 |
| Link Distance (m) | 105.0 | | 76.6 | | | 159.1 |
| Travel Time (s) | 18.9 | | 13.8 | | | 28.6 |
| Confl. Peds. (#/hr) | 7 | | | 2 | 2 | |
| Confl. Bikes (#/hr) | | 1 | | | | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 11% | 0% | 0% |
| Adj. Flow (vph) | 220 | 169 | 1 | 78 | 51 | 11 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 220 | 169 | 79 | 0 | 0 | 62 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(m) | 3.6 | | 0.0 | | | 0.0 |
| Link Offset(m) | 0.0 | | 0.0 | | | 0.0 |
| Crosswalk Width(m) | 4.8 | | 4.8 | | | 4.8 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | 15 | | 15 | 25 | |
| Sign Control | Stop | | Stop | | | Stop |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 27.5% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 12: Mall Access East (S) & Internal Mall Road

10-26-2022

| |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | | |  |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 200 | 154 | 1 | 71 | 46 | 10 |
| Future Volume (vph) | 200 | 154 | 1 | 71 | 46 | 10 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Hourly flow rate (vph) | 220 | 169 | 1 | 78 | 51 | 11 |
| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 | | |
| Volume Total (vph) | 220 | 169 | 79 | 62 | | |
| Volume Left (vph) | 220 | 0 | 0 | 51 | | |
| Volume Right (vph) | 0 | 169 | 78 | 0 | | |
| Hadj (s) | 0.50 | -0.68 | -0.41 | 0.16 | | |
| Departure Headway (s) | 5.3 | 4.2 | 4.5 | 5.0 | | |
| Degree Utilization, x | 0.33 | 0.20 | 0.10 | 0.09 | | |
| Capacity (veh/h) | 651 | 840 | 756 | 666 | | |
| Control Delay (s) | 9.7 | 7.0 | 7.9 | 8.5 | | |
| Approach Delay (s) | 8.5 | | 7.9 | 8.5 | | |
| Approach LOS | A | | A | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 8.4 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 27.5% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 13: Internal Mall Road & Mall Access East (N)

10-26-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|-------|------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 28 | 44 | 15 | 126 | 154 | 2 |
| Future Volume (vph) | 28 | 44 | 15 | 126 | 154 | 2 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.918 | | | | 0.998 | |
| Flt Protected | | | 0.950 | | 0.953 | |
| Satd. Flow (prot) | 1717 | 0 | 1687 | 1900 | 1807 | 0 |
| Flt Permitted | | | 0.950 | | 0.953 | |
| Satd. Flow (perm) | 1717 | 0 | 1687 | 1900 | 1807 | 0 |
| Link Speed (k/h) | 20 | | 20 | | 20 | |
| Link Distance (m) | 158.8 | | 100.3 | | 159.1 | |
| Travel Time (s) | 28.6 | | 18.1 | | 28.6 | |
| Confl. Peds. (#/hr) | | | | | | 17 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Heavy Vehicles (%) | 4% | 0% | 7% | 0% | 0% | 0% |
| Adj. Flow (vph) | 36 | 56 | 19 | 162 | 197 | 3 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 92 | 0 | 19 | 162 | 200 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.6 | | 3.6 | | 3.6 | |
| Link Offset(m) | 0.0 | | 0.0 | | 0.0 | |
| Crosswalk Width(m) | 4.8 | | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | | 25 | |
| Sign Control | Stop | | Stop | | Stop | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 24.9% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis
 13: Internal Mall Road & Mall Access East (N)

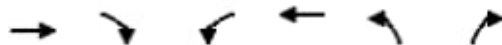
10-26-2022

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------|------|-------|----------------------|------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | P | | ↑ | ↑ | ↑ | |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 28 | 44 | 15 | 126 | 154 | 2 |
| Future Volume (vph) | 28 | 44 | 15 | 126 | 154 | 2 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Hourly flow rate (vph) | 36 | 56 | 19 | 162 | 197 | 3 |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | | |
| Volume Total (vph) | 92 | 19 | 162 | 200 | | |
| Volume Left (vph) | 0 | 19 | 0 | 197 | | |
| Volume Right (vph) | 56 | 0 | 0 | 3 | | |
| Hadj (s) | -0.34 | 0.62 | 0.00 | 0.19 | | |
| Departure Headway (s) | 4.4 | 5.7 | 5.1 | 4.8 | | |
| Degree Utilization, x | 0.11 | 0.03 | 0.23 | 0.26 | | |
| Capacity (veh/h) | 773 | 600 | 676 | 722 | | |
| Control Delay (s) | 8.0 | 7.7 | 8.4 | 9.4 | | |
| Approach Delay (s) | 8.0 | 8.3 | | 9.4 | | |
| Approach LOS | A | A | | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 8.7 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 24.9% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings

14: Viscount Rd

10-26-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|------|-------|-------|-------|
| Lane Configurations | ↑ | | | ↑ | ↘ | |
| Traffic Volume (vph) | 354 | 0 | 0 | 144 | 0 | 0 |
| Future Volume (vph) | 354 | 0 | 0 | 144 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 1810 | 0 | 0 | 1776 | 1863 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 1810 | 0 | 0 | 1776 | 1863 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (k/h) | 40 | | | 40 | 20 | |
| Link Distance (m) | 218.9 | | | 0.0 | 20.6 | |
| Travel Time (s) | 19.7 | | | 0.0 | 3.7 | |
| Confl. Peds. (#/hr) | | | | | 50 | |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Heavy Vehicles (%) | 5% | 2% | 2% | 7% | 2% | 2% |
| Adj. Flow (vph) | 460 | 0 | 0 | 187 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 460 | 0 | 0 | 187 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | | 0.0 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | | 15 | 25 | | 25 | 15 |
| Number of Detectors | 2 | | | 2 | 1 | |
| Detector Template | Thru | | | Thru | Left | |
| Leading Detector (m) | 10.0 | | | 10.0 | 2.0 | |
| Trailing Detector (m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 0.6 | | | 0.6 | 2.0 | |
| Detector 1 Type | Cl+Ex | | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 2 Position(m) | 9.4 | | | 9.4 | | |
| Detector 2 Size(m) | 0.6 | | | 0.6 | | |
| Detector 2 Type | Cl+Ex | | | Cl+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |

Lanes, Volumes, Timings

14: Viscount Rd

10-26-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|-------|-----|-----|-------|-------|-----|
| Detector Phase | 4 | | | 8 | 2 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | | 10.0 | 40.2 | |
| Minimum Split (s) | 14.3 | | | 14.3 | 46.0 | |
| Total Split (s) | 16.0 | | | 16.0 | 46.0 | |
| Total Split (%) | 25.8% | | | 25.8% | 74.2% | |
| Maximum Green (s) | 11.7 | | | 11.7 | 40.2 | |
| Yellow Time (s) | 3.3 | | | 3.3 | 3.3 | |
| All-Red Time (s) | 1.0 | | | 1.0 | 2.5 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | | | 4.3 | 5.8 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 1.0 | |
| Recall Mode | Max | | | Max | None | |
| Walk Time (s) | | | | | 35.0 | |
| Flash Dont Walk (s) | | | | | 5.0 | |
| Pedestrian Calls (#/hr) | | | | | 50 | |
| Act Effect Green (s) | 34.9 | | | 34.9 | | |
| Actuated g/C Ratio | 0.87 | | | 0.87 | | |
| v/c Ratio | 0.29 | | | 0.12 | | |
| Control Delay | 8.1 | | | 7.0 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 8.1 | | | 7.0 | | |
| LOS | A | | | A | | |
| Approach Delay | 8.1 | | | 7.0 | | |
| Approach LOS | A | | | A | | |

Intersection Summary

| | |
|------------------------------------|------------------|
| Area Type: | Other |
| Cycle Length: | 62 |
| Actuated Cycle Length: | 40.2 |
| Natural Cycle: | 70 |
| Control Type: | Semi Act-Uncoord |
| Maximum v/c Ratio: | 0.29 |
| Intersection Signal Delay: | 7.8 |
| Intersection LOS: | A |
| Intersection Capacity Utilization: | 22.2% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Splits and Phases: 14: Viscount Rd



Timings
14: Viscount Rd

10-26-2022

| Lane Group | EBT | WBT | Ø2 |
|----------------------|-------|-------|------|
| Lane Configurations | ↑ | ↑ | |
| Traffic Volume (vph) | 354 | 144 | |
| Future Volume (vph) | 354 | 144 | |
| Turn Type | NA | NA | |
| Protected Phases | 4 | 8 | 2 |
| Permitted Phases | | | |
| Detector Phase | 4 | 8 | |
| Switch Phase | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 40.2 |
| Minimum Split (s) | 14.3 | 14.3 | 46.0 |
| Total Split (s) | 16.0 | 16.0 | 46.0 |
| Total Split (%) | 25.8% | 25.8% | 74% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.0 | 1.0 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | 4.3 | |
| Lead/Lag | | | |
| Lead-Lag Optimize? | | | |
| Recall Mode | Max | Max | None |
| Act Effct Green (s) | 34.9 | 34.9 | |
| Actuated g/C Ratio | 0.87 | 0.87 | |
| v/c Ratio | 0.29 | 0.12 | |
| Control Delay | 8.1 | 7.0 | |
| Queue Delay | 0.0 | 0.0 | |
| Total Delay | 8.1 | 7.0 | |
| LOS | A | A | |
| Approach Delay | 8.1 | 7.0 | |
| Approach LOS | A | A | |

Intersection Summary

| | |
|-----------------------------------------|------------------------|
| Cycle Length: 62 | |
| Actuated Cycle Length: 40.2 | |
| Natural Cycle: 70 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.29 | |
| Intersection Signal Delay: 7.8 | Intersection LOS: A |
| Intersection Capacity Utilization 22.2% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 14: Viscount Rd



Queues

14: Viscount Rd

10-26-2022

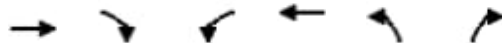


| Lane Group | EBT | WBT |
|-----------------------------|-------|------|
| Lane Group Flow (vph) | 460 | 187 |
| v/c Ratio | 0.29 | 0.12 |
| Control Delay | 8.1 | 7.0 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 8.1 | 7.0 |
| Queue Length 50th (m) | 0.0 | 0.0 |
| Queue Length 95th (m) | 75.8 | 30.4 |
| Internal Link Dist (m) | 194.9 | 0.1 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 1573 | 1544 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.29 | 0.12 |
| Intersection Summary | | |

HCM Signalized Intersection Capacity Analysis

14: Viscount Rd

10-26-2022

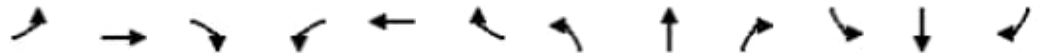


| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|-------|------|-------|------|---------------------------|------|
| Lane Configurations | ↑ | | | ↑ | ↘ | |
| Traffic Volume (vph) | 354 | 0 | 0 | 144 | 0 | 0 |
| Future Volume (vph) | 354 | 0 | 0 | 144 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.3 | | | 4.3 | | |
| Lane Util. Factor | 1.00 | | | 1.00 | | |
| Frbp, ped/bikes | 1.00 | | | 1.00 | | |
| Flpb, ped/bikes | 1.00 | | | 1.00 | | |
| Frt | 1.00 | | | 1.00 | | |
| Flt Protected | 1.00 | | | 1.00 | | |
| Satd. Flow (prot) | 1810 | | | 1776 | | |
| Flt Permitted | 1.00 | | | 1.00 | | |
| Satd. Flow (perm) | 1810 | | | 1776 | | |
| Peak-hour factor, PHF | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 |
| Adj. Flow (vph) | 460 | 0 | 0 | 187 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 460 | 0 | 0 | 187 | 0 | 0 |
| Confl. Peds. (#/hr) | | | | | 50 | |
| Heavy Vehicles (%) | 5% | 2% | 2% | 7% | 2% | 2% |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 30.5 | | | 30.5 | | |
| Effective Green, g (s) | 30.5 | | | 30.5 | | |
| Actuated g/C Ratio | 0.68 | | | 0.68 | | |
| Clearance Time (s) | 4.3 | | | 4.3 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Lane Grp Cap (vph) | 1232 | | | 1209 | | |
| v/s Ratio Prot | c0.25 | | | 0.11 | | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.37 | | | 0.15 | | |
| Uniform Delay, d1 | 3.1 | | | 2.6 | | |
| Progression Factor | 1.00 | | | 1.00 | | |
| Incremental Delay, d2 | 0.9 | | | 0.3 | | |
| Delay (s) | 3.9 | | | 2.8 | | |
| Level of Service | A | | | A | | |
| Approach Delay (s) | 3.9 | | | 2.8 | 0.0 | |
| Approach LOS | A | | | A | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 3.6 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.33 | | | |
| Actuated Cycle Length (s) | | | 44.8 | | Sum of lost time (s) | 10.1 |
| Intersection Capacity Utilization | | | 22.2% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| c Critical Lane Group | | | | | | |

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-26-2022

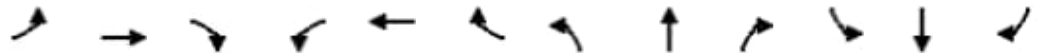


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 147 | 392 | 101 | 263 | 580 | 423 | 120 | 1299 | 212 | 299 | 1136 | 97 |
| Future Volume (vph) | 147 | 392 | 101 | 263 | 580 | 423 | 120 | 1299 | 212 | 299 | 1136 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 1.00 | | 0.97 | 0.99 | | 0.98 | 1.00 | | 0.95 | | 1.00 | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.988 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 3539 | 1583 | 1787 | 3610 | 1615 | 1805 | 3510 | 1512 | 1805 | 3494 | 0 |
| Flt Permitted | 0.159 | | | 0.458 | | | 0.135 | | | 0.074 | | |
| Satd. Flow (perm) | 298 | 3539 | 1532 | 852 | 3610 | 1582 | 256 | 3510 | 1441 | 141 | 3494 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 132 | | | 287 | | | 164 | | | 9 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 242.3 | | | 231.0 | | | 353.5 | | | 276.8 | |
| Travel Time (s) | | 17.4 | | | 16.6 | | | 25.5 | | | 19.9 | |
| Confl. Peds. (#/hr) | 6 | | 14 | 14 | | 6 | 12 | | 23 | 23 | | 12 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 2% | 2% | 1% | 0% | 0% | 0% | 1% | 3% | 0% | 2% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | 0 |
| Adj. Flow (vph) | 150 | 400 | 103 | 268 | 592 | 432 | 122 | 1326 | 216 | 305 | 1159 | 99 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 150 | 400 | 103 | 268 | 592 | 432 | 122 | 1326 | 216 | 305 | 1258 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.02 | 1.05 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 | |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 13.0 | 35.0 | 35.0 | 10.0 | 53.0 | 53.0 | 24.0 | 67.0 | |
| Total Split (%) | 13.8% | 30.8% | 30.8% | 10.0% | 26.9% | 26.9% | 7.7% | 40.8% | 40.8% | 18.5% | 51.5% | |
| Maximum Green (s) | 14.0 | 33.4 | 33.4 | 9.0 | 28.4 | 28.4 | 6.0 | 46.3 | 46.3 | 20.0 | 60.3 | |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | |
| Flash Dont Walk (s) | | 20.0 | 20.0 | | 20.0 | 20.0 | | 19.0 | 19.0 | | 19.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | |
| Act Effct Green (s) | 44.6 | 29.9 | 29.9 | 37.8 | 26.2 | 26.2 | 59.9 | 50.4 | 50.4 | 76.5 | 62.9 | |
| Actuated g/C Ratio | 0.34 | 0.23 | 0.23 | 0.29 | 0.20 | 0.20 | 0.46 | 0.39 | 0.39 | 0.59 | 0.48 | |
| v/c Ratio | 0.61 | 0.49 | 0.23 | 0.86 | 0.81 | 0.79 | 0.61 | 0.98 | 0.33 | 0.92 | 0.74 | |
| Control Delay | 39.9 | 45.0 | 4.0 | 62.6 | 59.1 | 27.1 | 35.9 | 45.8 | 3.3 | 69.2 | 30.8 | |
| 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 | 39.9 | 45.0 | 4.0 | 62.6 | 59.1 | 27.1 | 35.9 | 45.8 | 3.3 | 69.2 | 30.8 | |
| LOS | D | D | A | E | E | C | D | D | A | E | C | |
| Approach Delay | | 37.4 | | | 49.1 | | | 39.6 | | | 38.2 | |
| Approach LOS | | D | | | D | | | D | | | D | |

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 122 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 41.3

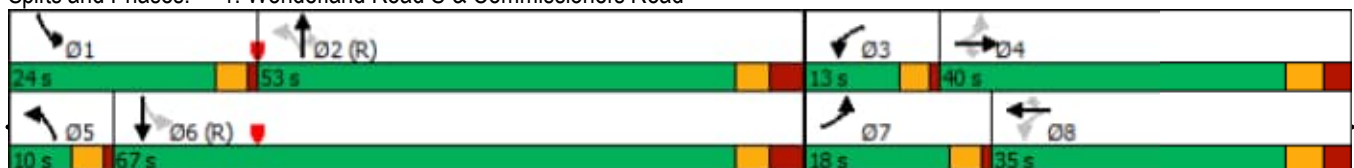
Intersection LOS: D

Intersection Capacity Utilization 100.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Timings

1: Wonderland Road S & Commissioners Road

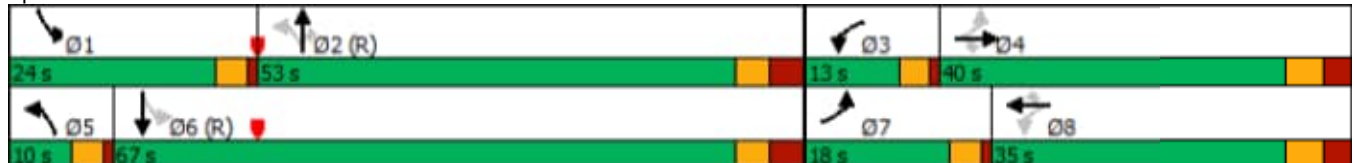
10-26-2022

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 147 | 392 | 101 | 263 | 580 | 423 | 120 | 1299 | 212 | 299 | 1136 |
| Future Volume (vph) | 147 | 392 | 101 | 263 | 580 | 423 | 120 | 1299 | 212 | 299 | 1136 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 |
| Total Split (s) | 18.0 | 40.0 | 40.0 | 13.0 | 35.0 | 35.0 | 10.0 | 53.0 | 53.0 | 24.0 | 67.0 |
| Total Split (%) | 13.8% | 30.8% | 30.8% | 10.0% | 26.9% | 26.9% | 7.7% | 40.8% | 40.8% | 18.5% | 51.5% |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effct Green (s) | 44.6 | 29.9 | 29.9 | 37.8 | 26.2 | 26.2 | 59.9 | 50.4 | 50.4 | 76.5 | 62.9 |
| Actuated g/C Ratio | 0.34 | 0.23 | 0.23 | 0.29 | 0.20 | 0.20 | 0.46 | 0.39 | 0.39 | 0.59 | 0.48 |
| v/c Ratio | 0.61 | 0.49 | 0.23 | 0.86 | 0.81 | 0.79 | 0.61 | 0.98 | 0.33 | 0.92 | 0.74 |
| Control Delay | 39.9 | 45.0 | 4.0 | 62.6 | 59.1 | 27.1 | 35.9 | 45.8 | 3.3 | 69.2 | 30.8 |
| 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 | 39.9 | 45.0 | 4.0 | 62.6 | 59.1 | 27.1 | 35.9 | 45.8 | 3.3 | 69.2 | 30.8 |
| LOS | D | D | A | E | E | C | D | D | A | E | C |
| Approach Delay | | 37.4 | | | 49.1 | | | 39.6 | | | 38.2 |
| Approach LOS | | D | | | D | | | D | | | D |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 122 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 41.3
 Intersection LOS: D
 Intersection Capacity Utilization 100.0%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Queues

1: Wonderland Road S & Commissioners Road

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|------|-------|------|-------|-------|-------|-------|--------|------|--------|-------|
| Lane Group Flow (vph) | 150 | 400 | 103 | 268 | 592 | 432 | 122 | 1326 | 216 | 305 | 1258 |
| v/c Ratio | 0.61 | 0.49 | 0.23 | 0.86 | 0.81 | 0.79 | 0.61 | 0.98 | 0.33 | 0.92 | 0.74 |
| Control Delay | 39.9 | 45.0 | 4.0 | 62.6 | 59.1 | 27.1 | 35.9 | 45.8 | 3.3 | 69.2 | 30.8 |
| 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 | 39.9 | 45.0 | 4.0 | 62.6 | 59.1 | 27.1 | 35.9 | 45.8 | 3.3 | 69.2 | 30.8 |
| Queue Length 50th (m) | 27.5 | 48.0 | 0.0 | 52.9 | 79.5 | 37.3 | 7.8 | ~204.3 | 8.4 | 64.6 | 145.4 |
| Queue Length 95th (m) | 44.0 | 64.0 | 8.3 | #91.8 | 101.1 | 80.2 | #33.6 | #250.4 | 7.4 | #119.9 | 174.8 |
| Internal Link Dist (m) | | 218.3 | | | 207.0 | | | 329.5 | | | 252.8 |
| Turn Bay Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | |
| Base Capacity (vph) | 264 | 909 | 491 | 312 | 788 | 569 | 199 | 1359 | 658 | 342 | 1696 |
| 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 | 0.57 | 0.44 | 0.21 | 0.86 | 0.75 | 0.76 | 0.61 | 0.98 | 0.33 | 0.89 | 0.74 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

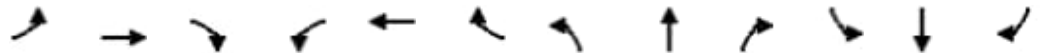
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Wonderland Road S & Commissioners Road

10-26-2022



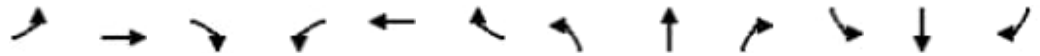
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| Lane Configurations | ↖ | ↕ | ↗ | ↖ | ↕ | ↗ | ↖ | ↕ | ↗ | ↖ | ↕ | ↗ |
| Traffic Volume (vph) | 147 | 392 | 101 | 263 | 580 | 423 | 120 | 1299 | 212 | 299 | 1136 | 97 |
| Future Volume (vph) | 147 | 392 | 101 | 263 | 580 | 423 | 120 | 1299 | 212 | 299 | 1136 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1787 | 3539 | 1531 | 1779 | 3610 | 1582 | 1805 | 3510 | 1441 | 1805 | 3495 | |
| Flt Permitted | 0.16 | 1.00 | 1.00 | 0.46 | 1.00 | 1.00 | 0.13 | 1.00 | 1.00 | 0.07 | 1.00 | |
| Satd. Flow (perm) | 298 | 3539 | 1531 | 858 | 3610 | 1582 | 256 | 3510 | 1441 | 140 | 3495 | |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 150 | 400 | 103 | 268 | 592 | 432 | 122 | 1326 | 216 | 305 | 1159 | 99 |
| RTOR Reduction (vph) | 0 | 0 | 79 | 0 | 0 | 229 | 0 | 0 | 100 | 0 | 5 | 0 |
| Lane Group Flow (vph) | 150 | 400 | 24 | 268 | 592 | 203 | 122 | 1326 | 116 | 305 | 1253 | 0 |
| Confl. Peds. (#/hr) | 6 | | 14 | 14 | | 6 | 12 | | 23 | 23 | | 12 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | 1 | | | |
| Heavy Vehicles (%) | 1% | 2% | 2% | 1% | 0% | 0% | 0% | 1% | 3% | 0% | 2% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Actuated Green, G (s) | 42.6 | 29.9 | 29.9 | 35.2 | 26.2 | 26.2 | 57.2 | 50.4 | 50.4 | 73.8 | 63.0 | |
| Effective Green, g (s) | 42.6 | 29.9 | 29.9 | 35.2 | 26.2 | 26.2 | 57.2 | 50.4 | 50.4 | 73.8 | 63.0 | |
| Actuated g/C Ratio | 0.33 | 0.23 | 0.23 | 0.27 | 0.20 | 0.20 | 0.44 | 0.39 | 0.39 | 0.57 | 0.48 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 243 | 813 | 352 | 296 | 727 | 318 | 193 | 1360 | 558 | 327 | 1693 | |
| v/s Ratio Prot | c0.06 | 0.11 | | c0.06 | 0.16 | | 0.03 | 0.38 | | c0.14 | 0.36 | |
| v/s Ratio Perm | 0.14 | | 0.02 | c0.18 | | 0.13 | 0.24 | | 0.08 | c0.39 | | |
| v/c Ratio | 0.62 | 0.49 | 0.07 | 0.91 | 0.81 | 0.64 | 0.63 | 0.97 | 0.21 | 0.93 | 0.74 | |
| Uniform Delay, d1 | 33.7 | 43.5 | 39.1 | 43.7 | 49.6 | 47.6 | 24.0 | 39.2 | 26.5 | 41.4 | 26.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.47 | 0.68 | 0.26 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 4.6 | 0.5 | 0.1 | 29.1 | 7.0 | 4.2 | 5.5 | 17.1 | 0.7 | 32.6 | 3.0 | |
| Delay (s) | 38.4 | 43.9 | 39.2 | 72.7 | 56.6 | 51.7 | 40.8 | 43.6 | 7.7 | 74.0 | 29.9 | |
| Level of Service | D | D | D | E | E | D | D | D | A | E | C | |
| Approach Delay (s) | | 41.9 | | | 58.3 | | | 38.7 | | | 38.5 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Intersection Summary | | |
|-----------------------------------|--------|---------------------------|
| HCM 2000 Control Delay | 43.9 | HCM 2000 Level of Service |
| HCM 2000 Volume to Capacity ratio | 0.93 | D |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) |
| Intersection Capacity Utilization | 100.0% | 21.3 |
| Analysis Period (min) | 15 | ICU Level of Service |
| | | F |

c Critical Lane Group

Lanes, Volumes, Timings
2: Wonderland Road S & Village Green Ave

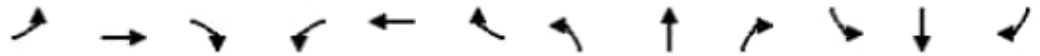
10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1580 | 67 | 33 | 1454 | 35 |
| Future Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1580 | 67 | 33 | 1454 | 35 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (m) | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Storage Length (m) | 30.0 | | 0.0 | 20.0 | | 0.0 | 35.0 | | 0.0 | 28.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | 0.99 | | 0.99 | 0.98 | | | 1.00 | | | 1.00 | |
| Frt | | 0.923 | | | 0.899 | | | 0.994 | | | 0.997 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1685 | 1691 | 0 | 1620 | 1627 | 0 | 1685 | 3473 | 0 | 1685 | 3392 | 0 |
| Flt Permitted | 0.717 | | | 0.732 | | | 0.146 | | | 0.119 | | |
| Satd. Flow (perm) | 1258 | 1691 | 0 | 1237 | 1627 | 0 | 259 | 3473 | 0 | 211 | 3392 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 20 | | | 40 | | | 7 | | | 4 | |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 279.4 | | | 195.9 | | | 119.4 | | | 353.5 | |
| Travel Time (s) | | 20.1 | | | 14.1 | | | 8.6 | | | 25.5 | |
| Confl. Peds. (#/hr) | 8 | | 7 | 7 | | 8 | 19 | | 16 | 16 | | 19 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 0% | 0% | 5% | 4% | 0% | 5% | 0% | 1% | 4% | 0% | 4% | 3% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 9 | 0 |
| Adj. Flow (vph) | 18 | 19 | 20 | 48 | 20 | 41 | 30 | 1646 | 70 | 34 | 1515 | 36 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 18 | 39 | 0 | 48 | 61 | 0 | 30 | 1716 | 0 | 34 | 1551 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.0 | | | 3.0 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.09 | 1.00 | 1.00 | 1.09 | 1.00 | 1.00 | 1.09 | 1.02 | 1.00 | 1.09 | 1.02 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings
 2: Wonderland Road S & Village Green Ave

10-26-2022

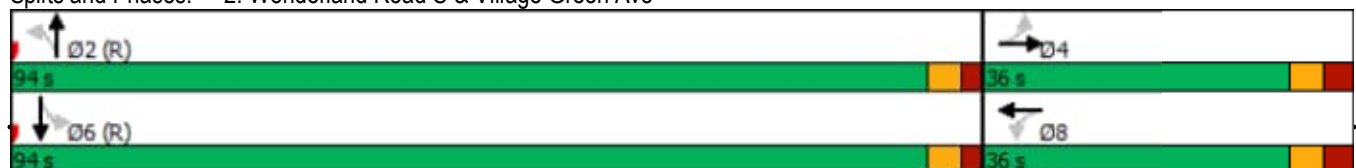


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 34.6 | 34.6 | | 34.6 | 34.6 | | 22.5 | 22.5 | | 22.5 | 22.5 | |
| Total Split (s) | 36.0 | 36.0 | | 36.0 | 36.0 | | 94.0 | 94.0 | | 94.0 | 94.0 | |
| Total Split (%) | 27.7% | 27.7% | | 27.7% | 27.7% | | 72.3% | 72.3% | | 72.3% | 72.3% | |
| Maximum Green (s) | 29.7 | 29.7 | | 29.7 | 29.7 | | 88.6 | 88.6 | | 88.6 | 88.6 | |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | | 3.3 | 3.3 | |
| All-Red Time (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 2.1 | 2.1 | | 2.1 | 2.1 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | C-Max | C-Max | | C-Max | C-Max | |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 21.0 | 21.0 | | 21.0 | 21.0 | | 9.0 | 9.0 | | 9.0 | 9.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Act Effct Green (s) | 10.7 | 10.7 | | 10.7 | 10.7 | | 111.3 | 111.3 | | 111.3 | 111.3 | |
| Actuated g/C Ratio | 0.08 | 0.08 | | 0.08 | 0.08 | | 0.86 | 0.86 | | 0.86 | 0.86 | |
| v/c Ratio | 0.17 | 0.25 | | 0.48 | 0.36 | | 0.14 | 0.58 | | 0.19 | 0.53 | |
| Control Delay | 57.6 | 35.7 | | 71.3 | 30.2 | | 4.5 | 7.5 | | 3.4 | 2.2 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.5 | | 0.0 | 0.0 | |
| Total Delay | 57.6 | 35.7 | | 71.3 | 30.2 | | 4.5 | 8.0 | | 3.4 | 2.2 | |
| LOS | E | D | | E | C | | A | A | | A | A | |
| Approach Delay | | 42.7 | | | 48.3 | | | 7.9 | | | 2.2 | |
| Approach LOS | | D | | | D | | | A | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 7.2
 Intersection LOS: A
 Intersection Capacity Utilization 68.1%
 ICU Level of Service C
 Analysis Period (min) 15

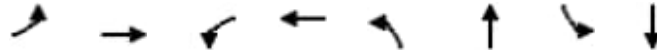
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Timings

2: Wonderland Road S & Village Green Ave

10-26-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↶ | ↷ | ↶ | ↷ | ↶ | ↷ | ↶ | ↷ |
| Traffic Volume (vph) | 17 | 18 | 46 | 19 | 29 | 1580 | 33 | 1454 |
| Future Volume (vph) | 17 | 18 | 46 | 19 | 29 | 1580 | 33 | 1454 |
| Turn Type | Perm | NA | Perm | NA | Perm | NA | Perm | NA |
| Protected Phases | | 4 | | 8 | | 2 | | 6 |
| Permitted Phases | 4 | | 8 | | 2 | | 6 | |
| Detector Phase | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 |
| Switch Phase | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 34.6 | 34.6 | 34.6 | 34.6 | 22.5 | 22.5 | 22.5 | 22.5 |
| Total Split (s) | 36.0 | 36.0 | 36.0 | 36.0 | 94.0 | 94.0 | 94.0 | 94.0 |
| Total Split (%) | 27.7% | 27.7% | 27.7% | 27.7% | 72.3% | 72.3% | 72.3% | 72.3% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 2.1 | 2.1 | 2.1 | 2.1 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 6.3 | 6.3 | 6.3 | 6.3 | 5.4 | 5.4 | 5.4 | 5.4 |
| Lead/Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | |
| Recall Mode | None | None | None | None | C-Max | C-Max | C-Max | C-Max |
| Act Effect Green (s) | 10.7 | 10.7 | 10.7 | 10.7 | 111.3 | 111.3 | 111.3 | 111.3 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.08 | 0.08 | 0.86 | 0.86 | 0.86 | 0.86 |
| v/c Ratio | 0.17 | 0.25 | 0.48 | 0.36 | 0.14 | 0.58 | 0.19 | 0.53 |
| Control Delay | 57.6 | 35.7 | 71.3 | 30.2 | 4.5 | 7.5 | 3.4 | 2.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| Total Delay | 57.6 | 35.7 | 71.3 | 30.2 | 4.5 | 8.0 | 3.4 | 2.2 |
| LOS | E | D | E | C | A | A | A | A |
| Approach Delay | | 42.7 | | 48.3 | | 7.9 | | 2.2 |
| Approach LOS | | D | | D | | A | | A |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 98 (75%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.58
 Intersection Signal Delay: 7.2
 Intersection Capacity Utilization 68.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

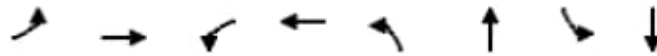
Splits and Phases: 2: Wonderland Road S & Village Green Ave



Queues

2: Wonderland Road S & Village Green Ave

10-26-2022



| Lane Group | EBL | EBT | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|------|-------|------|-------|------|--------|------|-------|
| Lane Group Flow (vph) | 18 | 39 | 48 | 61 | 30 | 1716 | 34 | 1551 |
| v/c Ratio | 0.17 | 0.25 | 0.48 | 0.36 | 0.14 | 0.58 | 0.19 | 0.53 |
| Control Delay | 57.6 | 35.7 | 71.3 | 30.2 | 4.5 | 7.5 | 3.4 | 2.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| Total Delay | 57.6 | 35.7 | 71.3 | 30.2 | 4.5 | 8.0 | 3.4 | 2.2 |
| Queue Length 50th (m) | 4.6 | 4.8 | 12.6 | 5.4 | 2.2 | 117.4 | 0.9 | 32.4 |
| Queue Length 95th (m) | 12.6 | 16.1 | 25.4 | 19.3 | m2.3 | m146.3 | m1.7 | 35.1 |
| Internal Link Dist (m) | | 255.4 | | 171.9 | | 95.4 | | 329.5 |
| Turn Bay Length (m) | 30.0 | | 20.0 | | 35.0 | | 28.0 | |
| Base Capacity (vph) | 287 | 401 | 282 | 402 | 221 | 2975 | 180 | 2905 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 719 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.06 | 0.10 | 0.17 | 0.15 | 0.14 | 0.76 | 0.19 | 0.53 |

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Wonderland Road S & Village Green Ave

10-26-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|-------|------|------|-------|-------|------|-------|-------|------|
| Lane Configurations | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | | ↖ | ↗ | |
| Traffic Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1580 | 67 | 33 | 1454 | 35 |
| Future Volume (vph) | 17 | 18 | 19 | 46 | 19 | 39 | 29 | 1580 | 67 | 33 | 1454 | 35 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 | 3.0 | 3.6 | 3.6 |
| Total Lost time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 0.99 | | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 0.99 | 1.00 | | 0.99 | 1.00 | | 0.99 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 0.92 | | 1.00 | 0.90 | | 1.00 | 0.99 | | 1.00 | 1.00 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1667 | 1691 | | 1605 | 1627 | | 1675 | 3472 | | 1680 | 3390 | |
| Flt Permitted | 0.72 | 1.00 | | 0.73 | 1.00 | | 0.15 | 1.00 | | 0.12 | 1.00 | |
| Satd. Flow (perm) | 1259 | 1691 | | 1236 | 1627 | | 258 | 3472 | | 210 | 3390 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 18 | 19 | 20 | 48 | 20 | 41 | 30 | 1646 | 70 | 34 | 1515 | 36 |
| RTOR Reduction (vph) | 0 | 19 | 0 | 0 | 37 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |
| Lane Group Flow (vph) | 18 | 20 | 0 | 48 | 24 | 0 | 30 | 1715 | 0 | 34 | 1550 | 0 |
| Confl. Peds. (#/hr) | 8 | | 7 | 7 | | 8 | 19 | | 16 | 16 | | 19 |
| Heavy Vehicles (%) | 0% | 0% | 5% | 4% | 0% | 5% | 0% | 1% | 4% | 0% | 4% | 3% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 9 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 9.3 | 9.3 | | 9.3 | 9.3 | | 109.0 | 109.0 | | 109.0 | 109.0 | |
| Effective Green, g (s) | 9.3 | 9.3 | | 9.3 | 9.3 | | 109.0 | 109.0 | | 109.0 | 109.0 | |
| Actuated g/C Ratio | 0.07 | 0.07 | | 0.07 | 0.07 | | 0.84 | 0.84 | | 0.84 | 0.84 | |
| Clearance Time (s) | 6.3 | 6.3 | | 6.3 | 6.3 | | 5.4 | 5.4 | | 5.4 | 5.4 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 90 | 120 | | 88 | 116 | | 216 | 2911 | | 176 | 2842 | |
| v/s Ratio Prot | | 0.01 | | | 0.01 | | | c0.49 | | | 0.46 | |
| v/s Ratio Perm | 0.01 | | | c0.04 | | | 0.12 | | | 0.16 | | |
| v/c Ratio | 0.20 | 0.17 | | 0.55 | 0.21 | | 0.14 | 0.59 | | 0.19 | 0.55 | |
| Uniform Delay, d1 | 56.8 | 56.7 | | 58.3 | 56.9 | | 1.9 | 3.4 | | 2.0 | 3.1 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.19 | 1.81 | | 0.56 | 0.47 | |
| Incremental Delay, d2 | 1.1 | 0.7 | | 6.7 | 0.9 | | 1.0 | 0.7 | | 1.7 | 0.5 | |
| Delay (s) | 57.9 | 57.4 | | 65.1 | 57.8 | | 3.3 | 6.7 | | 2.8 | 2.0 | |
| Level of Service | E | E | | E | E | | A | A | | A | A | |
| Approach Delay (s) | | 57.6 | | | 61.0 | | | 6.7 | | | 2.0 | |
| Approach LOS | | E | | | E | | | A | | | A | |

Intersection Summary

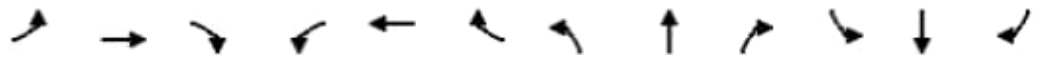
| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 7.1 | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | 0.59 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 11.7 |
| Intersection Capacity Utilization | 68.1% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

c Critical Lane Group

Lanes, Volumes, Timings

3: Wonderland Road S & Mall Access East (N)/Private Access

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 69 | 0 | 26 | 3 | 0 | 22 | 11 | 1609 | 4 | 24 | 1442 | 50 |
| Future Volume (vph) | 69 | 0 | 26 | 3 | 0 | 22 | 11 | 1609 | 4 | 24 | 1442 | 50 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 50.0 | | 0.0 | 30.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | 0.881 | | | | | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.994 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 0 | 1442 | 0 | 1664 | 0 | 1530 | 3539 | 0 | 1805 | 3471 | 1553 |
| Flt Permitted | 0.950 | | | | 0.994 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 0 | 1442 | 0 | 1664 | 0 | 1530 | 3539 | 0 | 1805 | 3471 | 1553 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | 50 | |
| Link Distance (m) | | 100.3 | | | 66.2 | | | 161.3 | | | 119.4 | |
| Travel Time (s) | | 18.1 | | | 11.9 | | | 11.6 | | | 8.6 | |
| Confl. Peds. (#/hr) | | | | | | | 14 | | 11 | 11 | | 14 |
| Confl. Bikes (#/hr) | | | | | | | | | | | | 1 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 0% | 12% | 0% | 0% | 0% | 18% | 2% | 0% | 0% | 4% | 4% |
| Adj. Flow (vph) | 71 | 0 | 27 | 3 | 0 | 23 | 11 | 1659 | 4 | 25 | 1487 | 52 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 71 | 0 | 27 | 0 | 26 | 0 | 11 | 1663 | 0 | 25 | 1487 | 52 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | |
|-----------------------------------|------------------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 61.8% |
| | ICU Level of Service B |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

3: Wonderland Road S & Mall Access East (N)/Private Access

10-26-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|-------|------|-------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 69 | 0 | 26 | 3 | 0 | 22 | 11 | 1609 | 4 | 24 | 1442 | 50 |
| Future Volume (Veh/h) | 69 | 0 | 26 | 3 | 0 | 22 | 11 | 1609 | 4 | 24 | 1442 | 50 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 71 | 0 | 27 | 3 | 0 | 23 | 11 | 1659 | 4 | 25 | 1487 | 52 |
| Pedestrians | | 14 | | | 11 | | | | | | | |
| Lane Width (m) | | 3.6 | | | 3.6 | | | | | | | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | | | | | |
| Percent Blockage | | 1 | | | 1 | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (m) | | | | | | | | 161 | | | 119 | |
| pX, platoon unblocked | 0.84 | 0.84 | 0.86 | 0.84 | 0.84 | 0.77 | 0.86 | | | 0.77 | | |
| vC, conflicting volume | 2426 | 3247 | 758 | 2514 | 3297 | 842 | 1553 | | | 1674 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1587 | 2562 | 402 | 1693 | 2621 | 214 | 1323 | | | 1288 | | |
| tC, single (s) | 7.5 | 6.5 | 7.1 | 7.5 | 6.5 | 6.9 | 4.5 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.4 | 3.5 | 4.0 | 3.3 | 2.4 | | | 2.2 | | |
| p0 queue free % | 0 | 100 | 94 | 93 | 100 | 96 | 97 | | | 94 | | |
| cM capacity (veh/h) | 54 | 20 | 487 | 45 | 18 | 612 | 376 | | | 418 | | |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | SB 4 | | |
| Volume Total | 71 | 27 | 26 | 11 | 1106 | 557 | 25 | 744 | 744 | 52 | | |
| Volume Left | 71 | 0 | 3 | 11 | 0 | 0 | 25 | 0 | 0 | 0 | | |
| Volume Right | 0 | 27 | 23 | 0 | 0 | 4 | 0 | 0 | 0 | 52 | | |
| cSH | 54 | 487 | 248 | 376 | 1700 | 1700 | 418 | 1700 | 1700 | 1700 | | |
| Volume to Capacity | 1.30 | 0.06 | 0.10 | 0.03 | 0.65 | 0.33 | 0.06 | 0.44 | 0.44 | 0.03 | | |
| Queue Length 95th (m) | 50.4 | 1.4 | 2.8 | 0.7 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.0 | | |
| Control Delay (s) | 347.7 | 12.8 | 21.2 | 14.9 | 0.0 | 0.0 | 14.1 | 0.0 | 0.0 | 0.0 | | |
| Lane LOS | F | B | C | B | | | B | | | | | |
| Approach Delay (s) | 255.4 | | 21.2 | 0.1 | | | 0.2 | | | | | |
| Approach LOS | F | | C | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 7.8 | | | | | | | | | |
| Intersection Capacity Utilization | | | 61.8% | | ICU Level of Service | | | | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022

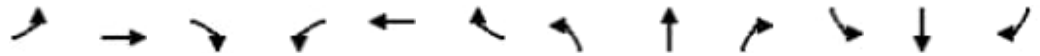


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↗ | | ↔ | | ↗ | ↕ | | ↗ | ↕ | ↗ |
| Traffic Volume (vph) | 318 | 0 | 35 | 4 | 0 | 4 | 18 | 1314 | 13 | 13 | 1397 | 91 |
| Future Volume (vph) | 318 | 0 | 35 | 4 | 0 | 4 | 18 | 1314 | 13 | 13 | 1397 | 91 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 35.0 | | 0.0 | 40.0 | | 35.0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | 0.99 | 0.97 | | 0.98 | | | 1.00 | | | | 0.97 |
| Frt | | | 0.850 | | 0.932 | | | 0.998 | | | | 0.850 |
| Flt Protected | | 0.950 | | | 0.976 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1752 | 1615 | 0 | 1706 | 0 | 1805 | 3565 | 0 | 1805 | 3471 | 1541 |
| Flt Permitted | | 0.752 | | | 0.862 | | 0.123 | | | 0.139 | | |
| Satd. Flow (perm) | 0 | 1369 | 1572 | 0 | 1502 | 0 | 234 | 3565 | 0 | 264 | 3471 | 1496 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 36 | | 23 | | | 2 | | | | 54 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | | 50 |
| Link Distance (m) | | 105.0 | | | 57.0 | | | 158.8 | | | | 161.3 |
| Travel Time (s) | | 18.9 | | | 10.3 | | | 11.4 | | | | 11.6 |
| Confl. Peds. (#/hr) | 8 | | 10 | 10 | | 8 | 12 | | 14 | 14 | | 12 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 4% | 1% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Adj. Flow (vph) | 331 | 0 | 36 | 4 | 0 | 4 | 19 | 1369 | 14 | 14 | 1455 | 95 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 331 | 36 | 0 | 8 | 0 | 19 | 1383 | 0 | 14 | 1455 | 95 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.05 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | | 28.7 | 28.7 | | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | | 91.0 | 91.0 | | 91.0 | 91.0 | 91.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 30.0% | | 70.0% | 70.0% | | 70.0% | 70.0% | 70.0% |
| Maximum Green (s) | 32.3 | 32.3 | 32.3 | 32.3 | 32.3 | | 85.3 | 85.3 | | 85.3 | 85.3 | 85.3 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 19.0 | 19.0 | 19.0 | 16.0 | 16.0 | | 16.0 | 16.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | | 32.3 | 32.3 | | 32.3 | | 85.3 | 85.3 | | 85.3 | 85.3 | 85.3 |
| Actuated g/C Ratio | | 0.25 | 0.25 | | 0.25 | | 0.66 | 0.66 | | 0.66 | 0.66 | 0.66 |
| v/c Ratio | | 0.97 | 0.09 | | 0.02 | | 0.12 | 0.59 | | 0.08 | 0.64 | 0.10 |
| Control Delay | | 91.2 | 12.0 | | 3.0 | | 5.1 | 6.2 | | 5.9 | 15.0 | 2.0 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 91.2 | 12.0 | | 3.0 | | 5.1 | 6.2 | | 5.9 | 15.0 | 2.0 |
| LOS | | F | B | | A | | A | A | | A | B | A |
| Approach Delay | | 83.4 | | | 3.0 | | | 6.2 | | | 14.2 | |
| Approach LOS | | F | | | A | | | A | | | B | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 40 (31%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 18.4
 Intersection LOS: B
 Intersection Capacity Utilization 73.8%
 ICU Level of Service D
 Analysis Period (min) 15

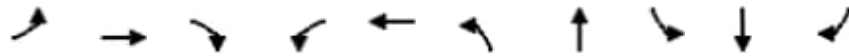
Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022

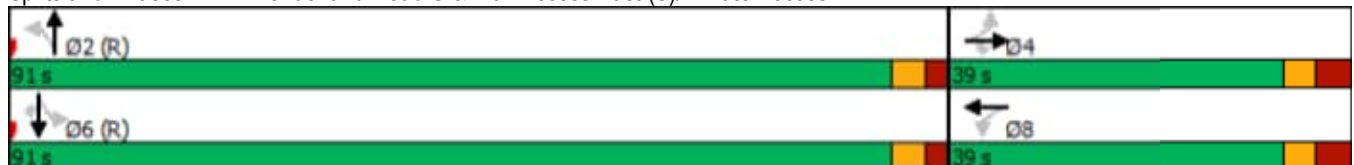


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↔ | | ↔ | ↔ | ↔ | ↔ | ↔ | ↔ |
| Traffic Volume (vph) | 318 | 0 | 35 | 4 | 0 | 18 | 1314 | 13 | 1397 | 91 |
| Future Volume (vph) | 318 | 0 | 35 | 4 | 0 | 18 | 1314 | 13 | 1397 | 91 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | 28.7 | 28.7 | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | 91.0 | 91.0 | 91.0 | 91.0 | 91.0 |
| Total Split (%) | 30.0% | 30.0% | 30.0% | 30.0% | 30.0% | 70.0% | 70.0% | 70.0% | 70.0% | 70.0% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effect Green (s) | | 32.3 | 32.3 | | 32.3 | 85.3 | 85.3 | 85.3 | 85.3 | 85.3 |
| Actuated g/C Ratio | | 0.25 | 0.25 | | 0.25 | 0.66 | 0.66 | 0.66 | 0.66 | 0.66 |
| v/c Ratio | | 0.97 | 0.09 | | 0.02 | 0.12 | 0.59 | 0.08 | 0.64 | 0.10 |
| Control Delay | | 91.2 | 12.0 | | 3.0 | 5.1 | 6.2 | 5.9 | 15.0 | 2.0 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 91.2 | 12.0 | | 3.0 | 5.1 | 6.2 | 5.9 | 15.0 | 2.0 |
| LOS | | F | B | | A | A | A | A | B | A |
| Approach Delay | | 83.4 | | | 3.0 | | 6.2 | | 14.2 | |
| Approach LOS | | F | | | A | | A | | B | |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 40 (31%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 18.4
 Intersection Capacity Utilization 73.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Queues

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022



| Lane Group | EBT | EBR | WBT | NBL | NBT | SBL | SBT | SBR |
|------------------------|--------|------|------|------|-------|------|-------|------|
| Lane Group Flow (vph) | 331 | 36 | 8 | 19 | 1383 | 14 | 1455 | 95 |
| v/c Ratio | 0.97 | 0.09 | 0.02 | 0.12 | 0.59 | 0.08 | 0.64 | 0.10 |
| Control Delay | 91.2 | 12.0 | 3.0 | 5.1 | 6.2 | 5.9 | 15.0 | 2.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 91.2 | 12.0 | 3.0 | 5.1 | 6.2 | 5.9 | 15.0 | 2.0 |
| Queue Length 50th (m) | 89.0 | 0.0 | 0.0 | 0.7 | 27.5 | 1.0 | 158.6 | 3.5 |
| Queue Length 95th (m) | #150.7 | 9.0 | 1.2 | m1.5 | 31.6 | m1.9 | 184.6 | 5.9 |
| Internal Link Dist (m) | 81.0 | | 33.0 | | 134.8 | | 137.3 | |
| Turn Bay Length (m) | | | | 35.0 | | 40.0 | | 35.0 |
| Base Capacity (vph) | 340 | 417 | 390 | 153 | 2339 | 173 | 2277 | 1000 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.97 | 0.09 | 0.02 | 0.12 | 0.60 | 0.08 | 0.65 | 0.10 |

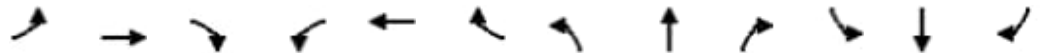
Intersection Summary

- # 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.

HCM Signalized Intersection Capacity Analysis

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022


























| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations | | ↔ | ↔ | | ↔ | | ↔ | ↔ | | ↔ | ↔ | ↔ |
| Traffic Volume (vph) | 318 | 0 | 35 | 4 | 0 | 4 | 18 | 1314 | 13 | 13 | 1397 | 91 |
| Future Volume (vph) | 318 | 0 | 35 | 4 | 0 | 4 | 18 | 1314 | 13 | 13 | 1397 | 91 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frbp, ped/bikes | | 1.00 | 0.97 | | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | | 0.99 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 0.85 | | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | | 0.98 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1729 | 1572 | | 1701 | | 1805 | 3567 | | 1805 | 3471 | 1496 |
| Flt Permitted | | 0.75 | 1.00 | | 0.86 | | 0.12 | 1.00 | | 0.14 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1369 | 1572 | | 1502 | | 234 | 3567 | | 264 | 3471 | 1496 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 331 | 0 | 36 | 4 | 0 | 4 | 19 | 1369 | 14 | 14 | 1455 | 95 |
| RTOR Reduction (vph) | 0 | 0 | 27 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 19 |
| Lane Group Flow (vph) | 0 | 331 | 9 | 0 | 2 | 0 | 19 | 1382 | 0 | 14 | 1455 | 76 |
| Confl. Peds. (#/hr) | 8 | | 10 | 10 | | 8 | 12 | | 14 | 14 | | 12 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 4% | 1% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Actuated Green, G (s) | | 32.3 | 32.3 | | 32.3 | | 85.3 | 85.3 | | 85.3 | 85.3 | 85.3 |
| Effective Green, g (s) | | 32.3 | 32.3 | | 32.3 | | 85.3 | 85.3 | | 85.3 | 85.3 | 85.3 |
| Actuated g/C Ratio | | 0.25 | 0.25 | | 0.25 | | 0.66 | 0.66 | | 0.66 | 0.66 | 0.66 |
| Clearance Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 340 | 390 | | 373 | | 153 | 2340 | | 173 | 2277 | 981 |
| v/s Ratio Prot | | | | | | | | 0.39 | | | c0.42 | |
| v/s Ratio Perm | | c0.24 | 0.01 | | 0.00 | | 0.08 | | | 0.05 | | 0.05 |
| v/c Ratio | | 0.97 | 0.02 | | 0.01 | | 0.12 | 0.59 | | 0.08 | 0.64 | 0.08 |
| Uniform Delay, d1 | | 48.4 | 36.9 | | 36.8 | | 8.4 | 12.5 | | 8.1 | 13.2 | 8.1 |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.39 | 0.41 | | 0.59 | 1.02 | 0.47 |
| Incremental Delay, d2 | | 41.4 | 0.0 | | 0.0 | | 1.5 | 1.0 | | 0.8 | 1.2 | 0.1 |
| Delay (s) | | 89.8 | 36.9 | | 36.8 | | 4.8 | 6.1 | | 5.6 | 14.8 | 3.9 |
| Level of Service | | F | D | | D | | A | A | | A | B | A |
| Approach Delay (s) | | 84.6 | | | 36.8 | | | 6.1 | | | 14.0 | |
| Approach LOS | | F | | | D | | | A | | | B | |

| Intersection Summary | | |
|-----------------------------------|-------|---------------------------|
| HCM 2000 Control Delay | 18.5 | HCM 2000 Level of Service |
| HCM 2000 Volume to Capacity ratio | 0.73 | B |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) |
| Intersection Capacity Utilization | 73.8% | 12.4 |
| Analysis Period (min) | 15 | ICU Level of Service |
| | | D |

c Critical Lane Group

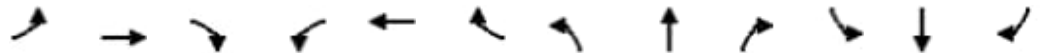
Lanes, Volumes, Timings
5: Wonderland Road S & Viscount Rd

10-26-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 106 | 106 | 228 | 73 | 94 | 67 | 150 | 1128 | 59 | 114 | 1151 | 116 |
| Future Volume (vph) | 106 | 106 | 228 | 73 | 94 | 67 | 150 | 1128 | 59 | 114 | 1151 | 116 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 40.0 | | 95.0 | 30.0 | | 30.0 | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | 0.98 | | 0.96 | 0.98 | 0.98 | | | | 0.92 | 0.99 | | 0.94 |
| Frt | | | 0.850 | | 0.938 | | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1787 | 1900 | 1537 | 1805 | 3240 | 0 | 1752 | 3574 | 1568 | 1770 | 3539 | 1553 |
| Flt Permitted | 0.648 | | | 0.536 | | | 0.169 | | | 0.189 | | |
| Satd. Flow (perm) | 1195 | 1900 | 1481 | 999 | 3240 | 0 | 312 | 3574 | 1447 | 350 | 3539 | 1462 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 207 | | 68 | | | | 97 | | | 97 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 157.9 | | | 309.4 | | | 1206.3 | | | 158.8 | |
| Travel Time (s) | | 11.4 | | | 22.3 | | | 86.9 | | | 11.4 | |
| Confl. Peds. (#/hr) | 23 | | 22 | 22 | | 23 | 34 | | 25 | 25 | | 34 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 1% | 0% | 3% | 0% | 5% | 0% | 3% | 1% | 3% | 2% | 2% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 108 | 108 | 233 | 74 | 96 | 68 | 153 | 1151 | 60 | 116 | 1174 | 118 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 108 | 108 | 233 | 74 | 164 | 0 | 153 | 1151 | 60 | 116 | 1174 | 118 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.03 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | Right | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |

Lanes, Volumes, Timings
5: Wonderland Road S & Viscount Rd

10-26-2022

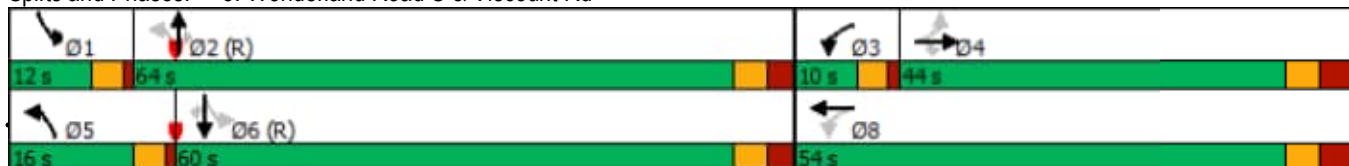


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | | 16.0 | 64.0 | 64.0 | 12.0 | 60.0 | 60.0 |
| Total Split (%) | 33.8% | 33.8% | 33.8% | 7.7% | 41.5% | | 12.3% | 49.2% | 49.2% | 9.2% | 46.2% | 46.2% |
| Maximum Green (s) | 37.5 | 37.5 | 37.5 | 6.0 | 47.5 | | 12.0 | 58.0 | 58.0 | 8.0 | 54.0 | 54.0 |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | None | C-Max | C-Max | None | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | | 7.0 | | | 7.0 | 7.0 | | 7.0 | 7.0 |
| Flash Dont Walk (s) | 29.0 | 29.0 | 29.0 | | 29.0 | | | 21.0 | 21.0 | | 21.0 | 21.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | | 0 | | | 0 | 0 | | 0 | 0 |
| Act Effct Green (s) | 17.3 | 17.3 | 17.3 | 27.8 | 25.3 | | 92.1 | 79.8 | 79.8 | 88.2 | 77.8 | 77.8 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.13 | 0.21 | 0.19 | | 0.71 | 0.61 | 0.61 | 0.68 | 0.60 | 0.60 |
| v/c Ratio | 0.68 | 0.43 | 0.62 | 0.30 | 0.24 | | 0.46 | 0.52 | 0.06 | 0.35 | 0.55 | 0.13 |
| Control Delay | 73.1 | 55.0 | 18.3 | 41.8 | 24.1 | | 15.6 | 17.8 | 2.9 | 8.1 | 10.4 | 2.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 73.1 | 55.0 | 18.3 | 41.8 | 24.1 | | 15.6 | 17.8 | 2.9 | 8.1 | 10.5 | 2.1 |
| LOS | E | D | B | D | C | | B | B | A | A | B | A |
| Approach Delay | | 40.3 | | | 29.6 | | | 16.9 | | | 9.6 | |
| Approach LOS | | D | | | C | | | B | | | A | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 59 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 17.9
 Intersection LOS: B
 Intersection Capacity Utilization 83.9%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Timings

5: Wonderland Road S & Viscount Rd

10-26-2022

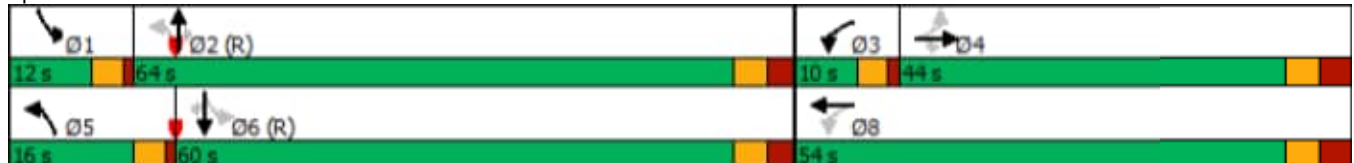


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↖ | ↑ | ↗ | ↖ | ↕ | ↖ | ↕ | ↗ | ↖ | ↕ | ↗ |
| Traffic Volume (vph) | 106 | 106 | 228 | 73 | 94 | 150 | 1128 | 59 | 114 | 1151 | 116 |
| Future Volume (vph) | 106 | 106 | 228 | 73 | 94 | 150 | 1128 | 59 | 114 | 1151 | 116 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 2 | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 3 | 8 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 |
| Minimum Split (s) | 42.5 | 42.5 | 42.5 | 9.5 | 42.5 | 9.5 | 34.0 | 34.0 | 9.5 | 34.0 | 34.0 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 10.0 | 54.0 | 16.0 | 64.0 | 64.0 | 12.0 | 60.0 | 60.0 |
| Total Split (%) | 33.8% | 33.8% | 33.8% | 7.7% | 41.5% | 12.3% | 49.2% | 49.2% | 9.2% | 46.2% | 46.2% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.0 | 3.3 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | 3.3 |
| All-Red Time (s) | 3.2 | 3.2 | 3.2 | 1.0 | 3.2 | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 2.7 |
| 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) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lead/Lag | Lag | Lag | Lag | Lead | | Lead | Lag | Lag | Lead | Lag | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | C-Max |
| Act Effct Green (s) | 17.3 | 17.3 | 17.3 | 27.8 | 25.3 | 92.1 | 79.8 | 79.8 | 88.2 | 77.8 | 77.8 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.13 | 0.21 | 0.19 | 0.71 | 0.61 | 0.61 | 0.68 | 0.60 | 0.60 |
| v/c Ratio | 0.68 | 0.43 | 0.62 | 0.30 | 0.24 | 0.46 | 0.52 | 0.06 | 0.35 | 0.55 | 0.13 |
| Control Delay | 73.1 | 55.0 | 18.3 | 41.8 | 24.1 | 15.6 | 17.8 | 2.9 | 8.1 | 10.4 | 2.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 73.1 | 55.0 | 18.3 | 41.8 | 24.1 | 15.6 | 17.8 | 2.9 | 8.1 | 10.5 | 2.1 |
| LOS | E | D | B | D | C | B | B | A | A | B | A |
| Approach Delay | | 40.3 | | | 29.6 | | 16.9 | | | 9.6 | |
| Approach LOS | | D | | | C | | B | | | A | |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 59 (45%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 17.9
 Intersection Capacity Utilization 83.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 5: Wonderland Road S & Viscount Rd



Queues

5: Wonderland Road S & Viscount Rd

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|-------|-------|--------|------|-------|-------|------|
| Lane Group Flow (vph) | 108 | 108 | 233 | 74 | 164 | 153 | 1151 | 60 | 116 | 1174 | 118 |
| v/c Ratio | 0.68 | 0.43 | 0.62 | 0.30 | 0.24 | 0.46 | 0.52 | 0.06 | 0.35 | 0.55 | 0.13 |
| Control Delay | 73.1 | 55.0 | 18.3 | 41.8 | 24.1 | 15.6 | 17.8 | 2.9 | 8.1 | 10.4 | 2.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 73.1 | 55.0 | 18.3 | 41.8 | 24.1 | 15.6 | 17.8 | 2.9 | 8.1 | 10.5 | 2.1 |
| Queue Length 50th (m) | 28.7 | 25.3 | 0.0 | 16.2 | 11.2 | 12.6 | 85.4 | 0.0 | 4.9 | 32.1 | 0.0 |
| Queue Length 95th (m) | 47.5 | 42.3 | 27.8 | 27.4 | 19.6 | m29.3 | 117.2 | m1.4 | m10.9 | 95.6 | m5.7 |
| Internal Link Dist (m) | | 133.9 | | | 285.4 | | 1182.3 | | | 134.8 | |
| Turn Bay Length (m) | 40.0 | | 95.0 | 30.0 | | 45.0 | | 45.0 | 55.0 | | 30.0 |
| Base Capacity (vph) | 344 | 548 | 574 | 250 | 1227 | 368 | 2194 | 925 | 336 | 2117 | 913 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 240 | 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 | 0.31 | 0.20 | 0.41 | 0.30 | 0.13 | 0.42 | 0.52 | 0.06 | 0.35 | 0.63 | 0.13 |
























Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

5: Wonderland Road S & Viscount Rd

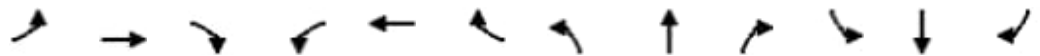
10-26-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  |  |  |  |  |
| Traffic Volume (vph) | 106 | 106 | 228 | 73 | 94 | 67 | 150 | 1128 | 59 | 114 | 1151 | 116 |
| Future Volume (vph) | 106 | 106 | 228 | 73 | 94 | 67 | 150 | 1128 | 59 | 114 | 1151 | 116 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.96 | 1.00 | 0.98 | | 1.00 | 1.00 | 0.92 | 1.00 | 1.00 | 0.94 |
| Flpb, ped/bikes | 0.98 | 1.00 | 1.00 | 0.99 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.94 | | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | 1752 | 1900 | 1480 | 1787 | 3240 | | 1751 | 3574 | 1447 | 1768 | 3539 | 1462 |
| Flt Permitted | 0.65 | 1.00 | 1.00 | 0.54 | 1.00 | | 0.17 | 1.00 | 1.00 | 0.19 | 1.00 | 1.00 |
| Satd. Flow (perm) | 1195 | 1900 | 1480 | 1008 | 3240 | | 311 | 3574 | 1447 | 352 | 3539 | 1462 |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 108 | 108 | 233 | 74 | 96 | 68 | 153 | 1151 | 60 | 116 | 1174 | 118 |
| RTOR Reduction (vph) | 0 | 0 | 179 | 0 | 54 | 0 | 0 | 0 | 24 | 0 | 0 | 40 |
| Lane Group Flow (vph) | 108 | 108 | 54 | 74 | 110 | 0 | 153 | 1151 | 36 | 116 | 1174 | 78 |
| Confl. Peds. (#/hr) | 23 | | 22 | 22 | | 23 | 34 | | 25 | 25 | | 34 |
| Confl. Bikes (#/hr) | | | 1 | | | | | | | | | |
| Heavy Vehicles (%) | 1% | 0% | 3% | 0% | 5% | 0% | 3% | 1% | 3% | 2% | 2% | 4% |
| Bus Blockages (#/hr) | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Turn Type | Perm | NA | Perm | pm+pt | NA | | pm+pt | NA | Perm | pm+pt | NA | Perm |
| Protected Phases | | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | 2 | 6 | | 6 |
| Actuated Green, G (s) | 17.3 | 17.3 | 17.3 | 26.1 | 26.1 | | 89.4 | 79.0 | 79.0 | 85.4 | 77.0 | 77.0 |
| Effective Green, g (s) | 17.3 | 17.3 | 17.3 | 26.1 | 26.1 | | 89.4 | 79.0 | 79.0 | 85.4 | 77.0 | 77.0 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.13 | 0.20 | 0.20 | | 0.69 | 0.61 | 0.61 | 0.66 | 0.59 | 0.59 |
| Clearance Time (s) | 6.5 | 6.5 | 6.5 | 4.0 | 6.5 | | 4.0 | 6.0 | 6.0 | 4.0 | 6.0 | 6.0 |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | 159 | 252 | 196 | 231 | 650 | | 329 | 2171 | 879 | 322 | 2096 | 865 |
| v/s Ratio Prot | | 0.06 | | c0.01 | 0.03 | | c0.04 | 0.32 | | 0.02 | c0.33 | |
| v/s Ratio Perm | c0.09 | | 0.04 | 0.05 | | | 0.28 | | 0.03 | 0.21 | | 0.05 |
| v/c Ratio | 0.68 | 0.43 | 0.27 | 0.32 | 0.17 | | 0.47 | 0.53 | 0.04 | 0.36 | 0.56 | 0.09 |
| Uniform Delay, d1 | 53.7 | 51.8 | 50.7 | 43.4 | 43.0 | | 10.2 | 14.8 | 10.3 | 9.8 | 16.2 | 11.4 |
| Progression Factor | 0.99 | 0.99 | 1.19 | 1.00 | 1.00 | | 1.89 | 1.06 | 3.63 | 0.82 | 0.53 | 0.39 |
| Incremental Delay, d2 | 10.9 | 1.2 | 0.8 | 0.8 | 0.1 | | 0.7 | 0.6 | 0.1 | 0.5 | 0.9 | 0.2 |
| Delay (s) | 64.3 | 52.6 | 61.2 | 44.2 | 43.1 | | 20.0 | 16.3 | 37.3 | 8.6 | 9.4 | 4.6 |
| Level of Service | E | D | E | D | D | | C | B | D | A | A | A |
| Approach Delay (s) | | 59.9 | | | 43.4 | | | 17.6 | | | 8.9 | |
| Approach LOS | | E | | | D | | | B | | | A | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 21.3 | HCM 2000 Level of Service | | | | C | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.56 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | Sum of lost time (s) | | | | 20.5 | | | | |
| Intersection Capacity Utilization | | | 83.9% | ICU Level of Service | | | | E | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
6: Wonderland Road S & Southdale Road W

10-26-2022

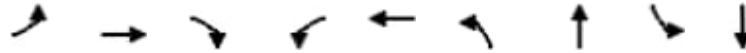


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| Lane Configurations | ↘ | ↗↗ | ↘ | ↘ | ↗↗ | | ↘ | ↗↗ | | ↘ | ↗↗ | |
| Traffic Volume (vph) | 175 | 420 | 85 | 210 | 286 | 372 | 109 | 882 | 110 | 335 | 883 | 70 |
| Future Volume (vph) | 175 | 420 | 85 | 210 | 286 | 372 | 109 | 882 | 110 | 335 | 883 | 70 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 35.0 | | 35.0 | 80.0 | | 0.0 | 75.0 | | 0.0 | 35.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | | 0.95 | 0.98 | 0.98 | | 0.99 | 1.00 | | | 1.00 | |
| Frt | | | 0.850 | | 0.915 | | | 0.983 | | | | 0.989 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1736 | 3574 | 1583 | 1805 | 3195 | 0 | 1752 | 3490 | 0 | 1752 | 3418 | 0 |
| Flt Permitted | 0.142 | | | 0.416 | | | 0.272 | | | 0.103 | | |
| Satd. Flow (perm) | 258 | 3574 | 1504 | 774 | 3195 | 0 | 498 | 3490 | 0 | 190 | 3418 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 93 | | 244 | | | 11 | | | 7 | |
| Link Speed (k/h) | | 60 | | | 60 | | | 60 | | | 60 | |
| Link Distance (m) | | 446.9 | | | 385.1 | | | 438.6 | | | 1206.3 | |
| Travel Time (s) | | 26.8 | | | 23.1 | | | 26.3 | | | 72.4 | |
| Confl. Peds. (#/hr) | 18 | | 32 | 32 | | 18 | 36 | | 21 | 21 | | 36 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Heavy Vehicles (%) | 4% | 1% | 2% | 0% | 2% | 1% | 3% | 1% | 3% | 3% | 4% | 4% |
| Adj. Flow (vph) | 179 | 429 | 87 | 214 | 292 | 380 | 111 | 900 | 112 | 342 | 901 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 179 | 429 | 87 | 214 | 672 | 0 | 111 | 1012 | 0 | 342 | 972 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

Timings

6: Wonderland Road S & Southdale Road W

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↗ | ↑↑ | ↖ | ↗ | ↑↑ | ↖ | ↑↑ | ↖ | ↑↑ |
| Traffic Volume (vph) | 175 | 420 | 85 | 210 | 286 | 109 | 882 | 335 | 883 |
| Future Volume (vph) | 175 | 420 | 85 | 210 | 286 | 109 | 882 | 335 | 883 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | pm+pt | NA | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | 5 | 2 | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 5 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | |
| Minimum Initial (s) | 4.5 | 7.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 38.6 | 38.6 | 9.0 | 38.6 | 9.0 | 35.1 | 9.0 | 35.1 |
| Total Split (s) | 16.0 | 44.0 | 44.0 | 12.0 | 40.0 | 23.0 | 48.0 | 26.0 | 51.0 |
| Total Split (%) | 12.3% | 33.8% | 33.8% | 9.2% | 30.8% | 17.7% | 36.9% | 20.0% | 39.2% |
| Yellow Time (s) | 3.0 | 3.9 | 3.9 | 3.0 | 3.9 | 3.0 | 3.7 | 3.0 | 3.7 |
| All-Red Time (s) | 1.0 | 2.7 | 2.7 | 1.0 | 2.7 | 1.0 | 2.4 | 1.0 | 2.4 |
| 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) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 4.0 | 6.1 | 4.0 | 6.1 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | C-Max | None | C-Max |
| Act Effct Green (s) | 42.6 | 28.2 | 28.2 | 35.0 | 24.4 | 58.7 | 47.3 | 79.2 | 63.8 |
| Actuated g/C Ratio | 0.33 | 0.22 | 0.22 | 0.27 | 0.19 | 0.45 | 0.36 | 0.61 | 0.49 |
| v/c Ratio | 0.82 | 0.55 | 0.22 | 0.79 | 0.84 | 0.35 | 0.79 | 0.80 | 0.58 |
| Control Delay | 60.4 | 47.3 | 7.6 | 57.1 | 42.0 | 17.1 | 43.2 | 62.3 | 11.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 60.4 | 47.3 | 7.6 | 57.1 | 42.0 | 17.1 | 43.2 | 62.3 | 11.4 |
| LOS | E | D | A | E | D | B | D | E | B |
| Approach Delay | | 45.7 | | | 45.7 | | 40.6 | | 24.6 |
| Approach LOS | | D | | | D | | D | | C |

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

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

Natural Cycle: 95

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 37.4

Intersection LOS: D

Intersection Capacity Utilization 97.1%

ICU Level of Service F

Analysis Period (min) 15

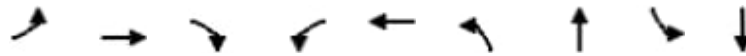
Splits and Phases: 6: Wonderland Road S & Southdale Road W



Queues

6: Wonderland Road S & Southdale Road W

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT |
|------------------------|-------|-------|------|------|-------|------|--------|--------|--------|
| Lane Group Flow (vph) | 179 | 429 | 87 | 214 | 672 | 111 | 1012 | 342 | 972 |
| v/c Ratio | 0.82 | 0.55 | 0.22 | 0.79 | 0.84 | 0.35 | 0.79 | 0.80 | 0.58 |
| Control Delay | 60.4 | 47.3 | 7.6 | 57.1 | 42.0 | 17.1 | 43.2 | 62.3 | 11.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 60.4 | 47.3 | 7.6 | 57.1 | 42.0 | 17.1 | 43.2 | 62.3 | 11.4 |
| Queue Length 50th (m) | 36.1 | 54.6 | 0.0 | 43.9 | 61.1 | 11.8 | 131.6 | 61.6 | 25.9 |
| Queue Length 95th (m) | #60.5 | 66.2 | 11.8 | 60.1 | 78.3 | 23.9 | #173.4 | #126.2 | 37.5 |
| Internal Link Dist (m) | | 422.9 | | | 361.1 | | 414.6 | | 1182.3 |
| Turn Bay Length (m) | 35.0 | | 35.0 | 80.0 | | 75.0 | | 35.0 | |
| Base Capacity (vph) | 221 | 1028 | 498 | 271 | 1002 | 445 | 1278 | 425 | 1681 |
| 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 | 0.81 | 0.42 | 0.17 | 0.79 | 0.67 | 0.25 | 0.79 | 0.80 | 0.58 |























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

6: Wonderland Road S & Southdale Road W

10-26-2022






















| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  |  |  |  | |  |  | |  |  |  |
| Traffic Volume (vph) | 175 | 420 | 85 | 210 | 286 | 372 | 109 | 882 | 110 | 335 | 883 | 70 |
| Future Volume (vph) | 175 | 420 | 85 | 210 | 286 | 372 | 109 | 882 | 110 | 335 | 883 | 70 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | | 1.00 | 0.95 | | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.95 | 1.00 | 0.98 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 0.99 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 0.92 | | 1.00 | 0.98 | | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | 0.95 | 1.00 | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1735 | 3574 | 1504 | 1791 | 3195 | | 1748 | 3492 | | 1752 | 3418 | |
| Flt Permitted | 0.14 | 1.00 | 1.00 | 0.42 | 1.00 | | 0.27 | 1.00 | | 0.10 | 1.00 | |
| Satd. Flow (perm) | 259 | 3574 | 1504 | 784 | 3195 | | 500 | 3492 | | 190 | 3418 | |
| Peak-hour factor, PHF | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Adj. Flow (vph) | 179 | 429 | 87 | 214 | 292 | 380 | 111 | 900 | 112 | 342 | 901 | 71 |
| RTOR Reduction (vph) | 0 | 0 | 68 | 0 | 198 | 0 | 0 | 7 | 0 | 0 | 4 | 0 |
| Lane Group Flow (vph) | 179 | 429 | 19 | 214 | 474 | 0 | 111 | 1005 | 0 | 342 | 968 | 0 |
| Confl. Peds. (#/hr) | 18 | | 32 | 32 | | 18 | 36 | | 21 | 21 | | 36 |
| Heavy Vehicles (%) | 4% | 1% | 2% | 0% | 2% | 1% | 3% | 1% | 3% | 3% | 4% | 4% |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | | pm+pt | NA | | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | |
| Actuated Green, G (s) | 40.0 | 28.2 | 28.2 | 32.4 | 24.4 | | 56.6 | 47.3 | | 77.1 | 63.8 | |
| Effective Green, g (s) | 40.0 | 28.2 | 28.2 | 32.4 | 24.4 | | 56.6 | 47.3 | | 77.1 | 63.8 | |
| Actuated g/C Ratio | 0.31 | 0.22 | 0.22 | 0.25 | 0.19 | | 0.44 | 0.36 | | 0.59 | 0.49 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | | 4.0 | 6.1 | | 4.0 | 6.1 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 213 | 775 | 326 | 257 | 599 | | 306 | 1270 | | 422 | 1677 | |
| v/s Ratio Prot | c0.08 | 0.12 | | 0.05 | 0.15 | | 0.03 | 0.29 | | c0.16 | 0.28 | |
| v/s Ratio Perm | c0.18 | | 0.01 | 0.16 | | | 0.13 | | | c0.32 | | |
| v/c Ratio | 0.84 | 0.55 | 0.06 | 0.83 | 0.79 | | 0.36 | 0.79 | | 0.81 | 0.58 | |
| Uniform Delay, d1 | 37.1 | 45.3 | 40.4 | 44.2 | 50.4 | | 22.2 | 36.9 | | 33.5 | 23.5 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.71 | 0.40 | |
| Incremental Delay, d2 | 24.6 | 0.9 | 0.1 | 20.0 | 7.0 | | 0.7 | 5.1 | | 9.9 | 1.3 | |
| Delay (s) | 61.7 | 46.2 | 40.4 | 64.3 | 57.4 | | 22.9 | 42.0 | | 67.2 | 10.7 | |
| Level of Service | E | D | D | E | E | | C | D | | E | B | |
| Approach Delay (s) | | 49.5 | | | 59.1 | | | 40.2 | | | 25.4 | |
| Approach LOS | | D | | | E | | | D | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 41.1 | HCM 2000 Level of Service | | | | D | | | | |
| HCM 2000 Volume to Capacity ratio | | | 0.86 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 130.0 | Sum of lost time (s) | | | | 20.7 | | | | |
| Intersection Capacity Utilization | | | 97.1% | ICU Level of Service | | | | F | | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings

7: Saunders School Access/Mall Access South (E) & Viscount Rd

10-26-2022






















| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (vph) | 3 | 336 | 10 | 20 | 319 | 31 | 14 | 0 | 36 | 31 | 0 | 12 |
| Future Volume (vph) | 3 | 336 | 10 | 20 | 319 | 31 | 14 | 0 | 36 | 31 | 0 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 30.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.996 | | | | 0.850 | | 0.850 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 1874 | 0 | 1719 | 1863 | 1357 | 1805 | 1568 | 0 | 1805 | 0 | 1495 |
| Flt Permitted | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1805 | 1874 | 0 | 1719 | 1863 | 1357 | 1805 | 1568 | 0 | 1805 | 0 | 1495 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | 20 | |
| Link Distance (m) | | 134.9 | | | 157.9 | | | 74.1 | | | 83.9 | |
| Travel Time (s) | | 12.1 | | | 14.2 | | | 13.3 | | | 15.1 | |
| Confl. Peds. (#/hr) | 15 | | 15 | 15 | | 15 | 11 | | 3 | 3 | | 11 |
| Confl. Bikes (#/hr) | | | 1 | | | 1 | | | | | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles (%) | 0% | 1% | 0% | 5% | 2% | 19% | 0% | 0% | 3% | 0% | 0% | 8% |
| Adj. Flow (vph) | 3 | 357 | 11 | 21 | 339 | 33 | 15 | 0 | 38 | 33 | 0 | 13 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 3 | 368 | 0 | 21 | 339 | 33 | 15 | 38 | 0 | 33 | 0 | 13 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |

| Intersection Summary | |
|-----------------------------------|------------------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 36.5% |
| | ICU Level of Service A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

7: Saunders School Access/Mall Access South (E) & Viscount Rd























10-26-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  | |  | |  |
| Traffic Volume (veh/h) | 3 | 336 | 10 | 20 | 319 | 31 | 14 | 0 | 36 | 31 | 0 | 12 |
| Future Volume (Veh/h) | 3 | 336 | 10 | 20 | 319 | 31 | 14 | 0 | 36 | 31 | 0 | 12 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 3 | 357 | 11 | 21 | 339 | 33 | 15 | 0 | 38 | 33 | 0 | 13 |
| Pedestrians | | 11 | | | 3 | | | 15 | | | 15 | |
| Lane Width (m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Walking Speed (m/s) | | 1.2 | | | 1.2 | | | 1.2 | | | 1.2 | |
| Percent Blockage | | 1 | | | 0 | | | 1 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (m) | | 135 | | | 158 | | | | | | | |
| pX, platoon unblocked | 0.98 | | | 1.00 | | | 0.99 | 0.99 | 1.00 | 0.99 | 0.99 | 0.98 |
| vC, conflicting volume | 387 | | | 383 | | | 788 | 812 | 380 | 800 | 785 | 365 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 370 | | | 379 | | | 770 | 795 | 376 | 782 | 767 | 348 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.3 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.4 |
| p0 queue free % | 100 | | | 98 | | | 95 | 100 | 94 | 88 | 100 | 98 |
| cM capacity (veh/h) | 1167 | | | 1145 | | | 292 | 304 | 656 | 278 | 316 | 657 |
| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | NB 2 | SB 1 | SB 2 | | | |
| Volume Total | 3 | 368 | 21 | 339 | 33 | 15 | 38 | 33 | 13 | | | |
| Volume Left | 3 | 0 | 21 | 0 | 0 | 15 | 0 | 33 | 0 | | | |
| Volume Right | 0 | 11 | 0 | 0 | 33 | 0 | 38 | 0 | 13 | | | |
| cSH | 1167 | 1700 | 1145 | 1700 | 1700 | 292 | 656 | 278 | 657 | | | |
| Volume to Capacity | 0.00 | 0.22 | 0.02 | 0.20 | 0.02 | 0.05 | 0.06 | 0.12 | 0.02 | | | |
| Queue Length 95th (m) | 0.1 | 0.0 | 0.4 | 0.0 | 0.0 | 1.3 | 1.5 | 3.2 | 0.5 | | | |
| Control Delay (s) | 8.1 | 0.0 | 8.2 | 0.0 | 0.0 | 18.0 | 10.8 | 19.7 | 10.6 | | | |
| Lane LOS | A | | A | | | C | B | C | B | | | |
| Approach Delay (s) | 0.1 | | 0.4 | | | 12.9 | | 17.1 | | | | |
| Approach LOS | | | | | | B | | C | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 1.9 | | | | | | | | | |
| Intersection Capacity Utilization | | | 36.5% | | | ICU Level of Service | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

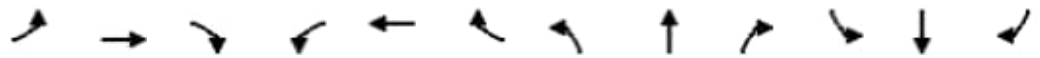
10-26-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  |  |  |  |  | |  |  |
| Traffic Volume (vph) | 22 | 142 | 28 | 32 | 255 | 62 | 52 | 1 | 48 | 158 | 0 | 34 |
| Future Volume (vph) | 22 | 142 | 28 | 32 | 255 | 62 | 52 | 1 | 48 | 158 | 0 | 34 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 30.0 | | 0.0 | 50.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 0 | 0 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | 1.00 | 0.99 | | 0.99 | | 0.99 | 1.00 | 0.97 | | | 0.99 | 0.98 |
| Frt | | 0.975 | | | | 0.850 | | 0.853 | | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1719 | 1828 | 0 | 1805 | 1881 | 1455 | 1805 | 1565 | 0 | 0 | 1752 | 1524 |
| Flt Permitted | 0.560 | | | 0.647 | | | 0.654 | | | | 0.724 | |
| Satd. Flow (perm) | 1012 | 1828 | 0 | 1218 | 1881 | 1435 | 1240 | 1565 | 0 | 0 | 1317 | 1490 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 17 | | | | 64 | | 49 | | | | 45 |
| Link Speed (k/h) | | 40 | | | 40 | | | 20 | | | 20 | |
| Link Distance (m) | | 153.2 | | | 134.9 | | | 64.6 | | | 87.9 | |
| Travel Time (s) | | 13.8 | | | 12.1 | | | 11.6 | | | 15.8 | |
| Confl. Peds. (#/hr) | 2 | | 7 | 7 | | 2 | 2 | | 13 | 13 | | 2 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 5% | 1% | 0% | 0% | 1% | 11% | 0% | 0% | 0% | 3% | 0% | 6% |
| Adj. Flow (vph) | 23 | 146 | 29 | 33 | 263 | 64 | 54 | 1 | 49 | 163 | 0 | 35 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 23 | 175 | 0 | 33 | 263 | 64 | 54 | 50 | 0 | 0 | 163 | 35 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | Yes | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | | Left | Thru | Right | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |

Lanes, Volumes, Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-26-2022

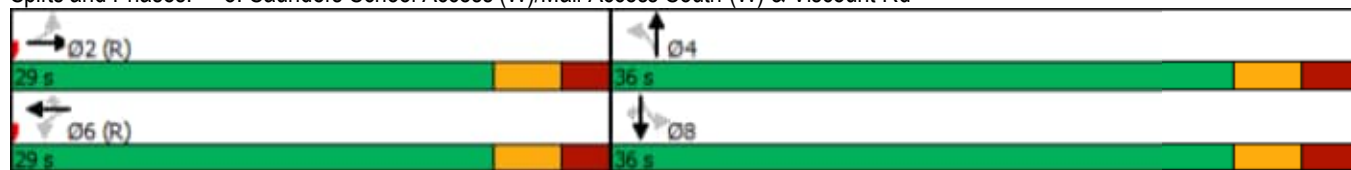


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-----|-------|-------|-------|
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 2 | | | 6 | | | 4 | | | 8 | |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 |
| Detector Phase | 2 | 2 | | 6 | 6 | 6 | 4 | 4 | | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 29.0 | 29.0 | | 29.0 | 29.0 | 29.0 | 36.0 | 36.0 | | 36.0 | 36.0 | 36.0 |
| Total Split (%) | 44.6% | 44.6% | | 44.6% | 44.6% | 44.6% | 55.4% | 55.4% | | 55.4% | 55.4% | 55.4% |
| Maximum Green (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | 30.1 | 30.1 | 30.1 |
| Yellow Time (s) | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | | 2.6 | 2.6 | 2.6 |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | C-Max | C-Max | | C-Max | C-Max | C-Max | Max | Max | | Max | Max | Max |
| Walk Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 9.0 | 9.0 | | 9.0 | 9.0 | 9.0 |
| Flash Dont Walk (s) | 12.0 | 12.0 | | 12.0 | 12.0 | 12.0 | 19.0 | 19.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | | 30.1 | 30.1 |
| Actuated g/C Ratio | 0.36 | 0.36 | | 0.36 | 0.36 | 0.36 | 0.46 | 0.46 | | | 0.46 | 0.46 |
| v/c Ratio | 0.06 | 0.26 | | 0.08 | 0.39 | 0.12 | 0.09 | 0.07 | | | 0.27 | 0.05 |
| Control Delay | 14.4 | 14.6 | | 14.3 | 17.9 | 4.6 | 10.4 | 3.7 | | | 12.2 | 3.0 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.0 | 0.0 |
| Total Delay | 14.4 | 14.6 | | 14.3 | 17.9 | 4.6 | 10.4 | 3.7 | | | 12.2 | 3.0 |
| LOS | B | B | | B | B | A | B | A | | | B | A |
| Approach Delay | | 14.6 | | | 15.2 | | | 7.2 | | | 10.6 | |
| Approach LOS | | B | | | B | | | A | | | B | |

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 12 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 13.0
 Intersection LOS: B
 Intersection Capacity Utilization 77.1%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Timings

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-26-2022



| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↗ | ↘ | ↗ | ↖ | ↗ | ↗ | ↘ | | ↖ | ↗ |
| Traffic Volume (vph) | 22 | 142 | 32 | 255 | 62 | 52 | 1 | 158 | 0 | 34 |
| Future Volume (vph) | 22 | 142 | 32 | 255 | 62 | 52 | 1 | 158 | 0 | 34 |
| Turn Type | Perm | NA | Perm | NA | Perm | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 2 | | 6 | | | 4 | | 8 | |
| Permitted Phases | 2 | | 6 | | 6 | 4 | | 8 | | 8 |
| Detector Phase | 2 | 2 | 6 | 6 | 6 | 4 | 4 | 8 | 8 | 8 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 24.7 | 24.7 | 24.7 | 24.7 | 24.7 | 33.9 | 33.9 | 33.9 | 33.9 | 33.9 |
| Total Split (s) | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 |
| Total Split (%) | 44.6% | 44.6% | 44.6% | 44.6% | 44.6% | 55.4% | 55.4% | 55.4% | 55.4% | 55.4% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| 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) | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | 5.9 | 5.9 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | C-Max | C-Max | C-Max | C-Max | C-Max | Max | Max | Max | Max | Max |
| Act Effct Green (s) | 23.3 | 23.3 | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | 30.1 | 30.1 |
| Actuated g/C Ratio | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.46 | 0.46 | | 0.46 | 0.46 |
| v/c Ratio | 0.06 | 0.26 | 0.08 | 0.39 | 0.12 | 0.09 | 0.07 | | 0.27 | 0.05 |
| Control Delay | 14.4 | 14.6 | 14.3 | 17.9 | 4.6 | 10.4 | 3.7 | | 12.2 | 3.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 14.4 | 14.6 | 14.3 | 17.9 | 4.6 | 10.4 | 3.7 | | 12.2 | 3.0 |
| LOS | B | B | B | B | A | B | A | | B | A |
| Approach Delay | | 14.6 | | 15.2 | | | 7.2 | | 10.6 | |
| Approach LOS | | B | | B | | | A | | B | |

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 12 (18%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.39

Intersection Signal Delay: 13.0

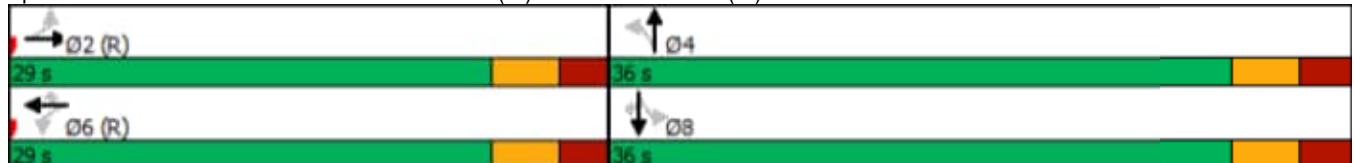
Intersection LOS: B

Intersection Capacity Utilization 77.1%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd



Queues

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

10-26-2022
























| Lane Group | EBL | EBT | WBL | WBT | WBR | NBL | NBT | SBT | SBR |
|------------------------|------|-------|------|-------|------|------|------|------|------|
| Lane Group Flow (vph) | 23 | 175 | 33 | 263 | 64 | 54 | 50 | 163 | 35 |
| v/c Ratio | 0.06 | 0.26 | 0.08 | 0.39 | 0.12 | 0.09 | 0.07 | 0.27 | 0.05 |
| Control Delay | 14.4 | 14.6 | 14.3 | 17.9 | 4.6 | 10.4 | 3.7 | 12.2 | 3.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 14.4 | 14.6 | 14.3 | 17.9 | 4.6 | 10.4 | 3.7 | 12.2 | 3.0 |
| Queue Length 50th (m) | 1.9 | 13.7 | 3.1 | 28.2 | 0.8 | 3.6 | 0.1 | 12.0 | 0.0 |
| Queue Length 95th (m) | 6.3 | 27.0 | 7.7 | 40.4 | 7.1 | 9.3 | 5.0 | 23.6 | 3.4 |
| Internal Link Dist (m) | | 129.2 | | 110.9 | | | 40.6 | 63.9 | |
| Turn Bay Length (m) | 30.0 | | 50.0 | | | | | | |
| Base Capacity (vph) | 362 | 666 | 436 | 674 | 555 | 574 | 751 | 609 | 714 |
| 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 | 0.06 | 0.26 | 0.08 | 0.39 | 0.12 | 0.09 | 0.07 | 0.27 | 0.05 |

Intersection Summary

HCM Signalized Intersection Capacity Analysis

8: Saunders School Access (W)/Mall Access South (W) & Viscount Rd

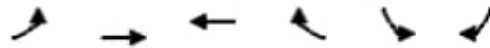
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| |  |  |  |  |  |  |  |  |  |  |  |  | |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
| Lane Configurations |  |  | |  |  |  |  |  | | | |  |  |
| Traffic Volume (vph) | 22 | 142 | 28 | 32 | 255 | 62 | 52 | 1 | 48 | 158 | 0 | 34 | |
| Future Volume (vph) | 22 | 142 | 28 | 32 | 255 | 62 | 52 | 1 | 48 | 158 | 0 | 34 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Total Lost time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 | |
| Lane Util. Factor | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | | 1.00 | 1.00 | |
| Frb, ped/bikes | 1.00 | 0.99 | | 1.00 | 1.00 | 0.99 | 1.00 | 0.97 | | | 1.00 | 0.98 | |
| Flpb, ped/bikes | 1.00 | 1.00 | | 0.99 | 1.00 | 1.00 | 1.00 | 1.00 | | | 0.99 | 1.00 | |
| Frt | 1.00 | 0.98 | | 1.00 | 1.00 | 0.85 | 1.00 | 0.85 | | | 1.00 | 0.85 | |
| Flt Protected | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | | | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1717 | 1828 | | 1788 | 1881 | 1435 | 1802 | 1565 | | | 1728 | 1490 | |
| Flt Permitted | 0.56 | 1.00 | | 0.65 | 1.00 | 1.00 | 0.65 | 1.00 | | | 0.72 | 1.00 | |
| Satd. Flow (perm) | 1012 | 1828 | | 1217 | 1881 | 1435 | 1240 | 1565 | | | 1317 | 1490 | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | |
| Adj. Flow (vph) | 23 | 146 | 29 | 33 | 263 | 64 | 54 | 1 | 49 | 163 | 0 | 35 | |
| RTOR Reduction (vph) | 0 | 11 | 0 | 0 | 0 | 41 | 0 | 26 | 0 | 0 | 0 | 19 | |
| Lane Group Flow (vph) | 23 | 164 | 0 | 33 | 263 | 23 | 54 | 24 | 0 | 0 | 163 | 16 | |
| Confl. Peds. (#/hr) | 2 | | 7 | 7 | | 2 | 2 | | 13 | 13 | | 2 | |
| Heavy Vehicles (%) | 5% | 1% | 0% | 0% | 1% | 11% | 0% | 0% | 0% | 3% | 0% | 6% | |
| Turn Type | Perm | NA | | Perm | NA | Perm | Perm | NA | | Perm | NA | Perm | |
| Protected Phases | | 2 | | | 6 | | | 4 | | | | 8 | |
| Permitted Phases | 2 | | | 6 | | 6 | 4 | | | 8 | | 8 | |
| Actuated Green, G (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | | 30.1 | 30.1 | |
| Effective Green, g (s) | 23.3 | 23.3 | | 23.3 | 23.3 | 23.3 | 30.1 | 30.1 | | | 30.1 | 30.1 | |
| Actuated g/C Ratio | 0.36 | 0.36 | | 0.36 | 0.36 | 0.36 | 0.46 | 0.46 | | | 0.46 | 0.46 | |
| Clearance Time (s) | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 | 5.9 | 5.9 | | | 5.9 | 5.9 | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 362 | 655 | | 436 | 674 | 514 | 574 | 724 | | | 609 | 689 | |
| v/s Ratio Prot | | 0.09 | | | c0.14 | | | 0.02 | | | | | |
| v/s Ratio Perm | 0.02 | | | 0.03 | | 0.02 | 0.04 | | | | c0.12 | 0.01 | |
| v/c Ratio | 0.06 | 0.25 | | 0.08 | 0.39 | 0.04 | 0.09 | 0.03 | | | 0.27 | 0.02 | |
| Uniform Delay, d1 | 13.7 | 14.7 | | 13.7 | 15.6 | 13.6 | 9.8 | 9.5 | | | 10.7 | 9.5 | |
| Progression Factor | 1.00 | 1.00 | | 1.00 | 1.03 | 1.28 | 1.00 | 1.00 | | | 1.00 | 1.00 | |
| Incremental Delay, d2 | 0.3 | 0.9 | | 0.3 | 1.7 | 0.2 | 0.3 | 0.1 | | | 1.1 | 0.1 | |
| Delay (s) | 14.0 | 15.6 | | 14.1 | 17.7 | 17.6 | 10.1 | 9.6 | | | 11.8 | 9.5 | |
| Level of Service | B | B | | B | B | B | B | A | | | B | A | |
| Approach Delay (s) | | 15.4 | | | 17.3 | | | 9.9 | | | 11.4 | | |
| Approach LOS | | B | | | B | | | A | | | B | | |
| Intersection Summary | | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 14.6 | | | | | | | | | B | |
| HCM 2000 Volume to Capacity ratio | | | 0.32 | | | | | | | | | | |
| Actuated Cycle Length (s) | | | 65.0 | | | | | | 11.6 | | | | |
| Intersection Capacity Utilization | | | 77.1% | | | | | | | | | D | |
| Analysis Period (min) | | | 15 | | | | | | | | | | |

c Critical Lane Group

Lanes, Volumes, Timings
 9: Viscount Rd & Woodcrest Rd

10-26-2022



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations | | 4 | 4 | | 4 | |
| Traffic Volume (vph) | 24 | 152 | 266 | 68 | 37 | 19 |
| Future Volume (vph) | 24 | 152 | 266 | 68 | 37 | 19 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | 0.973 | | 0.953 | |
| Flt Protected | | 0.993 | | | 0.968 | |
| Satd. Flow (prot) | 0 | 1871 | 1820 | 0 | 1690 | 0 |
| Flt Permitted | | 0.993 | | | 0.968 | |
| Satd. Flow (perm) | 0 | 1871 | 1820 | 0 | 1690 | 0 |
| Link Speed (k/h) | | 40 | 40 | | 50 | |
| Link Distance (m) | | 15.9 | 153.2 | | 195.3 | |
| Travel Time (s) | | 1.4 | 13.8 | | 14.1 | |
| Confl. Peds. (#/hr) | 19 | | | 19 | | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 0% | 1% | 2% | 0% | 3% | 5% |
| Adj. Flow (vph) | 25 | 157 | 274 | 70 | 38 | 20 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 182 | 344 | 0 | 58 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(m) | | 3.6 | 3.6 | | 3.6 | |
| Link Offset(m) | | 0.0 | 0.0 | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | 4.8 | | 4.8 | |
| Two way Left Turn Lane | | | Yes | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | | 15 | 25 | 15 |
| Sign Control | | Free | Free | | Stop | |

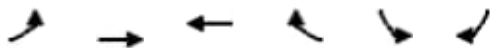
Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 38.3% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis

9: Viscount Rd & Woodcrest Rd

10-26-2022



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|-----------------------------------|-------------|-------------|-------------|------|----------------------|------|
| Lane Configurations | | 4 | 4 | | 4 | |
| Traffic Volume (veh/h) | 24 | 152 | 266 | 68 | 37 | 19 |
| Future Volume (Veh/h) | 24 | 152 | 266 | 68 | 37 | 19 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 25 | 157 | 274 | 70 | 38 | 20 |
| Pedestrians | | | | | 19 | |
| Lane Width (m) | | | | | 3.6 | |
| Walking Speed (m/s) | | | | | 1.2 | |
| Percent Blockage | | | | | 2 | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | TWLTL | | | |
| Median storage veh | | | 2 | | | |
| Upstream signal (m) | | 16 | 153 | | | |
| pX, platoon unblocked | 0.92 | | | | 0.93 | 0.92 |
| vC, conflicting volume | 363 | | | | 535 | 328 |
| vC1, stage 1 conf vol | | | | | 328 | |
| vC2, stage 2 conf vol | | | | | 207 | |
| vCu, unblocked vol | 261 | | | | 392 | 223 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | 5.4 | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 98 | | | | 94 | 97 |
| cM capacity (veh/h) | 1188 | | | | 676 | 731 |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 182 | 344 | 58 | | | |
| Volume Left | 25 | 0 | 38 | | | |
| Volume Right | 0 | 70 | 20 | | | |
| cSH | 1188 | 1700 | 694 | | | |
| Volume to Capacity | 0.02 | 0.20 | 0.08 | | | |
| Queue Length 95th (m) | 0.5 | 0.0 | 2.2 | | | |
| Control Delay (s) | 1.3 | 0.0 | 10.7 | | | |
| Lane LOS | A | | B | | | |
| Approach Delay (s) | 1.3 | 0.0 | 10.7 | | | |
| Approach LOS | | | B | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 1.5 | | | |
| Intersection Capacity Utilization | | | 38.3% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|-------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Traffic Volume (vph) | 0 | 3 | 107 | 11 | 7 | 36 | 49 | 14 | 21 | 139 | 74 | 4 |
| Future Volume (vph) | 0 | 3 | 107 | 11 | 7 | 36 | 49 | 14 | 21 | 139 | 74 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | 0.868 | | | 0.911 | | | 0.910 | | | 0.997 | |
| Flt Protected | | | | | 0.990 | | 0.950 | | | | 0.969 | |
| Satd. Flow (prot) | 0 | 1649 | 0 | 0 | 1540 | 0 | 1805 | 1374 | 0 | 0 | 1836 | 0 |
| Flt Permitted | | | | | 0.990 | | 0.950 | | | | 0.969 | |
| Satd. Flow (perm) | 0 | 1649 | 0 | 0 | 1540 | 0 | 1805 | 1374 | 0 | 0 | 1836 | 0 |
| Link Speed (k/h) | | 20 | | | 20 | | | 20 | | | 20 | |
| Link Distance (m) | | 78.9 | | | 182.4 | | | 87.9 | | | 68.5 | |
| Travel Time (s) | | 14.2 | | | 32.8 | | | 15.8 | | | 12.3 | |
| Confl. Peds. (#/hr) | 9 | | 6 | 6 | | 9 | | | 1 | 1 | | |
| Confl. Bikes (#/hr) | | | | | | 2 | | | | | | 1 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%) | 0% | 0% | 0% | 45% | 14% | 0% | 0% | 0% | 43% | 0% | 0% | 0% |
| Adj. Flow (vph) | 0 | 3 | 122 | 13 | 8 | 41 | 56 | 16 | 24 | 158 | 84 | 5 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 125 | 0 | 0 | 62 | 0 | 56 | 40 | 0 | 0 | 247 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |

Intersection Summary

Area Type: Other

Control Type: Unsignalized

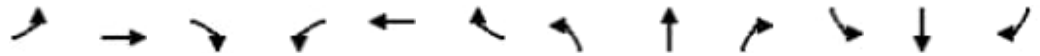
Intersection Capacity Utilization 36.4% ICU Level of Service A

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis

10: Mall Access South (W)/Underground Parking Access & Internal Mall Rd

10-26-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | + | | | + | | + | + | | | + | |
| Sign Control | | Stop | | | Stop | | | Stop | | | Stop | |
| Traffic Volume (vph) | 0 | 3 | 107 | 11 | 7 | 36 | 49 | 14 | 21 | 139 | 74 | 4 |
| Future Volume (vph) | 0 | 3 | 107 | 11 | 7 | 36 | 49 | 14 | 21 | 139 | 74 | 4 |
| Peak Hour Factor | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Hourly flow rate (vph) | 0 | 3 | 122 | 12 | 8 | 41 | 56 | 16 | 24 | 158 | 84 | 5 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | SB 1 |
|-----------------------|-------|-------|------|------|------|
| Volume Total (vph) | 125 | 61 | 56 | 40 | 247 |
| Volume Left (vph) | 0 | 12 | 56 | 0 | 158 |
| Volume Right (vph) | 122 | 41 | 0 | 24 | 5 |
| Hadj (s) | -0.59 | -0.18 | 0.50 | 0.02 | 0.12 |
| Departure Headway (s) | 4.2 | 4.7 | 5.7 | 5.2 | 4.7 |
| Degree Utilization, x | 0.15 | 0.08 | 0.09 | 0.06 | 0.32 |
| Capacity (veh/h) | 780 | 698 | 606 | 659 | 736 |
| Control Delay (s) | 8.0 | 8.1 | 8.0 | 7.3 | 9.9 |
| Approach Delay (s) | 8.0 | 8.1 | 7.7 | | 9.9 |
| Approach LOS | A | A | A | | A |

| Intersection Summary | |
|-----------------------------------|-------|
| Delay | 8.8 |
| Level of Service | A |
| Intersection Capacity Utilization | 36.4% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

Lanes, Volumes, Timings
 11: Mall Access South (E) & Internal Mall Rd

10-26-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 155 | 21 | 21 | 45 | 12 | 22 |
| Future Volume (vph) | 155 | 21 | 21 | 45 | 12 | 22 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.984 | | | 0.850 | | |
| Flt Protected | | | | 0.984 | 0.950 | |
| Satd. Flow (prot) | 1761 | 0 | 0 | 1840 | 1142 | 1615 |
| Flt Permitted | | | | 0.984 | 0.950 | |
| Satd. Flow (perm) | 1761 | 0 | 0 | 1840 | 1142 | 1615 |
| Link Speed (k/h) | 20 | | | 20 | 20 | |
| Link Distance (m) | 182.4 | | | 55.5 | 83.9 | |
| Travel Time (s) | 32.8 | | | 10.0 | 15.1 | |
| Confl. Peds. (#/hr) | 21 | | 21 | 5 | | 7 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 7% | 0% | 5% | 0% | 58% | 0% |
| Adj. Flow (vph) | 161 | 22 | 22 | 47 | 13 | 23 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 183 | 0 | 0 | 69 | 13 | 23 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | | 0.0 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | 25 | | 15 |
| Sign Control | Stop | | | Stop | Stop | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 30.5% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis
 11: Mall Access South (E) & Internal Mall Rd

10-26-2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|------------------------|------|------|------|------|------|------|
| Lane Configurations | | | | | | |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 155 | 21 | 21 | 45 | 12 | 22 |
| Future Volume (vph) | 155 | 21 | 21 | 45 | 12 | 22 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 161 | 22 | 22 | 47 | 12 | 23 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 |
|-----------------------|------|------|------|-------|
| Volume Total (vph) | 183 | 69 | 12 | 23 |
| Volume Left (vph) | 0 | 22 | 12 | 0 |
| Volume Right (vph) | 22 | 0 | 0 | 23 |
| Hadj (s) | 0.03 | 0.09 | 1.49 | -0.70 |
| Departure Headway (s) | 4.1 | 4.3 | 6.5 | 4.3 |
| Degree Utilization, x | 0.21 | 0.08 | 0.02 | 0.03 |
| Capacity (veh/h) | 866 | 829 | 525 | 776 |
| Control Delay (s) | 8.2 | 7.6 | 8.5 | 6.3 |
| Approach Delay (s) | 8.2 | 7.6 | 7.0 | |
| Approach LOS | A | A | A | |

| Intersection Summary | | | |
|-----------------------------------|-------|-----|------------------------|
| Delay | | 7.9 | |
| Level of Service | | A | |
| Intersection Capacity Utilization | 30.5% | | ICU Level of Service A |
| Analysis Period (min) | | 15 | |

Lanes, Volumes, Timings
 12: Mall Access East (S) & Internal Mall Road











10-26-2022



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|-----------------------------------|--------------|-------|-------|------------------------|------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 60 | 50 | 6 | 180 | 176 | 9 |
| Future Volume (vph) | 60 | 50 | 6 | 180 | 176 | 9 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | 0.850 | 0.869 | | | |
| Flt Protected | 0.950 | | | | | 0.955 |
| Satd. Flow (prot) | 1805 | 1583 | 1561 | 0 | 0 | 1788 |
| Flt Permitted | 0.950 | | | | | 0.955 |
| Satd. Flow (perm) | 1805 | 1583 | 1561 | 0 | 0 | 1788 |
| Link Speed (k/h) | 20 | | 20 | | | 20 |
| Link Distance (m) | 105.0 | | 76.6 | | | 159.1 |
| Travel Time (s) | 18.9 | | 13.8 | | | 28.6 |
| Confl. Peds. (#/hr) | 36 | | | 3 | 3 | |
| Confl. Bikes (#/hr) | | 1 | | 3 | | |
| Peak Hour Factor | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| Heavy Vehicles (%) | 0% | 2% | 0% | 6% | 1% | 11% |
| Adj. Flow (vph) | 79 | 66 | 8 | 237 | 232 | 12 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 79 | 66 | 245 | 0 | 0 | 244 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(m) | 3.6 | | 0.0 | | | 0.0 |
| Link Offset(m) | 0.0 | | 0.0 | | | 0.0 |
| Crosswalk Width(m) | 4.8 | | 4.8 | | | 4.8 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | 15 | | 15 | 25 | |
| Sign Control | Stop | | Stop | | | Stop |
| Intersection Summary | | | | | | |
| Area Type: | Other | | | | | |
| Control Type: | Unsignalized | | | | | |
| Intersection Capacity Utilization | 35.5% | | | ICU Level of Service A | | |
| Analysis Period (min) | 15 | | | | | |

HCM Unsignalized Intersection Capacity Analysis
 12: Mall Access East (S) & Internal Mall Road

10-26-2022

| |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
| Lane Configurations |  |  |  | | |  |
| Sign Control | Stop | | Stop | | | Stop |
| Traffic Volume (vph) | 60 | 50 | 6 | 180 | 176 | 9 |
| Future Volume (vph) | 60 | 50 | 6 | 180 | 176 | 9 |
| Peak Hour Factor | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 |
| Hourly flow rate (vph) | 79 | 66 | 8 | 237 | 232 | 12 |
| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 | | |
| Volume Total (vph) | 79 | 66 | 245 | 244 | | |
| Volume Left (vph) | 79 | 0 | 0 | 232 | | |
| Volume Right (vph) | 0 | 66 | 237 | 0 | | |
| Hadj (s) | 0.50 | -0.67 | -0.48 | 0.22 | | |
| Departure Headway (s) | 6.1 | 4.9 | 4.1 | 4.8 | | |
| Degree Utilization, x | 0.13 | 0.09 | 0.28 | 0.32 | | |
| Capacity (veh/h) | 547 | 671 | 839 | 724 | | |
| Control Delay (s) | 8.8 | 7.2 | 8.7 | 10.0 | | |
| Approach Delay (s) | 8.1 | | 8.7 | 10.0 | | |
| Approach LOS | A | | A | B | | |
| Intersection Summary | | | | | | |
| Delay | | | 9.1 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 35.5% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
 13: Internal Mall Road & Mall Access East (N)

10-26-2022














| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|----------------------------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 89 | 142 | 25 | 36 | 37 | 6 |
| Future Volume (vph) | 89 | 142 | 25 | 36 | 37 | 6 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | 0.917 | | | | | 0.980 |
| Flt Protected | | | 0.950 | | | 0.959 |
| Satd. Flow (prot) | 1711 | 0 | 1805 | 1881 | 1786 | 0 |
| Flt Permitted | | | 0.950 | | | 0.959 |
| Satd. Flow (perm) | 1711 | 0 | 1805 | 1881 | 1786 | 0 |
| Link Speed (k/h) | 20 | | | | | 20 |
| Link Distance (m) | 158.8 | | | 100.3 | 159.1 | |
| Travel Time (s) | 28.6 | | | 18.1 | 28.6 | |
| Confl. Peds. (#/hr) | 2 | | 2 | | | 7 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Heavy Vehicles (%) | 0% | 3% | 0% | 1% | 0% | 0% |
| Adj. Flow (vph) | 114 | 182 | 32 | 46 | 47 | 8 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 296 | 0 | 32 | 46 | 55 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 3.6 | | | 3.6 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 15 | | 25 | 25 | | 15 |
| Sign Control | Stop | | | Stop | Stop | |

Intersection Summary

| | |
|-----------------------------------|--------------|
| Area Type: | Other |
| Control Type: | Unsignalized |
| Intersection Capacity Utilization | 32.3% |
| ICU Level of Service | A |
| Analysis Period (min) | 15 |

HCM Unsignalized Intersection Capacity Analysis
 13: Internal Mall Road & Mall Access East (N)

10-26-2022

| |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations |  | |  |  |  |  |
| Sign Control | Stop | | | Stop | Stop | |
| Traffic Volume (vph) | 89 | 142 | 25 | 36 | 37 | 6 |
| Future Volume (vph) | 89 | 142 | 25 | 36 | 37 | 6 |
| Peak Hour Factor | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 | 0.78 |
| Hourly flow rate (vph) | 114 | 182 | 32 | 46 | 47 | 8 |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | | |
| Volume Total (vph) | 296 | 32 | 46 | 55 | | |
| Volume Left (vph) | 0 | 32 | 0 | 47 | | |
| Volume Right (vph) | 182 | 0 | 0 | 8 | | |
| Hadj (s) | -0.34 | 0.50 | 0.02 | 0.08 | | |
| Departure Headway (s) | 3.9 | 5.3 | 4.8 | 4.8 | | |
| Degree Utilization, x | 0.32 | 0.05 | 0.06 | 0.07 | | |
| Capacity (veh/h) | 909 | 654 | 720 | 700 | | |
| Control Delay (s) | 8.7 | 7.4 | 7.0 | 8.1 | | |
| Approach Delay (s) | 8.7 | 7.1 | | 8.1 | | |
| Approach LOS | A | A | | A | | |
| Intersection Summary | | | | | | |
| Delay | | | 8.4 | | | |
| Level of Service | | | A | | | |
| Intersection Capacity Utilization | | | 32.3% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

Lanes, Volumes, Timings
14: Viscount Rd

10-26-2022

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|----------------------------|-------|-------|------|-------|-------|-------|
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑ | | | ↑ | ↘ | |
| Traffic Volume (vph) | 176 | 0 | 0 | 285 | 0 | 0 |
| Future Volume (vph) | 176 | 0 | 0 | 285 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 1881 | 0 | 0 | 1863 | 1900 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 1881 | 0 | 0 | 1863 | 1900 | 0 |
| Right Turn on Red | | Yes | | | | Yes |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (k/h) | 40 | | | 50 | 50 | |
| Link Distance (m) | 218.9 | | | 0.0 | 20.6 | |
| Travel Time (s) | 19.7 | | | 0.0 | 1.5 | |
| Confl. Peds. (#/hr) | | | | | 11 | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Heavy Vehicles (%) | 1% | 0% | 0% | 2% | 0% | 0% |
| Adj. Flow (vph) | 181 | 0 | 0 | 294 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 181 | 0 | 0 | 294 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(m) | 0.0 | | | 0.0 | 3.6 | |
| Link Offset(m) | 0.0 | | | 0.0 | 0.0 | |
| Crosswalk Width(m) | 4.8 | | | 4.8 | 4.8 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | | 100 | 100 | | 100 | 100 |
| Number of Detectors | 2 | | | 2 | 1 | |
| Detector Template | Thru | | | Thru | Left | |
| Leading Detector (m) | 10.0 | | | 10.0 | 2.0 | |
| Trailing Detector (m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Size(m) | 0.6 | | | 0.6 | 2.0 | |
| Detector 1 Type | CI+Ex | | | CI+Ex | CI+Ex | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | | | 0.0 | 0.0 | |
| Detector 2 Position(m) | 9.4 | | | 9.4 | | |
| Detector 2 Size(m) | 0.6 | | | 0.6 | | |
| Detector 2 Type | CI+Ex | | | CI+Ex | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | 0.0 | | | 0.0 | | |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |

Lanes, Volumes, Timings

14: Viscount Rd

10-26-2022



| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|-------------------------|-------|-----|-----|-------|-------|-----|
| Detector Phase | 4 | | | 8 | 2 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | | | 10.0 | 40.2 | |
| Minimum Split (s) | 16.0 | | | 16.0 | 46.0 | |
| Total Split (s) | 16.0 | | | 16.0 | 46.0 | |
| Total Split (%) | 25.8% | | | 25.8% | 74.2% | |
| Maximum Green (s) | 11.7 | | | 11.7 | 40.2 | |
| Yellow Time (s) | 3.3 | | | 3.3 | 3.3 | |
| All-Red Time (s) | 1.0 | | | 1.0 | 2.5 | |
| Lost Time Adjust (s) | 0.0 | | | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | | | 4.3 | 5.8 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | 3.0 | |
| Recall Mode | Max | | | Max | None | |
| Walk Time (s) | | | | | 35.0 | |
| Flash Dont Walk (s) | | | | | 5.0 | |
| Pedestrian Calls (#/hr) | | | | | 11 | |
| Act Effect Green (s) | 34.9 | | | 34.9 | | |
| Actuated g/C Ratio | 0.87 | | | 0.87 | | |
| v/c Ratio | 0.11 | | | 0.18 | | |
| Control Delay | 6.9 | | | 7.0 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 6.9 | | | 7.0 | | |
| LOS | A | | | A | | |
| Approach Delay | 6.9 | | | 7.0 | | |
| Approach LOS | A | | | A | | |

Intersection Summary

| | |
|------------------------------------|------------------|
| Area Type: | Other |
| Cycle Length: | 62 |
| Actuated Cycle Length: | 40.2 |
| Natural Cycle: | 65 |
| Control Type: | Semi Act-Uncoord |
| Maximum v/c Ratio: | 0.18 |
| Intersection Signal Delay: | 7.0 |
| Intersection LOS: | A |
| Intersection Capacity Utilization: | 18.6% |
| ICU Level of Service: | A |
| Analysis Period (min): | 15 |

Splits and Phases: 14: Viscount Rd



Timings
14: Viscount Rd

10-26-2022

| | → | ← | |
|----------------------|-------|-------|------|
| Lane Group | EBT | WBT | Ø2 |
| Lane Configurations | ↑ | ↑ | |
| Traffic Volume (vph) | 176 | 285 | |
| Future Volume (vph) | 176 | 285 | |
| Turn Type | NA | NA | |
| Protected Phases | 4 | 8 | 2 |
| Permitted Phases | | | |
| Detector Phase | 4 | 8 | |
| Switch Phase | | | |
| Minimum Initial (s) | 10.0 | 10.0 | 40.2 |
| Minimum Split (s) | 16.0 | 16.0 | 46.0 |
| Total Split (s) | 16.0 | 16.0 | 46.0 |
| Total Split (%) | 25.8% | 25.8% | 74% |
| Yellow Time (s) | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 1.0 | 1.0 | 2.5 |
| Lost Time Adjust (s) | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.3 | 4.3 | |
| Lead/Lag | | | |
| Lead-Lag Optimize? | | | |
| Recall Mode | Max | Max | None |
| Act Effct Green (s) | 34.9 | 34.9 | |
| Actuated g/C Ratio | 0.87 | 0.87 | |
| v/c Ratio | 0.11 | 0.18 | |
| Control Delay | 6.9 | 7.0 | |
| Queue Delay | 0.0 | 0.0 | |
| Total Delay | 6.9 | 7.0 | |
| LOS | A | A | |
| Approach Delay | 6.9 | 7.0 | |
| Approach LOS | A | A | |

Intersection Summary

| | |
|-----------------------------------------|------------------------|
| Cycle Length: 62 | |
| Actuated Cycle Length: 40.2 | |
| Natural Cycle: 65 | |
| Control Type: Semi Act-Uncoord | |
| Maximum v/c Ratio: 0.18 | |
| Intersection Signal Delay: 7.0 | Intersection LOS: A |
| Intersection Capacity Utilization 18.6% | ICU Level of Service A |
| Analysis Period (min) 15 | |

Splits and Phases: 14: Viscount Rd



Queues

14: Viscount Rd

10-26-2022

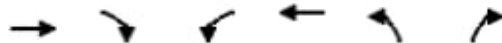


| Lane Group | EBT | WBT |
|-----------------------------|-------|------|
| Lane Group Flow (vph) | 181 | 294 |
| v/c Ratio | 0.11 | 0.18 |
| Control Delay | 6.9 | 7.0 |
| Queue Delay | 0.0 | 0.0 |
| Total Delay | 6.9 | 7.0 |
| Queue Length 50th (m) | 0.0 | 0.0 |
| Queue Length 95th (m) | 35.1 | 56.4 |
| Internal Link Dist (m) | 194.9 | 0.1 |
| Turn Bay Length (m) | | |
| Base Capacity (vph) | 1635 | 1620 |
| Starvation Cap Reductn | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 |
| Storage Cap Reductn | 0 | 0 |
| Reduced v/c Ratio | 0.11 | 0.18 |
| Intersection Summary | | |

HCM Signalized Intersection Capacity Analysis

14: Viscount Rd

10-26-2022



| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|-----------------------------------|------|------|-------|------|---------------------------|------|
| Lane Configurations | ↑ | | | ↑ | ↘ | |
| Traffic Volume (vph) | 176 | 0 | 0 | 285 | 0 | 0 |
| Future Volume (vph) | 176 | 0 | 0 | 285 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.3 | | | 4.3 | | |
| Lane Util. Factor | 1.00 | | | 1.00 | | |
| Frbp, ped/bikes | 1.00 | | | 1.00 | | |
| Flpb, ped/bikes | 1.00 | | | 1.00 | | |
| Frt | 1.00 | | | 1.00 | | |
| Flt Protected | 1.00 | | | 1.00 | | |
| Satd. Flow (prot) | 1881 | | | 1863 | | |
| Flt Permitted | 1.00 | | | 1.00 | | |
| Satd. Flow (perm) | 1881 | | | 1863 | | |
| Peak-hour factor, PHF | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Adj. Flow (vph) | 181 | 0 | 0 | 294 | 0 | 0 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 0 | 0 |
| Lane Group Flow (vph) | 181 | 0 | 0 | 294 | 0 | 0 |
| Confl. Peds. (#/hr) | | | | | 11 | |
| Heavy Vehicles (%) | 1% | 0% | 0% | 2% | 0% | 0% |
| Turn Type | NA | | | NA | Prot | |
| Protected Phases | 4 | | | 8 | 2 | |
| Permitted Phases | | | | | | |
| Actuated Green, G (s) | 30.5 | | | 30.5 | | |
| Effective Green, g (s) | 30.5 | | | 30.5 | | |
| Actuated g/C Ratio | 0.68 | | | 0.68 | | |
| Clearance Time (s) | 4.3 | | | 4.3 | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Lane Grp Cap (vph) | 1280 | | | 1268 | | |
| v/s Ratio Prot | 0.10 | | | 0.16 | | |
| v/s Ratio Perm | | | | | | |
| v/c Ratio | 0.14 | | | 0.23 | | |
| Uniform Delay, d1 | 2.5 | | | 2.7 | | |
| Progression Factor | 1.00 | | | 1.00 | | |
| Incremental Delay, d2 | 0.2 | | | 0.4 | | |
| Delay (s) | 2.8 | | | 3.1 | | |
| Level of Service | A | | | A | | |
| Approach Delay (s) | 2.8 | | | 3.1 | 0.0 | |
| Approach LOS | A | | | A | A | |
| Intersection Summary | | | | | | |
| HCM 2000 Control Delay | | | 3.0 | | HCM 2000 Level of Service | A |
| HCM 2000 Volume to Capacity ratio | | | 0.20 | | | |
| Actuated Cycle Length (s) | | | 44.8 | | Sum of lost time (s) | 10.1 |
| Intersection Capacity Utilization | | | 18.6% | | ICU Level of Service | A |
| Analysis Period (min) | | | 15 | | | |
| c Critical Lane Group | | | | | | |

FUTURE TOTAL OPTIMIZED



CANADA | INDIA | AFRICA | MIDDLE EAST

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-26-2022

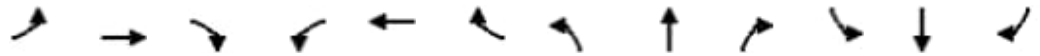


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↗ | ↘ | ↘ | ↗ | ↘ | ↘ | ↗ | ↘ | ↘ | ↗ | ↘ |
| Traffic Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 | 55 |
| Future Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | | 0.0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.99 | | 0.97 | 0.99 | | 0.98 | 1.00 | | 0.95 | | 1.00 | |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.993 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 3574 | 1482 | 1719 | 3343 | 1568 | 1671 | 3409 | 1568 | 1787 | 3455 | 0 |
| Flt Permitted | 0.526 | | | 0.252 | | | 0.142 | | | 0.092 | | |
| Satd. Flow (perm) | 974 | 3574 | 1445 | 453 | 3343 | 1535 | 250 | 3409 | 1496 | 173 | 3455 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 143 | | | 306 | | | 142 | | | 5 |
| Link Speed (k/h) | | 50 | | | 50 | | | 50 | | | 50 | |
| Link Distance (m) | | 242.3 | | | 231.0 | | | 353.5 | | | 276.8 | |
| Travel Time (s) | | 17.4 | | | 16.6 | | | 25.5 | | | 19.9 | |
| Confl. Peds. (#/hr) | 7 | | 10 | 10 | | 7 | 5 | | 25 | 25 | | 5 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 2% | 1% | 9% | 5% | 8% | 3% | 8% | 4% | 3% | 1% | 3% | 18% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| Adj. Flow (vph) | 239 | 488 | 118 | 276 | 298 | 307 | 86 | 1059 | 217 | 361 | 1219 | 57 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 239 | 488 | 118 | 276 | 298 | 307 | 86 | 1059 | 217 | 361 | 1276 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 3.6 | | | 3.6 | | | 3.6 | | | 3.6 | |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | 4.8 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.02 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | |
| Detector Template | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | 9.4 | |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | 0.6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |

Lanes, Volumes, Timings

1: Wonderland Road S & Commissioners Road

10-26-2022

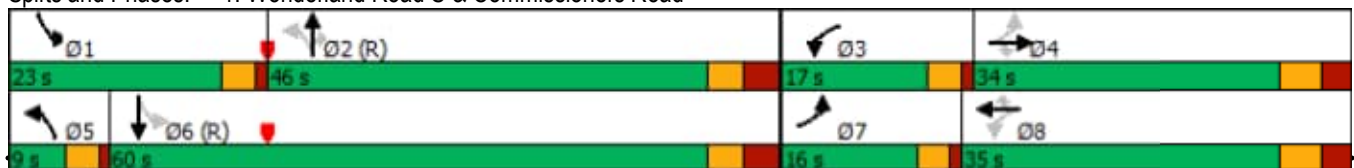


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 | |
| Total Split (s) | 16.0 | 34.0 | 34.0 | 17.0 | 35.0 | 35.0 | 9.0 | 46.0 | 46.0 | 23.0 | 60.0 | |
| Total Split (%) | 13.3% | 28.3% | 28.3% | 14.2% | 29.2% | 29.2% | 7.5% | 38.3% | 38.3% | 19.2% | 50.0% | |
| Maximum Green (s) | 12.0 | 27.4 | 27.4 | 13.0 | 28.4 | 28.4 | 5.0 | 39.3 | 39.3 | 19.0 | 53.3 | |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 | |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max | |
| Walk Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | |
| Flash Dont Walk (s) | | 20.0 | 20.0 | | 20.0 | 20.0 | | 19.0 | 19.0 | | 19.0 | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | |
| Act Effct Green (s) | 36.5 | 21.9 | 21.9 | 38.5 | 22.9 | 22.9 | 49.5 | 39.8 | 39.8 | 70.5 | 56.8 | |
| Actuated g/C Ratio | 0.30 | 0.18 | 0.18 | 0.32 | 0.19 | 0.19 | 0.41 | 0.33 | 0.33 | 0.59 | 0.47 | |
| v/c Ratio | 0.64 | 0.75 | 0.31 | 0.98 | 0.47 | 0.57 | 0.46 | 0.94 | 0.37 | 0.85 | 0.78 | |
| Control Delay | 38.3 | 53.8 | 5.7 | 82.1 | 45.0 | 8.8 | 27.6 | 48.6 | 8.4 | 50.8 | 31.1 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 38.3 | 53.8 | 5.7 | 82.1 | 45.0 | 8.8 | 27.6 | 48.6 | 8.4 | 50.8 | 31.1 | |
| LOS | D | D | A | F | D | A | C | D | A | D | C | |
| Approach Delay | | 42.7 | | | 44.0 | | | 40.9 | | | 35.4 | |
| Approach LOS | | D | | | D | | | D | | | D | |

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 26 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 39.9
 Intersection LOS: D
 Intersection Capacity Utilization 95.4%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Timings

1: Wonderland Road S & Commissioners Road

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | ↘ | ↗↗ | ↗ | ↘ | ↗↗ | ↗ | ↘ | ↗↗ | ↗ | ↘ | ↗↗ |
| Traffic Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 |
| Future Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | |
| Detector Phase | 7 | 4 | 4 | 3 | 8 | 8 | 5 | 2 | 2 | 1 | 6 |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 | 7.0 | 5.0 | 7.0 |
| Minimum Split (s) | 9.0 | 33.6 | 33.6 | 9.0 | 33.6 | 33.6 | 9.0 | 32.7 | 32.7 | 9.0 | 32.7 |
| Total Split (s) | 16.0 | 34.0 | 34.0 | 17.0 | 35.0 | 35.0 | 9.0 | 46.0 | 46.0 | 23.0 | 60.0 |
| Total Split (%) | 13.3% | 28.3% | 28.3% | 14.2% | 29.2% | 29.2% | 7.5% | 38.3% | 38.3% | 19.2% | 50.0% |
| Yellow Time (s) | 3.0 | 3.7 | 3.7 | 3.0 | 3.7 | 3.7 | 3.0 | 3.3 | 3.3 | 3.0 | 3.3 |
| All-Red Time (s) | 1.0 | 2.9 | 2.9 | 1.0 | 2.9 | 2.9 | 1.0 | 3.4 | 3.4 | 1.0 | 3.4 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 |
| Lead/Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag | Lag | Lead | Lag |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Recall Mode | None | None | None | None | None | None | None | C-Max | C-Max | None | C-Max |
| Act Effct Green (s) | 36.5 | 21.9 | 21.9 | 38.5 | 22.9 | 22.9 | 49.5 | 39.8 | 39.8 | 70.5 | 56.8 |
| Actuated g/C Ratio | 0.30 | 0.18 | 0.18 | 0.32 | 0.19 | 0.19 | 0.41 | 0.33 | 0.33 | 0.59 | 0.47 |
| v/c Ratio | 0.64 | 0.75 | 0.31 | 0.98 | 0.47 | 0.57 | 0.46 | 0.94 | 0.37 | 0.85 | 0.78 |
| Control Delay | 38.3 | 53.8 | 5.7 | 82.1 | 45.0 | 8.8 | 27.6 | 48.6 | 8.4 | 50.8 | 31.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 38.3 | 53.8 | 5.7 | 82.1 | 45.0 | 8.8 | 27.6 | 48.6 | 8.4 | 50.8 | 31.1 |
| LOS | D | D | A | F | D | A | C | D | A | D | C |
| Approach Delay | | 42.7 | | | 44.0 | | | 40.9 | | | 35.4 |
| Approach LOS | | D | | | D | | | D | | | D |

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 26 (22%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 39.9

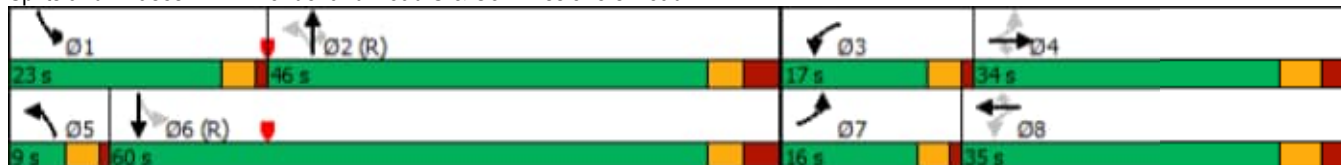
Intersection LOS: D

Intersection Capacity Utilization 95.4%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 1: Wonderland Road S & Commissioners Road



Queues

1: Wonderland Road S & Commissioners Road

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
|------------------------|------|-------|------|-------|-------|-------|------|--------|------|--------|-------|
| Lane Group Flow (vph) | 239 | 488 | 118 | 276 | 298 | 307 | 86 | 1059 | 217 | 361 | 1276 |
| v/c Ratio | 0.64 | 0.75 | 0.31 | 0.98 | 0.47 | 0.57 | 0.46 | 0.94 | 0.37 | 0.85 | 0.78 |
| Control Delay | 38.3 | 53.8 | 5.7 | 82.1 | 45.0 | 8.8 | 27.6 | 48.6 | 8.4 | 50.8 | 31.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 38.3 | 53.8 | 5.7 | 82.1 | 45.0 | 8.8 | 27.6 | 48.6 | 8.4 | 50.8 | 31.1 |
| Queue Length 50th (m) | 44.8 | 61.1 | 0.0 | 53.2 | 35.0 | 0.2 | 6.6 | 146.0 | 17.3 | 67.6 | 137.4 |
| Queue Length 95th (m) | 62.8 | 75.7 | 10.2 | #88.2 | 46.7 | 24.0 | 15.2 | #184.5 | 31.2 | #140.0 | 174.2 |
| Internal Link Dist (m) | | 218.3 | | | 207.0 | | | 329.5 | | | 252.8 |
| Turn Bay Length (m) | 85.0 | | 70.0 | 85.0 | | 140.0 | 30.0 | | 30.0 | 135.0 | |
| Base Capacity (vph) | 375 | 816 | 440 | 282 | 791 | 596 | 185 | 1129 | 590 | 425 | 1638 |
| 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 | 0.64 | 0.60 | 0.27 | 0.98 | 0.38 | 0.52 | 0.46 | 0.94 | 0.37 | 0.85 | 0.78 |






























Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Wonderland Road S & Commissioners Road

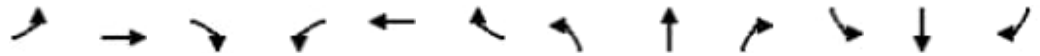
10-26-2022

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |   |  |  |   |  |  |   |  |  |   |   |
| Traffic Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 | 55 |
| Future Volume (vph) | 229 | 468 | 113 | 265 | 286 | 295 | 83 | 1017 | 208 | 347 | 1170 | 55 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | |
| Frbp, ped/bikes | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 0.98 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | |
| Flpb, ped/bikes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Frt | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 1.00 | 0.85 | 1.00 | 0.99 | |
| Flt Protected | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | |
| Satd. Flow (prot) | 1764 | 3574 | 1445 | 1717 | 3343 | 1535 | 1671 | 3409 | 1496 | 1787 | 3456 | |
| Flt Permitted | 0.53 | 1.00 | 1.00 | 0.25 | 1.00 | 1.00 | 0.14 | 1.00 | 1.00 | 0.09 | 1.00 | |
| Satd. Flow (perm) | 978 | 3574 | 1445 | 456 | 3343 | 1535 | 249 | 3409 | 1496 | 172 | 3456 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 239 | 488 | 118 | 276 | 298 | 307 | 86 | 1059 | 217 | 361 | 1219 | 57 |
| RTOR Reduction (vph) | 0 | 0 | 96 | 0 | 0 | 248 | 0 | 0 | 95 | 0 | 3 | 0 |
| Lane Group Flow (vph) | 239 | 488 | 22 | 276 | 298 | 59 | 86 | 1059 | 122 | 361 | 1273 | 0 |
| Confl. Peds. (#/hr) | 7 | | 10 | 10 | | 7 | 5 | | 25 | 25 | | 5 |
| Heavy Vehicles (%) | 2% | 1% | 9% | 5% | 8% | 3% | 8% | 4% | 3% | 1% | 3% | 18% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 |
| Turn Type | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | Perm | pm+pt | NA | |
| Protected Phases | 7 | 4 | | 3 | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | 2 | | 2 | 6 | | |
| Actuated Green, G (s) | 33.9 | 21.9 | 21.9 | 35.9 | 22.9 | 22.9 | 46.7 | 39.7 | 39.7 | 67.8 | 56.8 | |
| Effective Green, g (s) | 33.9 | 21.9 | 21.9 | 35.9 | 22.9 | 22.9 | 46.7 | 39.7 | 39.7 | 67.8 | 56.8 | |
| Actuated g/C Ratio | 0.28 | 0.18 | 0.18 | 0.30 | 0.19 | 0.19 | 0.39 | 0.33 | 0.33 | 0.56 | 0.47 | |
| Clearance Time (s) | 4.0 | 6.6 | 6.6 | 4.0 | 6.6 | 6.6 | 4.0 | 6.7 | 6.7 | 4.0 | 6.7 | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Lane Grp Cap (vph) | 354 | 652 | 263 | 273 | 637 | 292 | 179 | 1127 | 494 | 421 | 1635 | |
| v/s Ratio Prot | 0.07 | 0.14 | | c0.11 | 0.09 | | 0.03 | c0.31 | | c0.17 | 0.37 | |
| v/s Ratio Perm | 0.12 | | 0.01 | c0.19 | | 0.04 | 0.16 | | 0.08 | 0.31 | | |
| v/c Ratio | 0.68 | 0.75 | 0.08 | 1.01 | 0.47 | 0.20 | 0.48 | 0.94 | 0.25 | 0.86 | 0.78 | |
| Uniform Delay, d1 | 36.0 | 46.4 | 40.7 | 38.0 | 43.1 | 40.9 | 24.6 | 39.0 | 29.3 | 34.3 | 26.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.31 | 0.85 | 0.61 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 5.0 | 4.7 | 0.1 | 57.3 | 0.5 | 0.3 | 1.9 | 14.8 | 1.1 | 15.7 | 3.7 | |
| Delay (s) | 41.0 | 51.1 | 40.8 | 95.3 | 43.7 | 41.2 | 34.2 | 48.1 | 18.9 | 50.0 | 30.1 | |
| Level of Service | D | D | D | F | D | D | C | D | B | D | C | |
| Approach Delay (s) | | 46.8 | | | 59.0 | | | 42.6 | | | 34.5 | |
| Approach LOS | | D | | | E | | | D | | | C | |
| Intersection Summary | | | | | | | | | | | | |
| HCM 2000 Control Delay | | | 43.6 | | | | | | | | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | | | 0.96 | | | | | | | | | |
| Actuated Cycle Length (s) | | | 120.0 | | | | | | | | Sum of lost time (s) | 21.3 |
| Intersection Capacity Utilization | | | 95.4% | | | | | | | | ICU Level of Service | F |
| Analysis Period (min) | | | 15 | | | | | | | | | |
| c Critical Lane Group | | | | | | | | | | | | |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↔ | ↗ | | ↔ | | ↗ | ↕ | | ↗ | ↕ | ↗ |
| Traffic Volume (vph) | 318 | 0 | 35 | 4 | 0 | 4 | 18 | 1314 | 13 | 13 | 1397 | 91 |
| Future Volume (vph) | 318 | 0 | 35 | 4 | 0 | 4 | 18 | 1314 | 13 | 13 | 1397 | 91 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (m) | 0.0 | | 0.0 | 0.0 | | 0.0 | 35.0 | | 0.0 | 40.0 | | 35.0 |
| Storage Lanes | 0 | | 1 | 0 | | 0 | 1 | | 0 | 1 | | 1 |
| Taper Length (m) | 7.5 | | | 7.5 | | | 7.5 | | | 7.5 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 |
| Ped Bike Factor | | 0.99 | 0.97 | | 0.98 | | | 1.00 | | | | 0.97 |
| Frt | | | 0.850 | | 0.932 | | | 0.998 | | | | 0.850 |
| Flt Protected | | 0.950 | | | 0.976 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1752 | 1615 | 0 | 1706 | 0 | 1805 | 3565 | 0 | 1805 | 3471 | 1541 |
| Flt Permitted | | 0.752 | | | 0.866 | | 0.118 | | | 0.134 | | |
| Satd. Flow (perm) | 0 | 1369 | 1572 | 0 | 1509 | 0 | 224 | 3565 | 0 | 255 | 3471 | 1496 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 36 | | 23 | | | 1 | | | | 48 |
| Link Speed (k/h) | | 20 | | | 20 | | | 50 | | | | 50 |
| Link Distance (m) | | 105.0 | | | 57.0 | | | 158.8 | | | | 161.3 |
| Travel Time (s) | | 18.9 | | | 10.3 | | | 11.4 | | | | 11.6 |
| Confl. Peds. (#/hr) | 8 | | 10 | 10 | | 8 | 12 | | 14 | 14 | | 12 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 4% | 1% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Adj. Flow (vph) | 331 | 0 | 36 | 4 | 0 | 4 | 19 | 1369 | 14 | 14 | 1455 | 95 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 331 | 36 | 0 | 8 | 0 | 19 | 1383 | 0 | 14 | 1455 | 95 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(m) | | 0.0 | | | 0.0 | | | 3.6 | | | | 3.6 |
| Link Offset(m) | | 0.0 | | | 0.0 | | | 0.0 | | | | 0.0 |
| Crosswalk Width(m) | | 4.8 | | | 4.8 | | | 4.8 | | | | 4.8 |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.05 |
| Turning Speed (k/h) | 25 | | 15 | 25 | | 15 | 25 | | 15 | 25 | | 15 |
| Number of Detectors | 1 | 2 | 1 | 1 | 2 | | 1 | 2 | | 1 | 2 | 1 |
| Detector Template | Left | Thru | Right | Left | Thru | | Left | Thru | | Left | Thru | Right |
| Leading Detector (m) | 2.0 | 10.0 | 2.0 | 2.0 | 10.0 | | 2.0 | 10.0 | | 2.0 | 10.0 | 2.0 |
| Trailing Detector (m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Position(m) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Size(m) | 2.0 | 0.6 | 2.0 | 2.0 | 0.6 | | 2.0 | 0.6 | | 2.0 | 0.6 | 2.0 |
| Detector 1 Type | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(m) | | 9.4 | | | 9.4 | | | 9.4 | | | | 9.4 |
| Detector 2 Size(m) | | 0.6 | | | 0.6 | | | 0.6 | | | | 0.6 |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | Cl+Ex |

Lanes, Volumes, Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022

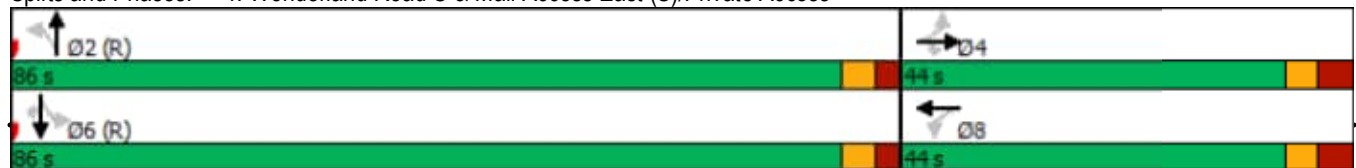


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-------------------------|-------|-------|-------|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | | 2 | 2 | | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | | 28.7 | 28.7 | | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 44.0 | 44.0 | | 86.0 | 86.0 | | 86.0 | 86.0 | 86.0 |
| Total Split (%) | 33.8% | 33.8% | 33.8% | 33.8% | 33.8% | | 66.2% | 66.2% | | 66.2% | 66.2% | 66.2% |
| Maximum Green (s) | 37.3 | 37.3 | 37.3 | 37.3 | 37.3 | | 80.3 | 80.3 | | 80.3 | 80.3 | 80.3 |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.3 | 3.3 | | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | | 2.4 | 2.4 | | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | | C-Max | C-Max | | C-Max | C-Max | C-Max |
| Walk Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | 19.0 | 19.0 | 19.0 | 16.0 | 16.0 | | 16.0 | 16.0 | | 19.0 | 19.0 | 19.0 |
| Pedestrian Calls (#/hr) | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.4 | 34.4 | | 34.4 | | 83.2 | 83.2 | | 83.2 | 83.2 | 83.2 |
| Actuated g/C Ratio | | 0.26 | 0.26 | | 0.26 | | 0.64 | 0.64 | | 0.64 | 0.64 | 0.64 |
| v/c Ratio | | 0.91 | 0.08 | | 0.02 | | 0.13 | 0.61 | | 0.09 | 0.66 | 0.10 |
| Control Delay | | 76.3 | 10.8 | | 2.6 | | 8.1 | 8.0 | | 7.2 | 15.1 | 2.3 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 76.3 | 10.8 | | 2.6 | | 8.1 | 8.0 | | 7.2 | 15.1 | 2.3 |
| LOS | | E | B | | A | | A | A | | A | B | A |
| Approach Delay | | 69.9 | | | 2.6 | | | 8.0 | | | 14.3 | |
| Approach LOS | | E | | | A | | | A | | | B | |

Intersection Summary

Area Type: Other
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 40 (31%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 17.7
 Intersection LOS: B
 Intersection Capacity Utilization 73.8%
 ICU Level of Service D
 Analysis Period (min) 15

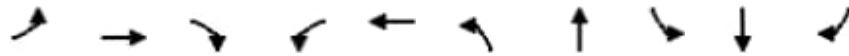
Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Timings

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022

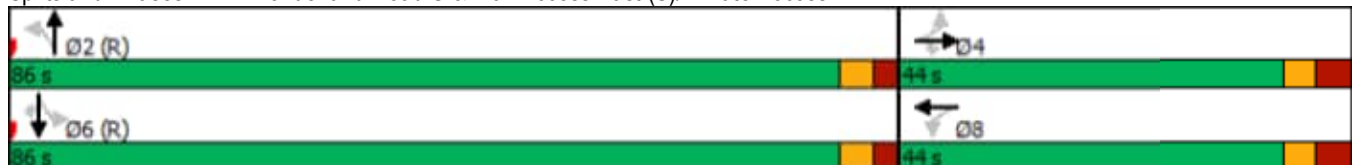


| Lane Group | EBL | EBT | EBR | WBL | WBT | NBL | NBT | SBL | SBT | SBR |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations | | ↖ | ↗ | | ↖↗ | ↖ | ↖↗ | ↖ | ↖↗ | ↗ |
| Traffic Volume (vph) | 318 | 0 | 35 | 4 | 0 | 18 | 1314 | 13 | 1397 | 91 |
| Future Volume (vph) | 318 | 0 | 35 | 4 | 0 | 18 | 1314 | 13 | 1397 | 91 |
| Turn Type | Perm | NA | Perm | Perm | NA | Perm | NA | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | 2 | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 2 | | 6 | | 6 |
| Detector Phase | 4 | 4 | 4 | 8 | 8 | 2 | 2 | 6 | 6 | 6 |
| Switch Phase | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 32.7 | 32.7 | 32.7 | 29.7 | 29.7 | 28.7 | 28.7 | 31.7 | 31.7 | 31.7 |
| Total Split (s) | 44.0 | 44.0 | 44.0 | 44.0 | 44.0 | 86.0 | 86.0 | 86.0 | 86.0 | 86.0 |
| Total Split (%) | 33.8% | 33.8% | 33.8% | 33.8% | 33.8% | 66.2% | 66.2% | 66.2% | 66.2% | 66.2% |
| Yellow Time (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.3 | 3.3 | 3.3 | 3.3 | 3.3 |
| All-Red Time (s) | 3.7 | 3.7 | 3.7 | 3.7 | 3.7 | 2.4 | 2.4 | 2.4 | 2.4 | 2.4 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.7 | 6.7 | | 6.7 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| Lead/Lag | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | |
| Recall Mode | None | None | None | None | None | C-Max | C-Max | C-Max | C-Max | C-Max |
| Act Effect Green (s) | | 34.4 | 34.4 | | 34.4 | 83.2 | 83.2 | 83.2 | 83.2 | 83.2 |
| Actuated g/C Ratio | | 0.26 | 0.26 | | 0.26 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| v/c Ratio | | 0.91 | 0.08 | | 0.02 | 0.13 | 0.61 | 0.09 | 0.66 | 0.10 |
| Control Delay | | 76.3 | 10.8 | | 2.6 | 8.1 | 8.0 | 7.2 | 15.1 | 2.3 |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | | 76.3 | 10.8 | | 2.6 | 8.1 | 8.0 | 7.2 | 15.1 | 2.3 |
| LOS | | E | B | | A | A | A | A | B | A |
| Approach Delay | | 69.9 | | | 2.6 | | 8.0 | | 14.3 | |
| Approach LOS | | E | | | A | | A | | B | |

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 40 (31%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.91
 Intersection Signal Delay: 17.7
 Intersection Capacity Utilization 73.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 4: Wonderland Road S & Mall Access East (S)/Private Access



Queues

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022



| Lane Group | EBT | EBR | WBT | NBL | NBT | SBL | SBT | SBR |
|------------------------|--------|------|------|------|-------|------|-------|------|
| Lane Group Flow (vph) | 331 | 36 | 8 | 19 | 1383 | 14 | 1455 | 95 |
| v/c Ratio | 0.91 | 0.08 | 0.02 | 0.13 | 0.61 | 0.09 | 0.66 | 0.10 |
| Control Delay | 76.3 | 10.8 | 2.6 | 8.1 | 8.0 | 7.2 | 15.1 | 2.3 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 76.3 | 10.8 | 2.6 | 8.1 | 8.0 | 7.2 | 15.1 | 2.3 |
| Queue Length 50th (m) | 84.1 | 0.0 | 0.0 | 1.0 | 40.6 | 1.1 | 166.7 | 3.6 |
| Queue Length 95th (m) | #135.9 | 8.5 | 1.2 | m2.1 | 44.6 | m2.1 | 189.9 | 6.8 |
| Internal Link Dist (m) | 81.0 | | 33.0 | | 134.8 | | 137.3 | |
| Turn Bay Length (m) | | | | 35.0 | | 40.0 | | 35.0 |
| Base Capacity (vph) | 392 | 476 | 449 | 143 | 2282 | 163 | 2221 | 974 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.84 | 0.08 | 0.02 | 0.13 | 0.61 | 0.09 | 0.66 | 0.10 |

Intersection Summary

- # 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.

HCM Signalized Intersection Capacity Analysis

4: Wonderland Road S & Mall Access East (S)/Private Access

10-26-2022



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|-------|------|------|------|------|------|------|------|------|-------|------|
| Lane Configurations | | 4 | 4 | | 4 | | 4 | 4 | | 4 | 4 | 4 |
| Traffic Volume (vph) | 318 | 0 | 35 | 4 | 0 | 4 | 18 | 1314 | 13 | 13 | 1397 | 91 |
| Future Volume (vph) | 318 | 0 | 35 | 4 | 0 | 4 | 18 | 1314 | 13 | 13 | 1397 | 91 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Total Lost time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Lane Util. Factor | | 1.00 | 1.00 | | 1.00 | | 1.00 | 0.95 | | 1.00 | 0.95 | 1.00 |
| Frbp, ped/bikes | | 1.00 | 0.97 | | 0.99 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.97 |
| Flpb, ped/bikes | | 0.99 | 1.00 | | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 |
| Frt | | 1.00 | 0.85 | | 0.93 | | 1.00 | 1.00 | | 1.00 | 1.00 | 0.85 |
| Flt Protected | | 0.95 | 1.00 | | 0.98 | | 0.95 | 1.00 | | 0.95 | 1.00 | 1.00 |
| Satd. Flow (prot) | | 1729 | 1572 | | 1701 | | 1805 | 3567 | | 1805 | 3471 | 1496 |
| Flt Permitted | | 0.75 | 1.00 | | 0.87 | | 0.12 | 1.00 | | 0.13 | 1.00 | 1.00 |
| Satd. Flow (perm) | | 1369 | 1572 | | 1509 | | 225 | 3567 | | 255 | 3471 | 1496 |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 331 | 0 | 36 | 4 | 0 | 4 | 19 | 1369 | 14 | 14 | 1455 | 95 |
| RTOR Reduction (vph) | 0 | 0 | 26 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 17 |
| Lane Group Flow (vph) | 0 | 331 | 10 | 0 | 2 | 0 | 19 | 1383 | 0 | 14 | 1455 | 78 |
| Confl. Peds. (#/hr) | 8 | | 10 | 10 | | 8 | 12 | | 14 | 14 | | 12 |
| Confl. Bikes (#/hr) | | | | | | | | | 2 | | | |
| Heavy Vehicles (%) | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 0% | 0% | 4% | 1% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Turn Type | Perm | NA | Perm | Perm | NA | | Perm | NA | | Perm | NA | Perm |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | | 2 | | | 6 | | 6 |
| Actuated Green, G (s) | | 34.4 | 34.4 | | 34.4 | | 83.2 | 83.2 | | 83.2 | 83.2 | 83.2 |
| Effective Green, g (s) | | 34.4 | 34.4 | | 34.4 | | 83.2 | 83.2 | | 83.2 | 83.2 | 83.2 |
| Actuated g/C Ratio | | 0.26 | 0.26 | | 0.26 | | 0.64 | 0.64 | | 0.64 | 0.64 | 0.64 |
| Clearance Time (s) | | 6.7 | 6.7 | | 6.7 | | 5.7 | 5.7 | | 5.7 | 5.7 | 5.7 |
| Vehicle Extension (s) | | 3.0 | 3.0 | | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 |
| Lane Grp Cap (vph) | | 362 | 415 | | 399 | | 144 | 2282 | | 163 | 2221 | 957 |
| v/s Ratio Prot | | | | | | | | 0.39 | | | c0.42 | |
| v/s Ratio Perm | | c0.24 | 0.01 | | 0.00 | | 0.08 | | | 0.05 | | 0.05 |
| v/c Ratio | | 0.91 | 0.02 | | 0.01 | | 0.13 | 0.61 | | 0.09 | 0.66 | 0.08 |
| Uniform Delay, d1 | | 46.4 | 35.4 | | 35.2 | | 9.2 | 13.8 | | 8.9 | 14.5 | 8.9 |
| Progression Factor | | 1.00 | 1.00 | | 1.00 | | 0.57 | 0.48 | | 0.59 | 0.90 | 0.39 |
| Incremental Delay, d2 | | 26.8 | 0.0 | | 0.0 | | 1.7 | 1.1 | | 0.9 | 1.3 | 0.1 |
| Delay (s) | | 73.2 | 35.4 | | 35.2 | | 6.9 | 7.6 | | 6.1 | 14.4 | 3.6 |
| Level of Service | | E | D | | D | | A | A | | A | B | A |
| Approach Delay (s) | | 69.5 | | | 35.2 | | | 7.6 | | | 13.7 | |
| Approach LOS | | E | | | D | | | A | | | B | |

Intersection Summary

| | | | |
|-----------------------------------|-------|---------------------------|------|
| HCM 2000 Control Delay | 17.3 | HCM 2000 Level of Service | B |
| HCM 2000 Volume to Capacity ratio | 0.73 | | |
| Actuated Cycle Length (s) | 130.0 | Sum of lost time (s) | 12.4 |
| Intersection Capacity Utilization | 73.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

c Critical Lane Group