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4175 Strandherd Drive

Transportation Impact Assessment

Proposed Commercial Development

4175 Strandherd Drive

Transportation Impact Assessment

Prepared By:

NOVATECH
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario
K2M 1P6

Dated: November 2024

Novatech File: 123120
Ref: R-2024-057

NOVATECH
Engineers, Planners & Landscape Architects

November 29, 2024

City of Ottawa
Planning, Development, and Building Services Department
110 Laurier Ave. W., 4th Floor
Ottawa, Ontario K1P 1J1

Attention: **Ms. Josiane Gervais**
Transportation Project Manager, Infrastructure Approvals

Dear Ms. Gervais:

Reference: **4175 Strandherd Drive**
Transportation Impact Assessment
Novatech File No. 123120

We are pleased to submit the following Transportation Impact Assessment (TIA), in support of a Zoning By-law Amendment application at 4175 Strandherd Drive, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2023).

If you have any questions or comments regarding this report, please feel free to contact Brad Byvelds, or the undersigned.

Yours truly,

NOVATECH

Trevor Van Wiechen, M.Eng.
E.I.T. | Transportation

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TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below.

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
4. I am either a licensed[1] or registered[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☑ or transportation planning ☐.

[1,2] License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.

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Dated at Ottawa (City) this 29 day of November, 2024 .

Name: Brad Byvelds
(Please Print)

Professional Title: P. Eng. - Senior Project Manager

B. Byvelds

Signature of Individual certifier that s/he meets the above four criteria

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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of a Zoning By-law Amendment application for the commercial development at 4175 Strandherd Drive. The subject site is currently vacant.

The subject site is located in the southwest corner of the Strandherd Drive/Systemhouse Street/Maravista Drive intersection and is surrounded by the following:

- Systemhouse Street followed by commercial developments to the north,
- Strandherd Drive followed by residential developments to the east,
- Commercial developments and Dealership Drive to the south, and
- Undeveloped lands followed by Highway 416 to the west.

For the purposes of this application, the proposed development is assumed to include one automobile dealerships with 30,000ft² of gross floor area, and 95,000ft² gross floor area of commercial retail. The gross floor areas presented in this report and the concept plan are preliminary at this time and are subject to change. The exact locations and number of accesses to each boundary road will be determined during a future Site Plan Control application for this site. The proposed development is anticipated to be completed in one phase, with a full buildout occurring in 2025.

The Subject Property is designated Mixed Industrial within the Suburban (Southwest) Transect of the City of Ottawa Official Plan. The property is zoned Business Park Industrial Zone (IP[2298] H(18)) in the City of Ottawa Zoning By-law 2008-250.

The conclusions and recommendations of this TIA can be summarized as follows:

Forecasting

- The proposed development is anticipated to generate 1,160 trips (726 vehicle trips) in the PM peak and 1,205 trips (772 vehicle trips) during the Saturday peak hour.

Access Design

- The development is expected to meet all PABL requirements, further review will be provided as part of the Site Plan Application process.

- The development is expected to be able to meet all TAC Geometric Design Guide standards, further review will be provided as part of the Site Plan Application process.

Existing and Background Intersection Operations

- Under existing and background traffic conditions, critical eastbound left, westbound left and northbound through movements at the Strandherd Drive/Citigate Drive/Fallowfield Road intersection are anticipated to operate with a LOS E-F during the PM peak hour.

- Under existing and background traffic conditions, the critical southbound through movement at the Strandherd Drive/Systemhouse Street/Maravista Drive intersection are anticipated to operate with a LOS E-F during the PM and Saturday peak hours.

Parking

- The development is anticipated to require roughly 345 parking spaces.

- Based on the preliminary concept plan, the proposed parking for the commercial retail portion of the site is approximately 22 spaces short of the current ZBL requirement. The parking provisions will be further reviewed as the concept plan is refined for the future Site Plan application.

Boundary Streets MMLOS

- Neither side of Strandherd Drive meets the target PLOS C due to high traffic volumes and vehicle speeds.

- Systemhouse Street does not meet the target BLOS E. Based on the City's MMLOS Guidelines, on Systemhouse Street a BLOS E can be achieved by either reducing the posted speed to 40km/h or painting 1.2m wide bike lanes. This is identified for the City's consideration.

- Strandherd Drive and Systemhouse Street meet the target truck level of service (TkLOS).

Intersection MMLOS

- All study area intersections do not meet the target PLOS. There is limited opportunity to improve the PLOS without reducing the number of lanes crossed at each intersection.

- Two-stage left turning cycling facilities for the side street cycling facilities is required to meet the target BLOS for the Strandherd Drive/Citigate Drive/Fallowfield Road, Strandherd Drive/CrossKeys Place/Hélène-Campbell Road, and Strandherd Drive/Systemhouse Street/Maravista Drive intersections. This is identified for the City's consideration.

- All study area intersections do not meet the target TkLOS. As the side streets do not form part of the City's Truck Route network, no mitigation measures are identified.

2025 Total Traffic Operations

- Compared to the 2025 background traffic conditions, site-generated traffic is anticipated to deteriorate the LOS at select movements at the Strandherd Drive/Citigate Drive/Fallowfield Road intersection. The northbound through movement deteriorated to a LOS F from a LOS E in the PM peak hour. The eastbound left turn movement deteriorated to a LOS F from a LOS E in the Saturday peak hour

- Compared to the 2025 background traffic conditions, site-generated traffic is anticipated to deteriorate the LOS at select movements at the Strandherd Drive/Sytemhouse Street/Maravista Drive intersection. The southbound through movement deteriorated to a LOS F from a LOS D in the PM peak hour. The eastbound left turn movement deteriorated to a LOS F from a LOS A in the Saturday peak hour

- Compared to the 2025 background traffic conditions, site-generated traffic is anticipated to significantly increase delays on the southbound approach to the Systemhouse Street/Costco Access/Commercial Site Access during the PM and Saturday peak hours.

2030 Total Traffic Operations

- Compared to the 2030 background traffic conditions, site-generated traffic is anticipated to increase critical v/c ratios at the Strandherd Drive/Citigate Drive/Fallowfield Road and Strandherd Drive/Systemhouse Street/Maravista Drive intersections during peak hours. It is

noteworthy that the eastbound left turn movement at both intersections deteriorate to a LOS F during the Saturday peak hour.

- Compared to the 2030 background traffic conditions, site-generated traffic is anticipated to significantly increase delays on the southbound approach to the Systemhouse Street/Costco Access/Commercial Site Access intersection during the PM and Saturday peak hours.

Alternative Signalized Access to Strandherd Drive

- Compared to the 2030 Total Traffic scenario, the Revised Total Traffic Scenario shows some improvements for critical movements at the Strandherd Drive/Sytemhouse Street/Maravista Drive intersection. The eastbound left turn movement reverts back to a LOS A from a LOS E/F during the PM and Saturday peak hours. However, critical through movements on Strandherd Drive are still anticipated to operate with a LOS F. The maximum southbound through queue at the Strandherd Drive/Dealership Drive/Kennevale Drive intersection may periodically extend through the new signalized intersection during the PM peak hour.
- Compared to the 2030 Total Traffic scenario, the Revised Total Traffic Scenario reduces delays at the Costco Access on Systemhouse Street to a LOS D during peak hours, which is considered acceptable.

- Restricting access to the site along Strandherd Drive to right-in right-out operations is anticipated to result in congestion and safety issues along Systemhouse Street. A new signalized intersection will improve operations along Systemhouse Street to an acceptable LOS. As such, a new signalized intersection along Strandherd Drive is recommended for the proposed commercial development. Further details of the new signalized intersection can be reviewed as part of a future Site Plan Control application when the site layout and uses are known.

Demand Rationalization

- Traffic throughout the study area could be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate time to travel for drivers using the study area roadways to make use of off-peak capacity, and alternate routes for travel.

- City and Province investment into the following roadway and transit infrastructure projects within the Barrhaven/South Nepean is required to support the ongoing development in the area and to relieve the anticipated traffic pressures along the Strandherd Drive corridor.

    - Greenbank Road Realignment at the Jock River Crossing
    - Southwest Transitway Extension and Future LRT
    - Highway 416 Interchange at Barnsdale Road

- It is realistic to assume that with the implementation of new or improved transportation infrastructure to the Barrhaven/Nepean South area, the necessary reductions in background traffic along Strandherd Drive, necessary to reach LOS targets, can be achieved.

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of a Zoning By-law Amendment application for the commercial development at 4175 Strandherd Drive. The subject site is currently vacant.

The subject site is located in the southwest corner of the Strandherd Drive/Systemhouse Street/Maravista Drive intersection and is surrounded by the following:

- Systemhouse Street followed by commercial developments to the north,
- Strandherd Drive followed by residential developments to the east,
- Commercial developments and Dealership Drive to the south, and
- Undeveloped lands followed by Highway 416 to the west.

An aerial of the vicinity around the subject site is provided in **Figure 1**.

1.2 Proposed Development

For the purposes of this application, the proposed development is assumed to include one automobile dealerships with 30,000ft² of gross floor area, and 95,000ft² gross floor area of commercial retail. The previous scoping report included a concept plan with 90,000ft² gross floor area of commercial retail. The gross floor areas presented in this report and the concept plan are preliminary at this time and are subject to change. The exact locations and number of accesses to each boundary road will be determined during a future Site Plan Control application for this site. The proposed development is anticipated to be completed in one phase, with a full buildout occurring in 2025.

The Subject Property is designated Mixed Industrial within the Suburban (Southwest) Transect of the City of Ottawa Official Plan. The property is zoned Business Park Industrial Zone (IP[2298] H(18)) in the City of Ottawa Zoning By-law 2008-250.

A copy of the concept plan is included in **Appendix A**.

1.3 Screening Form

The City's *2023 TIA Guidelines* identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form, which is included in **Appendix B**. The trigger results are as follows:

- Trip Generation Trigger – The development is expected to generate a net additional 60 peak hour person trips; further assessment is **required** based on this trigger.
- Location Triggers – The development is not located within a design priority area; further assessment is **not required** based on this trigger.
- Safety Triggers – It is assumed that the development will propose access within 150m of a traffic signal and propose an access within the auxiliary lane of an intersection; further assessment is **required** based on this trigger.

Figure 1: View of the Subject Site

2.0 SCOPING

2.1 Existing Conditions

Strandherd Drive was recently reconstructed between Stystemhouse Street and Jockvale Road. Pavement Marking and Signage drawings for the recent reconstruction are included in **Appendix C**. The following summary of existing conditions is reflective of the recent reconstruction of Strandherd Drive.

2.1.1 Roadways

All roadways within the study area fall under the jurisdiction of the City of Ottawa.

Strandherd Drive is an arterial roadway that generally runs in an east-west direction between Fallowfield Road and River Road. Within the study area it runs north-south with a four-lane divided urban cross section with a posted speed limit of 70km/hr. Sidewalks and cycle tracks are provided on both sides of the roadway. Strandherd Drive is classified as a truck route allowing full loads. For the purposes of this report, Strandherd Drive is considered a north-south roadway. Schedule C16

of the City of Ottawa's Official Plan identifies a right-of-way protection requirement of 44.5m along Strandherd Drive between Fallowfield Road and Greenbank Road.

Systemhouse Street is a collector roadway that runs in an east-west direction between Citigate Drive and Strandherd Drive. West of Strandherd Drive, Systemhouse Street has a five-lane cross-section divided by a median with sidewalks on both sides of the road. The road transitions to a two-lane undivided urban cross section with a sidewalk on the south side and Multi-Use Pathway (MUP) on the north side west of the private commercial entrance (Costco). Systemhouse Street has an unposted regulatory speed limit of 50km/h.

Maravista Drive is a collector roadway that runs in an east-west direction between Strandherd Drive and Cedarview Road. It has a two-lane undivided urban cross-section with sidewalks on both sides of the road and a posted speed limit of 40km/h.

Dealership Drive is a collector roadway that runs in an east-west direction between Citigate Drive and Strandherd Drive. It has a two-lane undivided urban cross-section with sidewalks on both sides of the road and an unposted regulatory speed limit of 50km/h.

Kennevale Drive is a collector roadway that runs in an east-west direction between Strandherd Drive and Cedarview Road. It has a two-lane undivided urban cross-section with sidewalks on both sides of the road and a posted speed limit of 40km/h.

Fallowfield Road is an arterial roadway that generally runs in an east-west direction between Highway 416 and Cedarview Road. Within the study area it has a three-lane undivided urban cross section with a posted speed limit of 60km/hr. Paved shoulders are provided on both sides of the roadway. Fallowfield Road is classified as a truck route allowing full loads. Schedule C16 of the City of Ottawa's Official Plan identifies a right-of-way protection requirement of 44.5m along Fallowfield Road between Strandherd Drive and Cedarview Road.

Citigate Drive is a major collector roadway that runs in a north-south direction between Systemhouse Street and Strandherd Drive. It has a two-lane undivided urban cross-section with a sidewalk on the west side and a bi-drectional multi-use pathway on the east side. Citigate Drive has an unposted regulatory speed limit of 50km/h.

Hélène-Campbell Road is a collector roadway that runs in an east-west direction between Strandherd Drive and Cedarview Road. It has a two-lane undivided urban cross-section with sidewalks on both sides of the road and a posted speed limit of 50km/h.

CrossKeys Place is a collector roadway that runs in an east-west direction between Strandherd Drive and Citigate Drive. It has a two-lane undivided urban cross-section with sidewalks on both sides of the road east of the commercial access (Citigate Street). The sidewalk on the south side of the road transitions to a MUP west of the commercial access. It has an unposted regulatory speed limit of 50km/h.

2.1.2 Intersections

Strandherd Drive/Systemhouse Street/Maravista Drive

- Four-legged signalized intersection
- Northbound Approach (Strandherd Drive): two left turn lanes, one through lane and one shared through/right turn lane
- Southbound Approach (Strandherd Drive): one left turn lane, two through lanes, and one right turn lane
- Westbound Approach (Maravista Drive): one left turn lane and one shared through/right turn lane
- Eastbound Approach (Systemhouse Street): two left turn lanes and one shared through/right turn lane
- Standard pedestrian crossings on all approaches
- Green thermoplastic bicycle crossrides on east and west approaches

Strandherd Drive/Dealership Drive/Kennevale Drive

- Four-legged signalized protected intersection
- Northbound Approach (Strandherd Drive): two left turn lanes, one through lane and one shared through/right turn lane
- Southbound Approach (Strandherd Drive): one left turn lane, two through lanes, and one right turn lane
- Westbound Approach (Kennevale Drive): one left turn lane and one shared through/right turn lane
- Eastbound Approach (Dealership Drive): one left turn lane, one through lane and one right turn lane
- Ladder pedestrian crossings and green thermoplastic bicycle crossrides are provided on all approaches

Strandherd Drive/Citigate Drive/Fallowfield Road

- Four-legged signalized intersection
- Northbound Approach (Strandherd Drive): one left turn lane, two through lanes, and one right turn lane
- Southbound Approach (Fallowfield Road West): two left turn lanes, two through lanes, and one right turn lane
- Westbound Approach (Fallowfield Road East): one left turn lane, one through lane and one right turn lane
- Eastbound Approach (Citigate Drive): two left turn lanes and one shared through/right turn lane
- Standard pedestrian crossings on all approaches
- Green thermoplastic bicycle crossrides on east and west approaches

Strandherd Drive/CrossKeys Place/Hélène-Campbell Road

- Four-legged signalized intersection
- Northbound Approach (Strandherd Drive): two left turn lanes, two through lanes, and one right turn lane
- Southbound Approach (Strandherd Drive): one left turn lane, two through lanes, and one right turn lane
- Westbound Approach (Hélène-Campbell Road): one left turn lane, one through lane, one pocket bike lane, and one right turn lane
- Eastbound Approach (CrossKeys Place): one left turn lane, one through lane, one pocket bike lane, and one right turn lane
- Standard pedestrian crossings on all approaches
- Green thermoplastic bicycle crossrides on east and west approaches

Systemhouse Street/Citigate Drive

- Three-legged unsignalized intersection
- Stop control on east and west approaches
- Southbound Approach (Citigate Drive): one shared all-movement lane
- Westbound Approach (Systemhouse Street): one shared all-movement lane
- Eastbound Approach (Amazon Warehouse): one shared all-movement lane

2.1.3 Driveways

A review of adjacent driveways along the boundary roads are provided as follows:

Strandherd Drive, West Side:

- One right-in right-out access to a car dealership at 4149 Strandherd Drive

Strandherd Drive, East Side:

- One right-out access to a commercial development at 155 Prem Circle and 200 Kennevale Drive

Systemhouse Street, North Side:

- One all movement access to a commercial development (Costco) at 4225 and 4235 Strandherd Drive

Systemhouse Street, South Side:

- None

2.1.4 Pedestrian and Cycling Facilities

Strandherd Drive is classified as a crosstown bikeway route and has cycle tracks on both sides of the road within the study area. The Strandherd Drive/Dealership Drive/Kennevale Drive intersection was recently reconstructed to be a protected intersection, while the Strandherd Drive/Systemhouse Street/Maravista Drive, Strandherd Drive/Cross Keys Place/Helene-Campbell Rd and Strandherd Drive/Fallowfield Road/Citigate Drive intersections have green thermoplastic crossrides and two-staged left turn bike boxes.

All roadways (excluding Fallowfield Road east and west of Strandherd Drive) have pedestrian facilities on both sides of the roadway. The sidewalk along the north side of Systemhouse Street transitions to a MUP mid-block between Strandherd Drive and Citigate Drive and continues on the east side of Citigate Drive. A north-south MUP is also provided along the creek corridor south of Systemhouse Street.

A map showing the pedestrian and cycling facilities is shown in the following figure.

Figure 2: Existing Pedestrian and Cycling Facilities

2.1.5 Transit

The closest OC Transpo bus stops in the vicinity of the subject site are described in **Table 1** and are shown in **Figure 3**. A summary of various routes which serve the study area is included in **Table 2**. Detailed route information is included in **Appendix D**.

Table 1: OC Transpo Transit Stops

Stop	Location	Routes Serviced
#4714	South side of Systemhouse Street west of the Costco Access	110, 170
#4715	North side of Systemhouse Street west of the Costco Access	99, 110, 170
#5373	Northwest corner of Maravista Drive/Cobble Hill Drive	272, 675, 679
#1788	Southeast corner of Maravista Drive/Cobble Hill Drive	272, 675, 679
#1214	Southwest corner of Maravista Drive/Cobble Hill Drive	170

Stop	Location	Routes Serviced
#1184	Northeast corner of Maravista Drive/Bamburgh Way	170
#3394	Northwest corner of Kennevale Drive/Cobble Hill Drive	170, 683
#1792	Northeast corner of Kennevale Drive/Cobble Hill Drive	272, 675, 679
#3393	Southeast corner of Kennevale Drive/Cobble Hill Drive	170, 272, 675, 679, 683

Table 2: OC Transpo Route Information

Route	From ↔ To	Frequency
99	Barrhaven Centre ↔ Greenboro & Hurdman	Two runs in the direction of peak travel, 7-days per week
110	Innovation ↔ Fallowfield	30-minute headways, 7-days per week, no late service on weekdays and limited trips on weekends
170	Fallowfield & CFIA ↔ Barrhaven Centre	30-minute headways, all-day service 7-days per week
272	Tunney's Pasture ↔ Cobble Hill	30-minute headways, Monday-Friday peak periods only
675	Bell H.S. ↔ Minto Rec	One-way school bus route
679	Cobble Hill ↔ St Joseph	One-way school bus route
683	Half Moon Bay ↔ Cedarview	One-way school bus route

Figure 3: OC Transpo Bus Stop Locations

2.1.6 Area Traffic Management

There are no Area Traffic Management (ATM) studies within the study area that have been completed or are currently in progress.

Pavement markings and centreline flex posts noting the maximum posted speed limit are provided on Maravista Drive and Kennevale Drive.

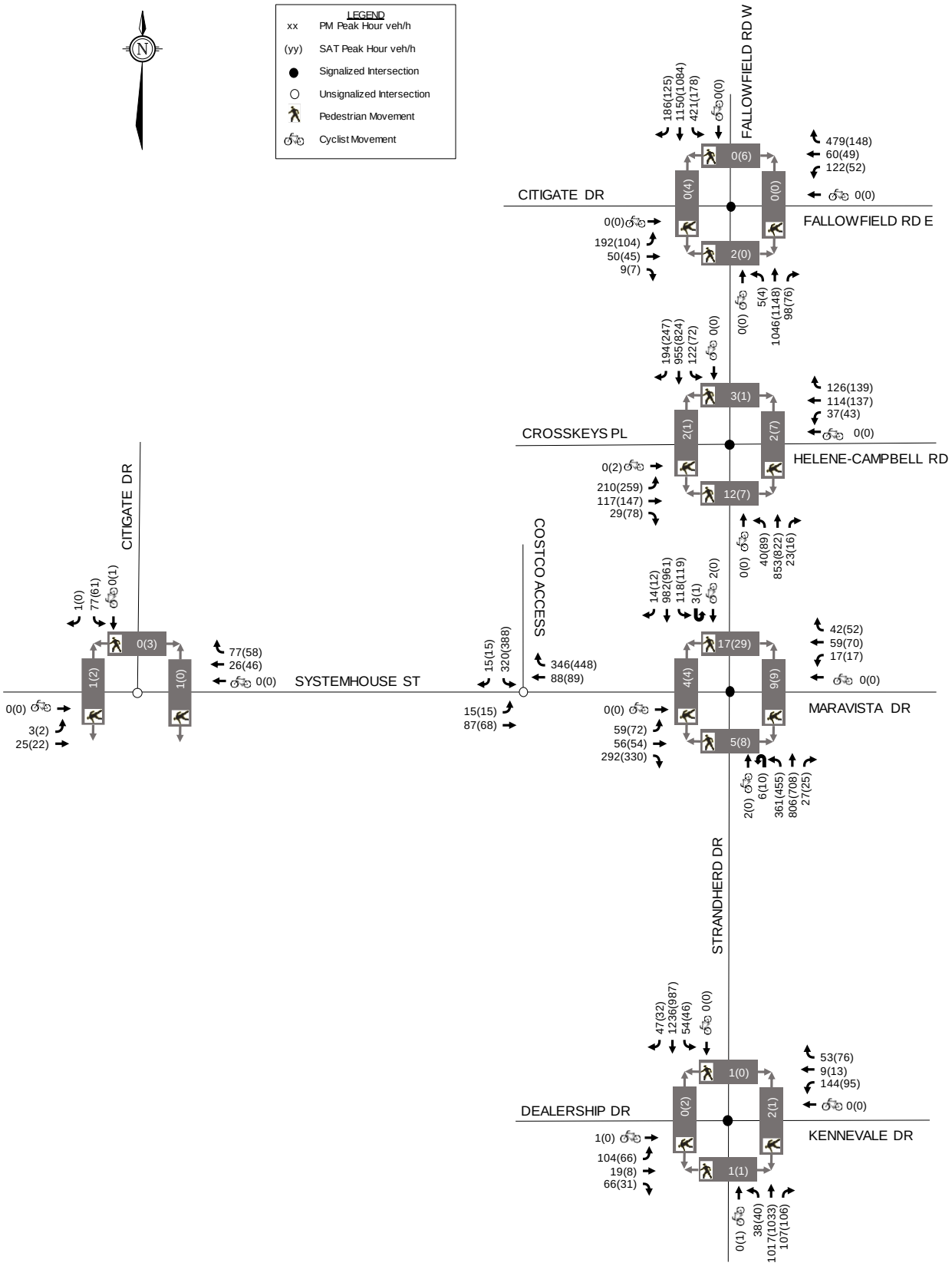
2.1.7 Existing Traffic Volumes

Weekday and weekend traffic counts were coordinated by Novatech to determine existing pedestrian, cyclist, and vehicular traffic volumes at the study area intersections. These counts were completed on the following dates:

- Strandherd Drive/Systemhouse Street/Maravista Drive — April 9, 2024; April 6, 2024 (Weekend)
- Strandherd Drive/Dealership Drive/Kennevale Drive — March 19, 2024; March 23, 2024 (Weekend)
- Strandherd Drive/Citigate Drive/Fallowfield Road — Sept. 17, 2024; Sept. 14, 2024 (Weekend)
- Strandherd Drive/CrossKeys Place/Hélène-Campbell Rd — Sept. 17, 2024; Sept. 14, 2024 (Weekend)
- Citigate Drive/Systemhouse Street — October 3, 2024; October 5, 2024 (Weekend)

All traffic count data is included in **Appendix E**. Traffic at the Systemhouse Street/Costco Access intersection has been estimated based on the intersection counts to the east and west. Weekday PM and Saturday peak hour traffic volumes within the study area are shown in **Figure 4**.

Figure 4: Existing Traffic Volumes



2.1.8 Collision Records

Historical collision data from the last five years was obtained from the City's Public Works and Service Department for the study area intersections and road segments between intersections. Copies of the collision summary reports are included in **Appendix F**.

The collision data has been evaluated to determine if there are any identifiable collision patterns, defined in the *2017 TIA Guidelines* as 'more than six collisions in five years' for any one movement. The number of collisions at each intersection from January 1, 2017 to December 31, 2021 is summarized in **Table 3**.

Table 3: Reported Collisions

Location	Impact Types						Total
	Approach	Angle	Rear End	Sideswipe	Turning Mvmt	SMV(1)/ Other	
Strandherd Drive/Systemhouse Street/Maravista Drive	-	5	22	14	2	3	**46**
Strandherd Drive/Dealership Drive/Kennevale Drive	-	4	22	2	9	4	**41**
Strandherd Drive/Citigate Drive/Fallowfield Road	1	5	33	8	2	3	**52**
Strandherd Drive/CrossKeys Place/Hélène Campbell Drive	-	9	18	3	3	2	**35**
Strandherd Drive between Maravista Drive and Kennevale Drive	-	-	8	3	-	1	**12**
Systemhouse Street between Citigate Drive and Strandherd Drive	-	-	-	1	-	-	**1**

1. SMV = Single Motor Vehicle

Strandherd Drive/Systemhouse Street/Maravista Drive

A total of 46 collisions were reported at this intersection over the last five years, of which there were five angle impacts, 22 rear-end impacts, 14 sideswipe impacts, two turning movement impacts, and three single motor vehicle impacts. Six collisions resulted in injuries, but none caused fatalities. None of the collisions involved cyclists or pedestrians.

Of the 46 collisions at this location, one occurred during rain conditions, four of them occurred during snow conditions, and one occurred during freezing rain conditions, for all other collisions weather was not a factor. Additionally, of the 46 collisions, 32 of them occurred during daylight hours.

Of the 22 rear end collisions, six involved northbound vehicles, five involved southbound vehicles, nine involved eastbound vehicles, and two involved westbound vehicles. As the northbound and eastbound approaches have clear sight lines with no horizontal or vertical curves, the rear end collision pattern of these approaches is anticipated to be attributed to high traffic volumes and high speeds.

Of the 14 sideswipe collisions, one involved northbound vehicles, five involved southbound vehicles, four involved eastbound vehicles, and four involved westbound vehicles.

Calculations of the intersection collision rate per Million Entering Vehicles (MEV) for all collision types across the five-year study period showed an intersection collision rate of 0.89/MEV. As the

MEV collision rate is below 1.0, Strandherd Drive/Systemhouse Street/Maravista Drive does not experience an abnormally high rate of collisions.

Strandherd Drive/Dealership Drive/Kennevale Drive
A total of 41 collisions were reported at this intersection over the last five years, of which there were four angle impacts, 22 rear-end impacts, two sideswipe impacts, nine turning movement impacts, and four single motor vehicle impacts. Four collisions resulted in injuries, but none caused fatalities. None of the collisions involved cyclists or pedestrians. It is noteworthy that this intersection was under construction for periods of the data collection, which may have impacted the collision history at this location.

Of the 41 collisions at this location, three of them occurred during rain conditions and two of them occurred during snow conditions, for all other collisions weather was not a factor. Additionally, of the 41 collisions, 32 of them occurred during daylight hours.

Of the 22 rear end collisions, four involved northbound vehicles, seven involved southbound vehicles, two involved eastbound vehicles, and nine involved westbound vehicles. As the southbound and westbound approaches have clear sight lines with no horizontal or vertical curves, the rear end collision pattern on these approaches is anticipated to be attributed to high traffic volumes and high speeds.

Of the nine turning movement collisions, five involved southbound left turning vehicles, one involved a northbound right turning vehicle, one involved a northbound U-turning vehicle, and two involved eastbound left turning vehicles. It is worth noting that fully protected northbound and southbound left turn phasing was implemented in 2023 which may mitigate the northbound and southbound left turning collisions.

Calculations of the intersection collision rate per Million Entering Vehicles (MEV) for all collision types across the five-year study period showed an intersection collision rate of 0.78/MEV. As the MEV collision rate is below 1.0, Strandherd Drive/Dealership Drive/Kennevale Drive does not experience an abnormally high rate of collisions.

Strandherd Drive/Citigate Drive/Fallowfield Road
A total of 52 collisions were reported at this intersection over the last five years, of which there were one approaching impact, five angle impacts, 33 rear-end impacts, eight sideswipe impacts, two turning movement impacts, and three single motor vehicle impacts. Nine collisions resulted in injuries, but none caused fatalities. None of the collisions involved cyclists or pedestrians.

Of the 52 collisions at this location, three of them occurred during rain conditions and four of them occurred during snow conditions, for all other collisions weather was not a factor. Additionally, of the 52 collisions, 42 of them occurred during daylight hours.

Of the 33 rear end collisions, 14 involved southbound vehicles, six involved eastbound vehicles, and 13 involved westbound vehicles. As the southbound and westbound approaches have clear sight lines with no horizontal or vertical curves, the rear end collision pattern on these approaches is anticipated to be attributed to high traffic volumes and high speeds.

Of the 8 sideswipe collisions, four involved eastbound vehicles and four involved westbound vehicles.

Calculations of the intersection collision rate per Million Entering Vehicles (MEV) for all collision types across the five-year study period showed an intersection collision rate of 0.75/MEV. As the MEV collision rate is below 1.0, Strandherd Drive/Citigate Drive/Fallowfield Road does not experience an abnormally high rate of collisions.

Strandherd Drive/CrossKeys Place/Hélène Campbell Drive

A total of 35 collisions were reported at this intersection over the last five years, of which there were nine angle impacts, 18 rear-end impacts, three sideswipe impacts, three turning movement impacts, and two single motor vehicle impacts. Three collisions resulted in injuries, but none caused fatalities. None of the collisions involved cyclists or pedestrians.

Of the 35 collisions at this location, three of them occurred during rain conditions and one occurred during snow conditions, for all other collisions weather was not a factor. Additionally, of the 35 collisions, 27 of them occurred during daylight hours.

Of the nine angle collisions, three involved northbound and eastbound vehicles, three involved northbound and westbound vehicles, two involved southbound and eastbound vehicles, and one involved southbound and westbound vehicles.

Of the 18 rear end collisions, two involved northbound vehicles, five involved southbound vehicles, four involved eastbound vehicles, and seven involved westbound vehicles. As the westbound approach has some horizontal curvature near the intersection, the rear end collision pattern on these approaches is anticipated to be attributed to high traffic volumes and horizontal curvature.

Calculations of the intersection collision rate per Million Entering Vehicles (MEV) for all collision types across the five-year study period showed an intersection collision rate of 0.68/MEV. As the MEV collision rate is below 1.0, Strandherd Drive/CrossKeys Place/Hélène Campbell Drive does not experience an abnormally high rate of collisions.

Strandherd Drive between Maravista Drive and Kennevale Drive

A total of 12 collisions were reported within this roadway segment over the last five years, of which there were eight rear-end impacts, three sideswipe impact, and one single motor vehicle impacts. Two collisions resulted in injuries, but none caused fatalities. None of the collisions involved cyclists or pedestrians.

Of the 12 collisions at this location, one of them occurred during rain conditions, for all other collisions weather was not a factor. Additionally, of the 12 collisions, 11 of them occurred during daylight hours.

Of the eight rear end collisions, two involved northbound vehicles and six involved southbound vehicles. As the southbound direction has clear sight lines with no horizontal or vertical curves, the rear end collision pattern at this location is anticipated to be attributed to high traffic volumes and high speeds.

Calculations of the segment collision rate per Million Entering Vehicles (MEV) for all collision types across the five-year study period showed an intersection collision rate of 0.26/MEV. As the MEV collision rate is below 1.0, Strandherd Drive between Maravista Drive and Kennevale Drive does not experience an abnormally high rate of collisions.

Systemhouse Street between Citigate Drive and Strandherd Drive
One collision was reported along Systemhouse Street between Citigate Drive and Strandherd Drive in the last five years. As there were less than six collisions of any given type there is no discernible collision pattern at this location.

2.2 Planned Conditions

2.2.1 Planned Roadway and Transit Projects

Based on the City's 2013 TMP, the widening of Strandherd Drive from two to four lanes between Fallowfield Road East and Jockvale Road as part of the 2031 Affordable Road Network and is largely completed at the time of this writing.

2.2.2 Other Area Developments

In proximity of the proposed development, there are multiple developments that are approved, or in the approval process. Other developments in the area include:

- 575 Dealership Drive – Two industrial buildings with a small associated office space are proposed for the site. A TIA was not prepared in support of the development. The location of the development is shown on **Figure 5**.

- 115 Lusk Street – A TIA was prepared by IBI Group in 2021 in support of a restaurant and medical office development located between Lusk Street, Forager Street, and Fallowfield Road East, as shown on **Figure 5**. Full buildout was planned in 2023. The TIA estimated that the development would generate 13 and 32 vehicle trips during the AM and PM peak hours, respectively.

- 135 Lusk Street – A TIA was prepared by IBI Group in 2021 in support of a hotel development located on Lusk Street, as shown on **Figure 5**. Full buildout was planned in 2023. The TIA estimated that the development would generate 42 and 53 vehicle trips during the AM and PM peak hours, respectively.

- 140 Lusk Street – A TIA was prepared by Arcadis IBI Group in 2022 in support of a hotel development located on Lusk Street, as shown on **Figure 5**. Full buildout was planned in 2023. The TIA estimated that the development would generate 36 and 45 vehicle trips during the AM and PM peak hours, respectively.

- 4149 Strandherd Drive – A TIA was prepared by McIntosh Perry in 2022 in support of a development including two car dealerships located on Strandherd Drive, as shown on **Figure 5**. Both dealerships were constructed at the time of the traffic counts described in Section 2.1.7.

- 444 CitiGate Drive and 560 Dealership Drive – A Technical Memorandum updating the trip generation presented in the *Citigate Highway 416 Employment Lands Community Transportation Study* (CTS) was prepared by Novatech in 2023 in support of six future industrial/warehouse buildings, as shown on **Figure 5**. A buildout year was not identified within this study. The memo estimated that the lands would generate 623 and 548 vehicle trips during the AM and PM peak hours, respectively.

- 4433 Strandherd Drive – A TIA was prepared by Novatech in 2019 in support of a hotel development located on Strandherd Drive, as shown on **Figure 5**. Full buildout was planned in 2020. The TIA estimated that the development would generate 48, 53, and 77 vehicle trips during the AM, PM, and Saturday peak hours, respectively.

- The residential development (Glenview Homes) at 3387 Borrisokane Road. A total of 208 residential dwellings, consisting of 116 single family and 92 townhomes, as well as a 5.93-acre school block are proposed. A CTS/TIS was prepared by Stantec, with the latest Addendum in May 2017 in support of the proposed development. The estimated date of occupancy is 2022. Based on aerial photography, it is estimated that this development is 50% constructed. The location of the development is shown in **Figure 6**.

- The development (Half Moon Bay West) at 3345 Borrisokane Road. The proposed development includes 1016 residential homes, consisting of 552 single family homes and 464 townhomes, as well as 5.3 acres of commercial lands. A CTS was prepared by Stantec in November 2016 in support of the proposed development. The development build-out year was 2024. Based on aerial photography, it is estimated that this development is 90% constructed. The location of the development is shown in **Figure 6**.

- The residential development at 3288 & 3300 Borrisokane Road and 4305, 4345, and 4375 McKenna Casey Drive. A total of 1,995 residential dwellings, consisting of 331 single family and 1,664 townhomes. A TIA was prepared by CGH in March 2024 in support of the proposed development. The estimated date of occupancy is 2030. The location of the development is shown in **Figure 6**.

- The residential development at 3432 Greenbank Road. A total of 529 residential dwellings, consisting of 105 single family and 424 townhomes. A TIA was prepared by CGH in August 2023 in support of the proposed development. The estimated date of occupancy is 2024. The location of the development is shown in **Figure 6**.

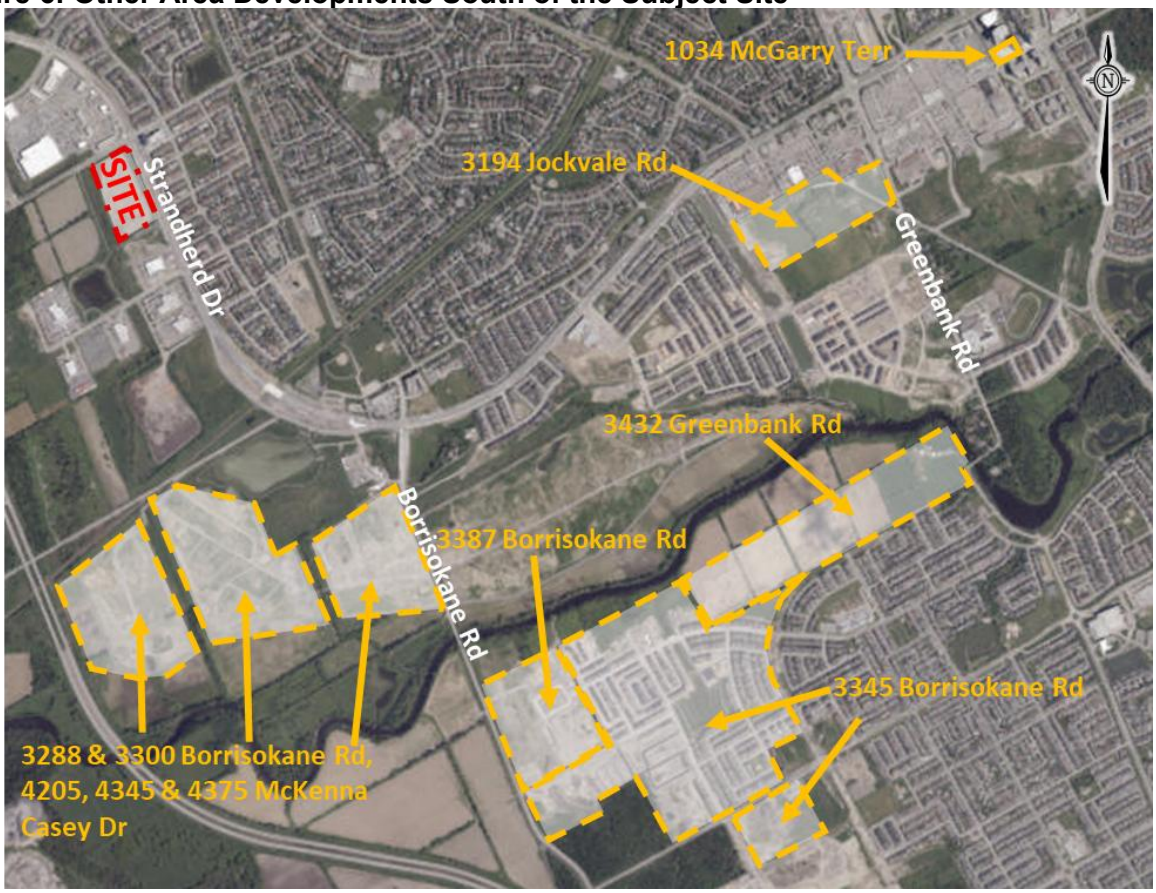
- The mixed-use development at 3194 Jockvale Road. Consisting of 210 townhomes and 200,000ft² of retail space. A TIA was prepared by CGH in January 2019 in support of the proposed development. The estimated date of occupancy is 2026. The location of the development is shown in **Figure 6**.

- The mixed-use development at 1034 McGarry Terrace. Consisting of two residential towers containing a total of 592 residential units and 1,100m² of ground floor retail space. A TIA was prepared by CGH in August 2023 in support of the proposed development. The estimated date of occupancy is 2026. The location of the development is shown in **Figure 6**.

Excerpts from relevant transportation studies have been attached in **Appendix G**. The following figure summarizes the location of the nearby developments.

Figure 5: Other Area Developments in Close Proximity to the Subject Site

Figure 6: Other Area Developments South of the Subject Site



2.3 Study Area and Time Periods

The study area for this report includes the boundary roadways Strandherd Drive and Systemhouse Street, as well as the following intersections:

- Strandherd Drive/Citigate Drive/Fallowfield Road;
- Strandherd Drive/CrossKeys Place/Hélène-Campbell Road;
- Strandherd Drive/Systemhouse Street/Maravista Drive;
- Strandherd Drive/Dealership Drive/Kennevale Drive; and
- Citigate Drive/Systemhouse Street

Analysis will be completed for the weekday PM and Saturday peak hours, as this represents the worst-case combination of site generated traffic and adjacent street traffic.

2.4 Development Generated Traffic

The proposed development includes one automobile dealerships with 30,000ft² of gross floor area and 95,000ft² of retail. The previous scoping report included trip generation calculations based on a concept with 90,000ft² of retail, trip generation calculations have been updated to the latest concept plan. The GFAs presented in this report are preliminary and are subject to change.

The number of peak hour person trips generated by the proposed development has been estimated using the *ITE Trip Generation Manual, 11th Edition* (released in 2021 by the Institute of Transportation Engineers).

For this study, the rates associated with the Shopping Plaza (with Supermarket) land use have been considered for the entire development, with the exception of the proposed auto dealership use, as the rates are appropriate for sites between 40,000 ft² and 150,000 ft². The Shopping Plaza rates are different for sites with a supermarket anchor versus without. The 'Supermarket – Yes' land use subcategory has been considered as there is potential for a supermarket land use to be included within the final site plan. The Shopping Plaza rates also account for internally captured trips without requiring a separate process for estimation.

To convert ITE vehicle trip rates to person trip rates a 1.28 factor was applied to all trips generated by the retail/supermarket uses. As the majority of trips generated by the Automobile Sales use will consist of people bringing their vehicle in for maintenance services or using their current vehicle to look at new vehicles to purchase, a person trip conversion factor was not applied to this use. Person trips generated by the commercial development using ITE trip rates can be found in **Table 4**.

Table 4: Person Trips Generated by Commercial

Land Use	ITE Code	GFA	PM Peak Hour (pph[1]))			Sat Peak Hour (pph[1]))		
			IN	OUT	TOT	IN	OUT	TOT
Shopping Plaza Supermarket - Yes	821	95,000ft²	521	564	*1,085*	553	531	*1,084*
Automobile Sales	840	30,000ft²	30	45	*75*	61	60	*121*
TOTAL			**551**	**609**	***1,160***	**614**	**591**	***1,205***

1. pph: peak person trips per hour

The modal shares are assumed to be consistent with the modal shares outlined in the *2020 TRANS Trip Generation Manual*, specific to the South Nepean region. The modal shares for the shopping

plaza uses have been assumed to follow Table 13 within the 2020 TRANS Trip Generation Manual as a commercial generator. Due to the nature of the Automobile Sales use, all person trips are assumed to be vehicle trips. For the purposes of this report, the modal shares have been rounded to the nearest 5%. A breakdown of trips generated by the commercial development by modal share is shown in **Table 5**.

Table 5: Peak Hour Person Trips by Mode Share for the Commercial Development

Travel Mode	Mode Share	PM Peak Hour			Sat Peak Hour		
		In	Out	Total	In	Out	Total
Shopping Plaza Person Trips		**521**	**564**	**1,085**	**553**	**531**	**1,084**
Auto Driver	60%	313	338	651	332	319	651
Auto Passenger	25%	130	141	271	138	133	271
Transit	5%	26	28	54	28	26	54
Cyclist	0%	0	0	0	0	0	0
Pedestrian	10%	52	57	109	55	53	108
Automobile Sales Person Trips		**30**	**45**	**75**	**61**	**60**	**121**
Auto Driver	100%	30	45	75	61	60	121
Auto Passenger	0%	0	0	0	0	0	0
Transit	0%	0	0	0	0	0	0
Cyclist	0%	0	0	0	0	0	0
Pedestrian	0%	0	0	0	0	0	0
Total Person Trips		**551**	**609**	**1,160**	**614**	**591**	**1,205**
Auto Driver		343	383	726	393	379	772
Auto Passenger		130	141	271	138	133	271
Transit		26	28	54	28	26	54
Cyclist		0	0	0	0	0	0
Pedestrian		52	57	109	55	53	108

From the previous table, the proposed development is anticipated to generate 1,160 trips (726 vehicle trips) in the PM peak and 1,205 trips (772 vehicle trips) during the Saturday peak hour.

The proposed development is anticipated to generate two types of external peak hour trips: primary trips and pass-by trips. Primary trips are made for the specific purpose of visiting the site, while pass-by trips are made as intermediate stops on the way to another destination. The *ITE Trip Generation Manual* includes PM peak hour and Saturday peak hour pass-by percentages for the Shopping Plaza and Supermarket land uses. For the purposes of this TIA, the percentages of both land uses have been blended, to reflect that the proposed supermarket is anticipated to be the largest trip generator of the development.

The pass-by percentages identified in the *ITE Trip Generation Manual* and the blended pass-by rates assumed in this TIA are summarized as follows:

- PM Peak Hour: 40% (Shopping Plaza) and 24% (Supermarket) = 32% (blended rate)
- SAT Peak Hour: 31% (Shopping Plaza) and 19% (Supermarket) = 25% (blended rate)

The projected primary and pass-by trips generated by the proposed development are summarized in **Table 6**.

Table 6: Primary and Pass-by Trips

Trip Type	PM Peak Hour (vph)			SAT Peak Hour (vph)		
	IN	OUT	TOT	IN	OUT	TOT
Shopping Plaza Trips						
Total Vehicle Trips	313	338	651	332	319	651
Pass-by Adjustment (32% PM, 25% SAT)	-104	-104	*-208*	-81	-81	*-162*
Primary Trips (68% PM, 75% SAT)	**209**	**234**	***443***	**251**	**238**	***489***

From the previous tables, the development is projected to generate 443 primary vehicle trips during the PM peak hour and 489 primary vehicle trips during the Saturday peak hour.

2.5 Trip Distribution

The distribution of primary trips has been derived based on the existing traffic patterns, knowledge of the local area, and previous reports within the study area. It is described as follows:

Commercial Development

- 25% to/from the north via Fallowfield Road East
- 20% to/from the north via Fallowfield Road West
- 5% to/from the east via Maravista Drive
- 45% to/from the south via Strandherd Drive
- 5% to/from the north via 4225 and 4235 Strandherd Drive (Costco and Trinity Common Commercial Development)

Car Dealership Development

- 10% to/from the north via Fallowfield Road East
- 55% to/from the north via Fallowfield Road West
- 5% to/from the east via Kennevale Drive
- 30% to/from the south via Strandherd Drive

The distribution of pass-by trips is based on the peak hour commuter flow which is approximately 45% northbound and 55% southbound in the PM and 55% northbound and 45% southbound in the Saturday peak hour.

2.6 Trip Assignment

Although the exact location of the accesses are unknown at this time and will be furthered evaluated during future site plan applications, for the purposes of an initial analysis, it was assumed that the commercial development will have one all-movement access to Systemhouse Street and one right-in right-out access to Strandherd Drive and the auto dealership development will have one right-in right-out access to Strandherd Drive and an easement to an all-movement access to Dealership Drive. The assignment of trips to the accesses is summarized below.

Commercial Development

- Systemhouse Access
  - 100% to/from the East
  - 100% from the South
  - 100% to the North and 40% from the North
- Strandherd Access
  - 100% to the South
  - 60% from the North

Auto Dealership Development

- Dealership Drive Access
  - 100% from the East
  - 100% from the South
  - 100% to the North
- Strandherd Access
  - 100% from the North
  - 100% to the East
  - 100% to the South

As the TIA was advanced prior to receipt of the most recent concept and the revised concept only results in an increase of 30 vehicle trips, the traffic projections for the previous concept presented in the TIA Scoping Report have been carried forward in this analysis. Updated volume figures and analysis will be provided as part of the future Site Plan application when the concept plan is finalized. Primary and pass-by trips generated by the previous concept are shown in **Figures 7** and **8**.

2.7 Access Location

This section provides a preliminary review of the proposed access design presented within the Concept Plan. The access design has been reviewed with respect to relevant requirements of the City's *Private Approach By-Law* (PABL) and the Transportation Association of Canada (TAC) *Geometric Design Guidelines for Canadian Roads*. The final access design will be confirmed as part of the future Site Plan Control application.

Section 25(a) of the PABL identifies that a property with 46-150m of frontage may have a maximum of two two-way private approaches and for each additional 90m of frontage an additional two-way approach or two additional one-way approaches are permitted. This requirement is met. The subject site has approximately 150m of frontage on Systemhouse Street and one two-way access is proposed. The subject site has approximately 300m of frontage on Strandherd Drive. Two accesses are proposed.

Section 25(c) of the PABL identifies a maximum width requirement of 9.0m for any two-way private approach, as measured at the street line. The width of the accesses will be reviewed during the site plan application.

Section 25(m) of the PABL identifies a minimum space requirement of 75m between a private approach and the nearest intersecting street line and any other private approach. All accesses to Systemhouse Street and Strandherd Drive provide at least 75m of clear space between the access and the nearest intersecting street line and any other private approach.

Figure 7: Primary Trips

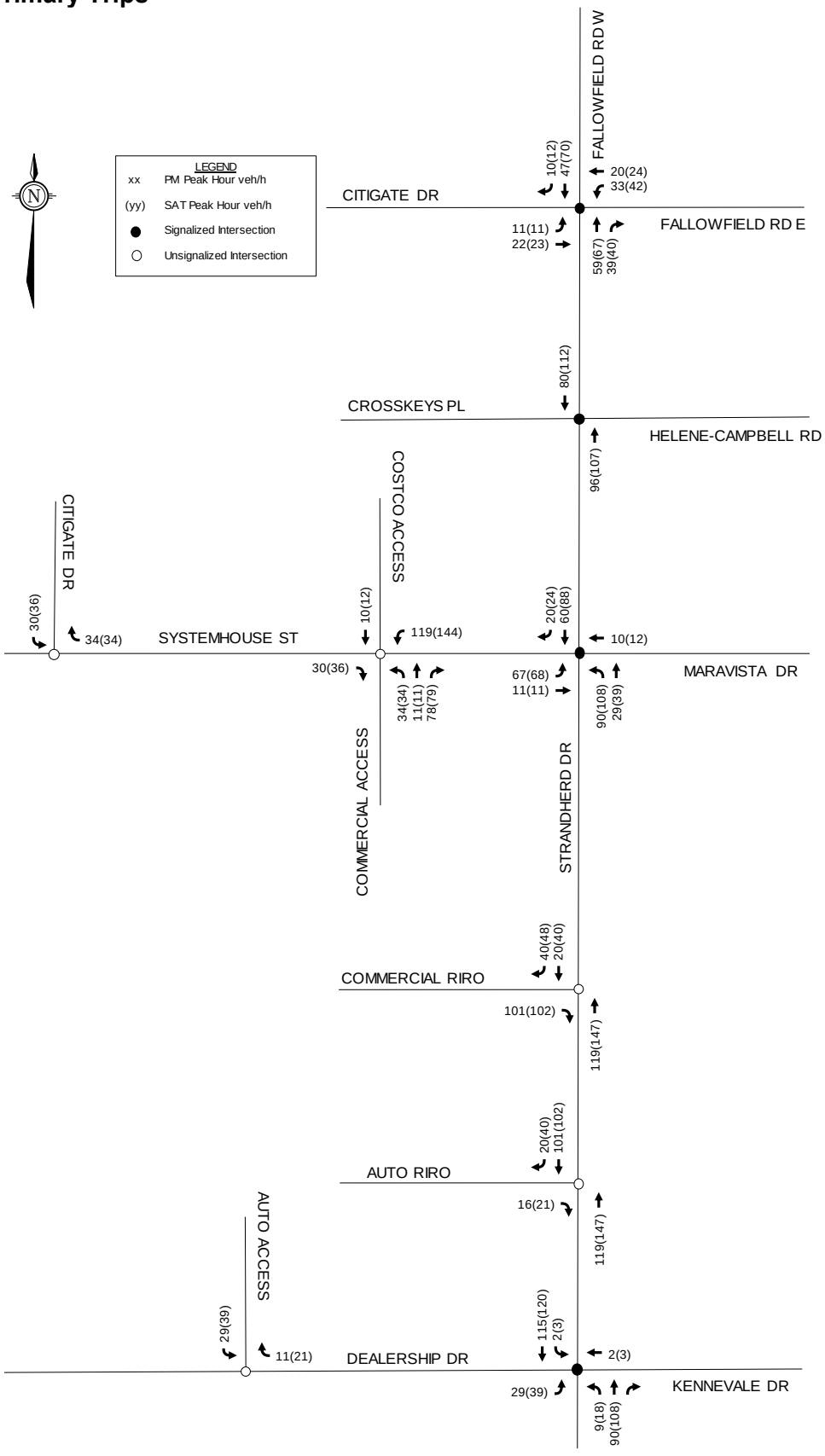
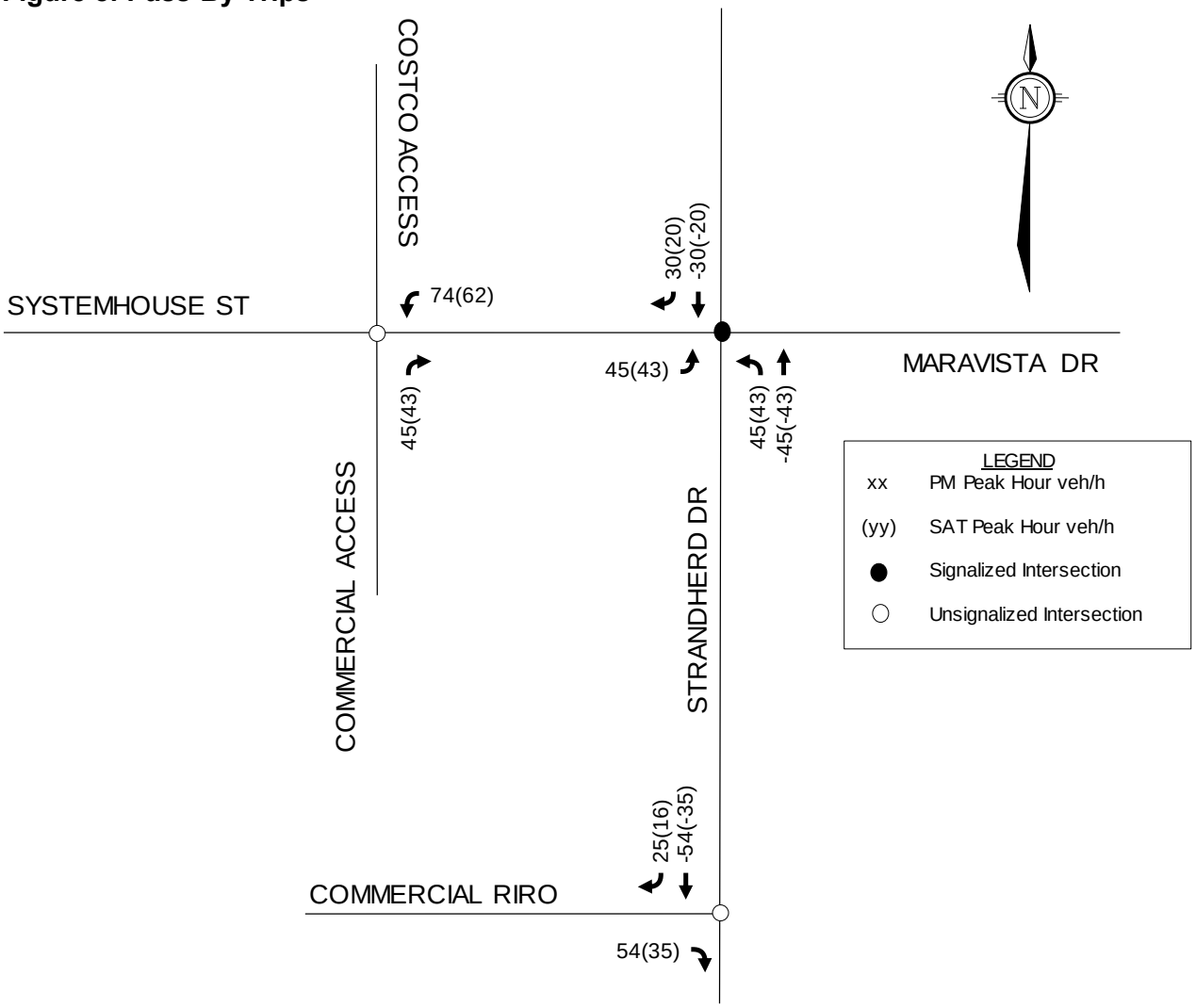


Figure 8: Pass-By Trips



Section 25(p) of the PABL identifies a minimum separation requirement of 3.0m between the nearest edge of a private approach and the closest property line, as measured at the street line. All accesses are at least 3.0m from any property line.

Section 25(u) of the PABL identifies a maximum driveway grade of 2% for a distance of 9m within the property, for driveways serving more than 50 parking spaces. The site grading will be confirmed as part of the future Site Plan Application.

Intersection sight distance (ISD) at the proposed accesses have been determined using the TAC *Geometric Design Guidelines for Canadian Roads.* The ISD requirements for the Strandherd Drive accesses, based on a design speed of 80km/h, is as follows:

- Left Turn from Minor Road 170 metres
- Right Turn from Minor Road 145 metres

The ISD requirements for the Systemhouse Street access, based on a design speed of 60km/h, is as follows:

- Left Turn from Minor Road 130 metres
- Right Turn from Minor Road 110 metres

As the accesses meet Strandherd Drive and Systemhouse Street at a perpendicular angle and no sightline obstruction has been identified based on a desktop review, available sightlines are within recommended guidelines to allow safe all directional access to the development.

The TAC Geometric Design Guide for Canadian Roads identifies minimum clear throat lengths based on road classification and land use. For the Automobile Dealership portion of the development the Shopping Centre land use has been assumed, for a shopping centre land use under 25,000m^2 GFA a minimum clear throat length of 8m is required for collector roads and 15m is required arterial roads. For the Commercial portion of the development the supermarket land use has been assumed, for a supermarket land use with over 2,000m^2 of GFA a minimum clear throat length of 25m is required for collector roads and 40m is required for arterial roads. Based on the concept plan, the aforementioned clear throat lengths are anticipated to be achievable. However, the available clear throat length will be confirmed as part of a future Site Plan application.

The TAC Geometric Design Guide for Canadian Roads identifies a minimum corner clearance distance of 70m for an access upstream and downstream of a signal on a divided arterial road and 55m for an access upstream of a signal on an undivided collector road. The available corner clearance will be confirmed as part of a future Site Plan application.

2.8 Exemptions Review

This module reviews possible exemptions from the final Transportation Impact Assessment, as outlined in the *2017 TIA Guidelines*. The applicable exemptions for this site are shown in **Table 7**.

Table 7: TIA Exemptions

Module	Element	Exemption Criteria	Exemption Status
4.1 Development Design	*4.1.2* Circulation and Access	• Only required for Site Plan and Zoning By-law Applications	Not Exempt
	4.1.3 New Street Networks	• Only required for plans of subdivision	Exempt
4.2 Parking	*4.2.1* Parking Supply	• Only required for Site Plan and Zoning By-law Applications	Not Exempt
4.6 Neighbourhood Traffic Management	*4.6.1* Adjacent Neighbourhoods	• If the development meets all of the following criteria along the route(s) site generated traffic is expected to utilize between arterial road and the site's access: 1. Access to a Collector or Local; 2. "Significant sensitive land use presence" exists where there is at least two of the following adjacent to the subject street segment (School, Park, Retirement/Older Adult Facility, Licenced Child Care Centre, Community Centre, or 50% or greater of the property is occupied by residential land uses) 3. Application is for Zoning By-Law Amendment or Draft Plan of Subdivision	Exempt

Module	Element	Exemption Criteria	Exemption Status
		4. At least 75 site generated auto trips 5. Site Trip Infiltration expected	
4.7 Transit	*4.7.1 Transit Route Capacity*	• Greater than 75 site transit trips	Exempt
	4.7.2 Transit Priority Requirements	• Greater than 75 site auto trips	Not Exempt
4.8 Network Concept	*All elements*	• Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning	Exempt
4.9 Intersection Design	*4.9.1 Intersection Controls*	• Greater than 75 site auto trips	Not Exempt
	4.9.2 Intersection Design	• Greater than 75 site auto trips	Not Exempt

The following modules will be included in the TIA report:

- Module 4.1: Development Design
- Module 4.2: Parking
- Module 4.3: Boundary Streets
- Module 4.5: Transportation Demand Management
- Module 4.9: Intersection Design

3.0 FORECASTING

3.1 Background Traffic

3.1.1 Other Area Developments

A review of other area development traffic has been conducted, per the developments listed in Section 2.2.2. Traffic generated by these developments have been considered in other studies. Relevant excerpts of the traffic studies associated with the developments below are included in **Appendix G**.

575 Dealership Drive
A TIA was not prepared for the industrial/office space development. Therefore, additional traffic generated by the development is assumed to be insignificant and has not been included within this report.

115 Lusk Street
The proposed restaurant and medical office development is expected to generate 13 and 32 vehicle trips during the AM and PM peak hours, respectively. Site traffic for the proposed development has been included in 2025 and 2030 background traffic.

135 Lusk Street
The proposed hotel development is expected to generate 42 and 53 vehicle trips during the AM and PM peak hours, respectively. Site traffic for the proposed development has been included in 2025 and 2030 background traffic.

140 Lusk Street
The proposed hotel development is expected to generate 36 and 45 vehicle trips during the AM and PM peak hours, respectively. Site traffic for the proposed development has been included in 2025 and 2030 background traffic.

4149 Strandherd Drive
Both of the car dealerships within this site has been built and traffic generated by it has been captured in existing traffic counts. Site traffic for the proposed development has been included in 2025 and 2030 background traffic.

444 CitiGate Drive and 560 Dealership Drive
The proposed industrial/warehouse development is expected to generate 623 and 548 vehicle trips during the AM and PM peak hours at full build out, respectively.

4433 Strandherd Drive
The proposed hotel development is expected to generate 48, 53, and 77 vehicle trips during the AM, PM, and Saturday peak hours, respectively. Site traffic for the proposed development has been included in 2025 and 2030 background traffic.

3387 Borrisokane Road (Glenview Homes)
The proposed residential development is expected to generate 320 and 231 vehicle trips at full buildout during the AM and PM peak hours, respectively. As the development is roughly 50% built out based on recent aerial photography, 160 and 116 vehicle trips have been included in 2025 and 2030 background traffic.

3345 Borrisokane Road (Half Moon Bay West)
The proposed residential development is expected to generate 441 and 610 vehicle trips at full buildout during the AM and PM peak hours, respectively. As the development is roughly 90% built out based on recent aerial photography, 44 and 61 vehicle trips have been included in 2025 and 2030 background traffic.

3288 & 3300 Borrisokane Road and 4305, 4345, and 4375 McKenna Casey Drive
The proposed residential development is expected to generate 554 and 606 vehicle trips during the AM and PM peak hours at full build out, respectively. The development is expected to be fully built out by 2030 with construction occurring in phases per the March 2024 TIA prepared for the development. Half of the site traffic for the proposed development has been included in 2025 background traffic and all site traffic has been included in the 2030 background traffic.

3432 Greenbank Road
The proposed residential development is expected to generate 187 and 205 vehicle trips during the AM and PM peak hours, respectively. Site traffic for the proposed development has been included in 2025 and 2030 background traffic.

3194 Jockvale Road
The proposed mixed-use development is expected to generate 221 and 589 vehicle trips during the AM and PM peak hours, respectively. Site traffic for the proposed development has been included in 2030 background traffic.

1034 McGarry Terrace
The proposed mixed-use development is expected to generate 52 and 57 vehicle trips during the AM and PM peak hours, respectively. Site traffic for the proposed development has been included in 2030 background traffic.

3.1.2 General Background Growth Rate

A review of other recent transportation studies in the vicinity of the subject site was conducted in order to establish a base background growth rate.

Growth rates used in other study area developments vary between 1% (such as the reports for 1034 McGarry Terrrace, 3194 Jockvale Road, and 4433 Strandherd Drive), 1.5% (such as the reports for 3288 Borrisokane Road and 4149 Strandherd Drive), and 2% (such as the reports for 3432 Greenbank Road and 4149 Strandherd Drive).

The TIA for 4433 Strandherd Drive completed by Novatech in 2019 assumed a background growth rate of 1% as a significant portion of adjacent development traffic was accounted for separately. This approach was consistent with the 4401 Fallowfield Road CTS published by IBI Group in 2015, and the CitiGate Retail Development TIS published by Parsons in 2015.

A 1% background growth rate was applied to through traffic along Strandherd Drive for the purpose of this report, in light of the other study area developments that have been accounted for separately. This approach is consistent with other recent transportation studies in the area.

3.2 Future Traffic Conditions

The figures listed below present the following future traffic conditions:

- Proposed net site-generated traffic volumes in 2025 are shown in **Figure 9**;
- Background traffic volumes in 2025 are shown in **Figure 10**;
- Background traffic volumes in 2030 are shown in **Figure 11**;
- Total traffic volumes in 2025 are shown in **Figure 12**;
- Total traffic volumes in 2030 are shown in **Figure 13**.

3.3 Demand Rationalization

A review of the existing and background intersection operations has been conducted to determine if the study area intersections are operating above the City target LOS E (i.e. V/C >=1.0). The intersection parameters used in the analysis are consistent with the *2017 TIA Guidelines* (Saturated Flow Rate: 1,800 vphpl, Peak Hour Factor: 0.9 in existing conditions and 1.0 in future conditions).

Signal timing plans were obtained from the City, and are included in **Appendix H**.

Figure 9: Net Site-Generated Volumes

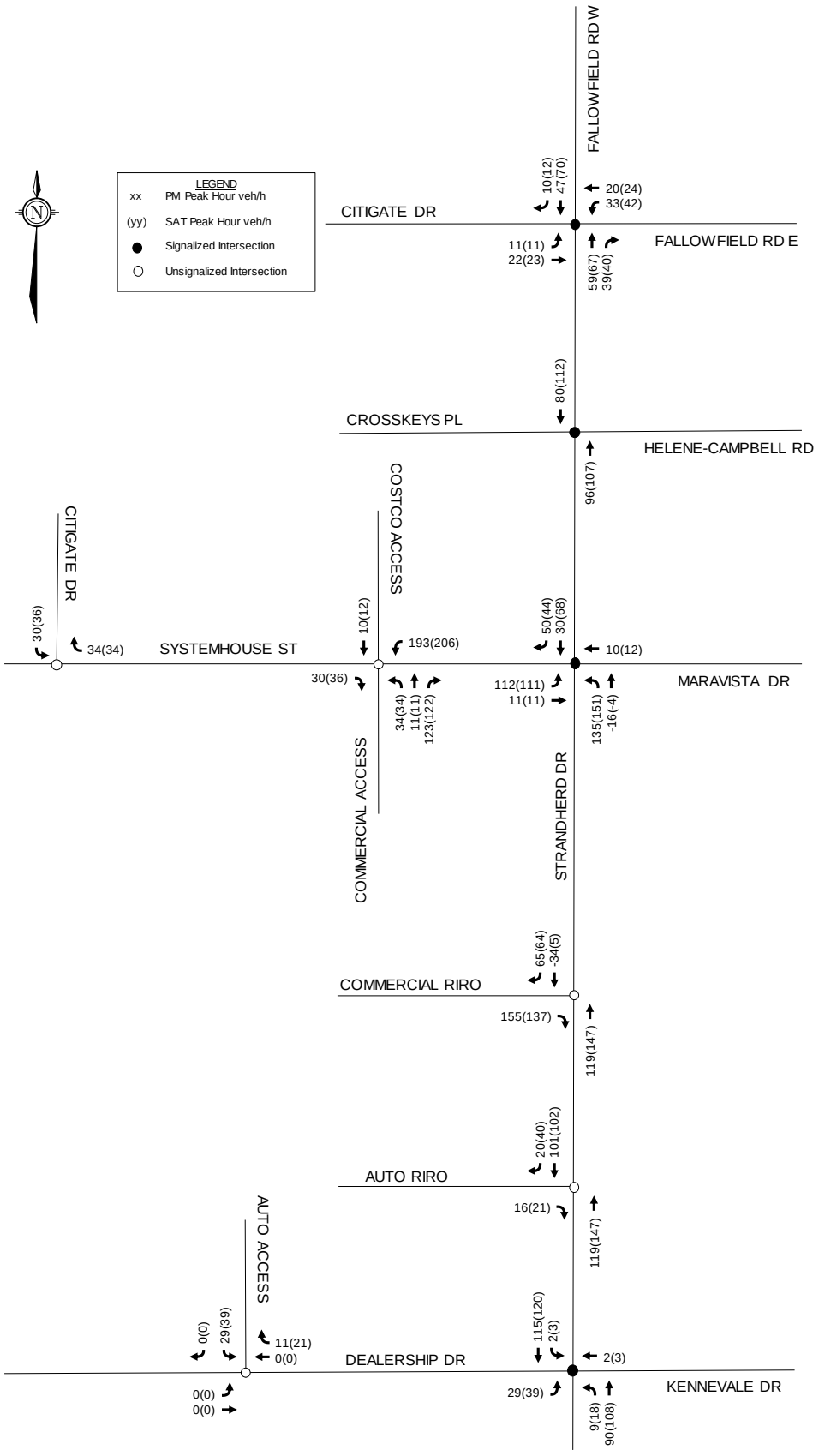


Figure 10: 2025 Background Traffic

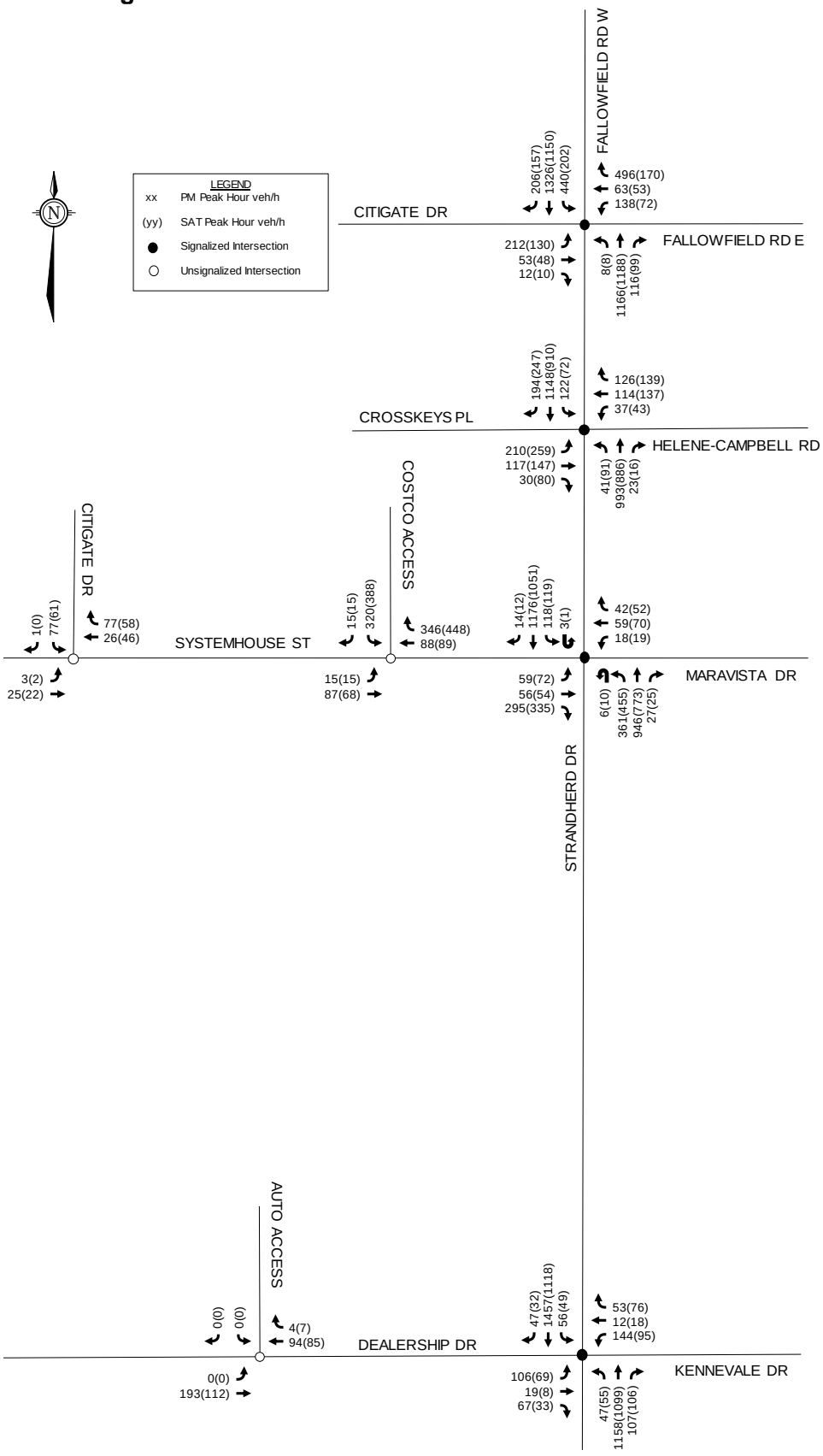


Figure 11: 2030 Background Traffic

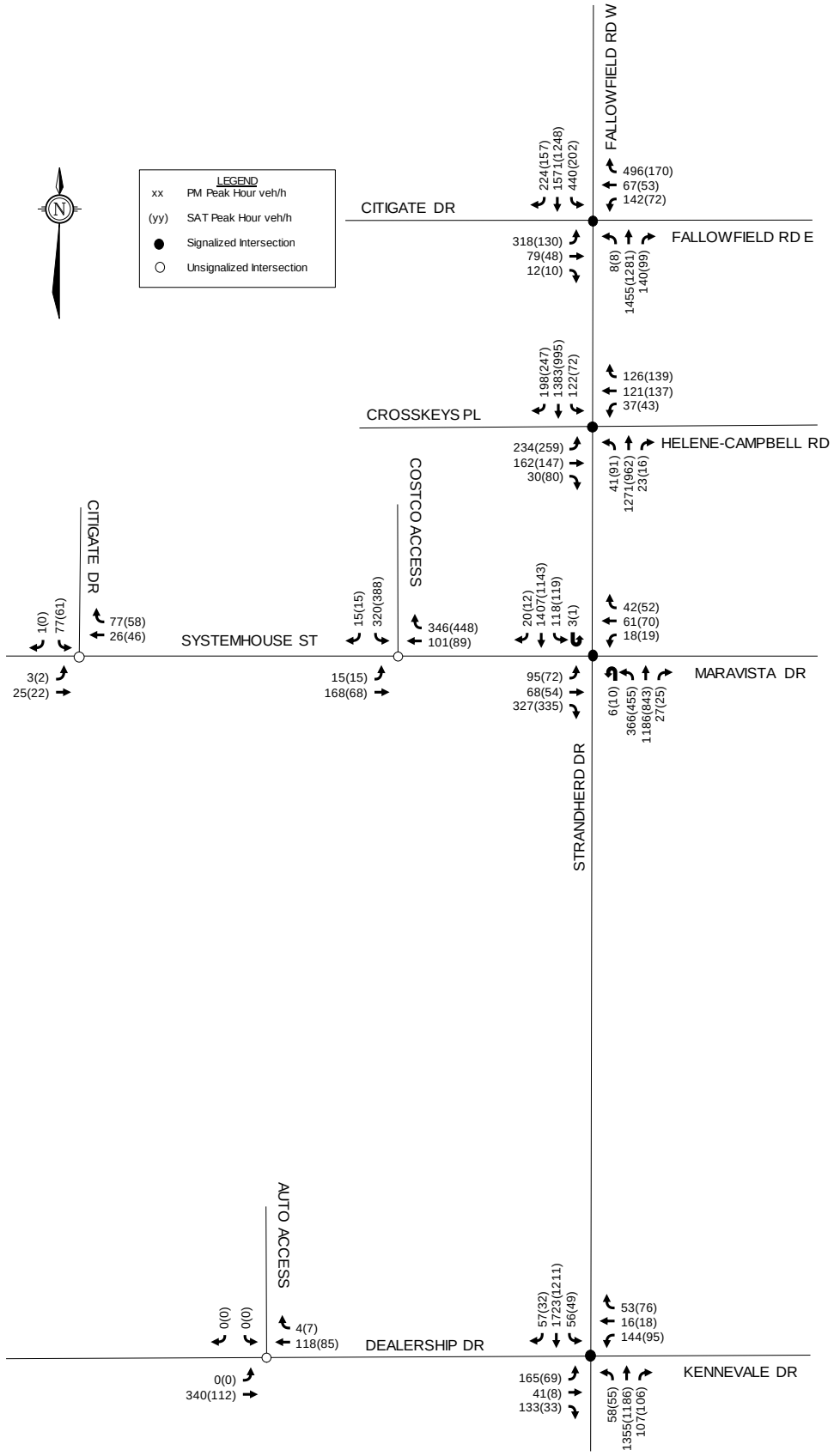


Figure 12: 2025 Total Traffic

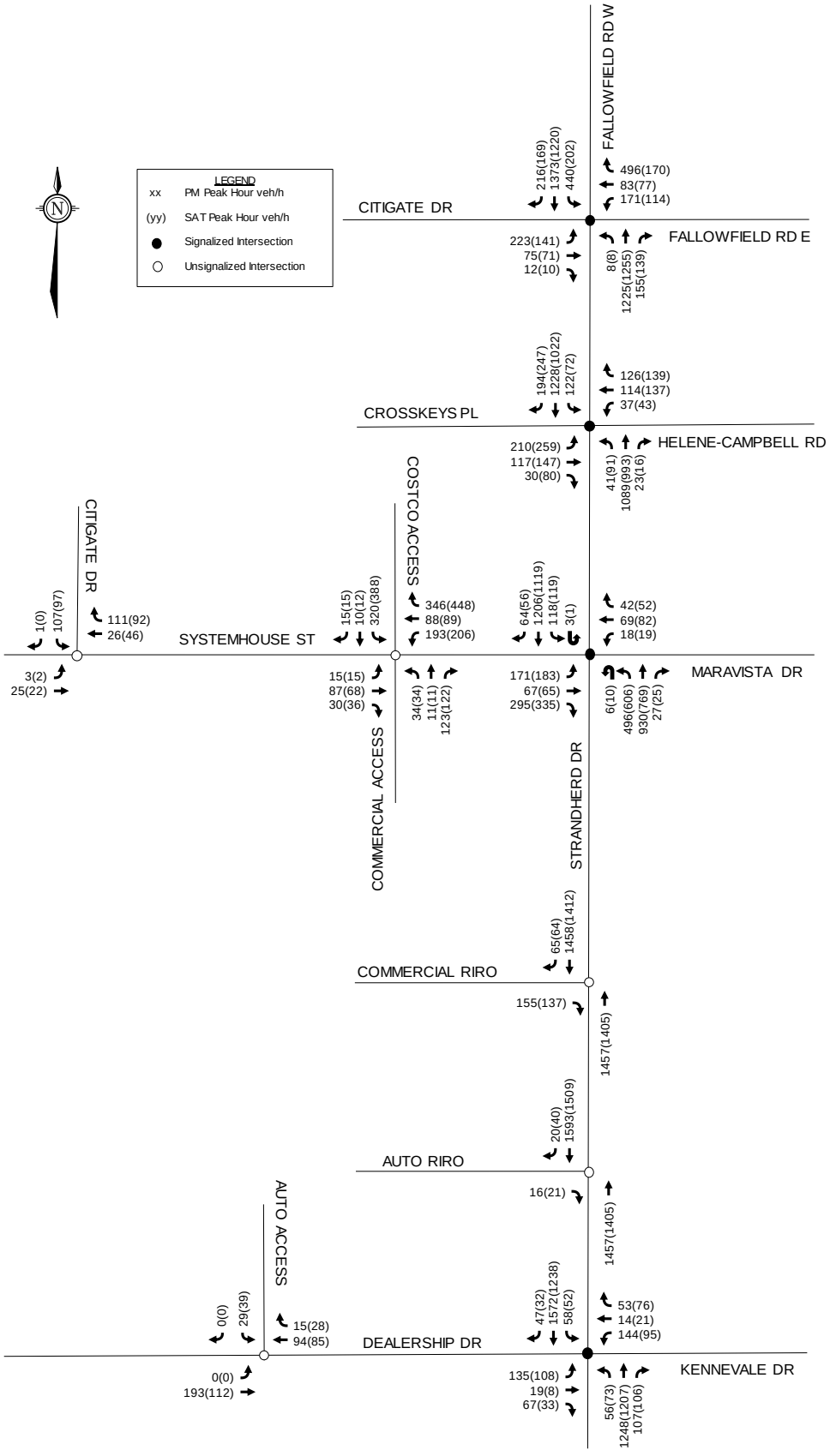
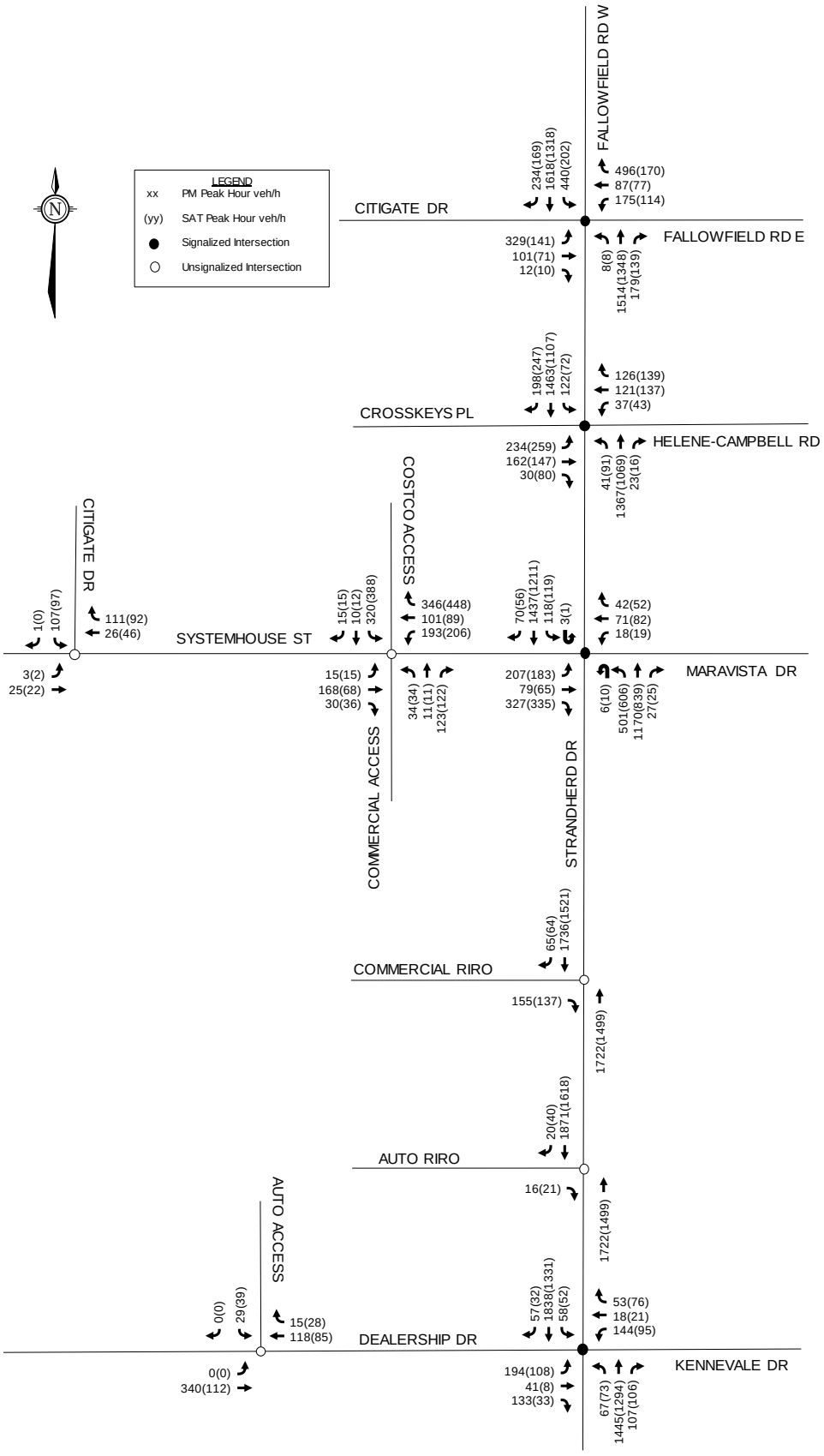


Figure 13: 2030 Total Traffic



3.3.1 Existing Intersection Operations

Intersection Capacity analysis has been conducted for the existing traffic conditions. The results of the analysis are summarized in **Table 8** for the weekday PM and Saturday peak hours. Detailed reports are included in **Appendix I**.

Table 8: Existing Traffic Operations

Intersection	Mvmt	Storage/ Spacing(1)	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
Strandherd Dr/Citigate Dr/Fallowfield Rd	EBL	65m	**1.07 [F]**	~29	#53	0.83 [D]	13	#29
	EBT/R	240m	0.19 [A]	11	19	0.30 [A]	10	23
	WBL	125m	0.89 [D]	~41	#80	0.70 [B]	13	#34
	WBT	360m	0.19 [A]	13	21	0.33 [A]	11	23
	WBR	100m	0.90 [D]	44	77	0.55 [A]	0	17
	NBL	70m	0.09 [A]	2	m3	0.05 [A]	1	m2
	NBT	200m	**1.13 [F]**	~176	**#242**	0.76 [C]	55	104
	NBR	90m	0.19 [A]	0	m3	0.10 [A]	0	m1
	SBL	120m	0.75 [C]	53	#92	0.56 [A]	21	32
	SBT	440m	0.70 [B]	104	#238	0.57 [A]	63	123
	SBR	80m	0.20 [A]	3	21	0.14 [A]	1	9
Strandherd Dr/CrossKeys Pl/Hélène-Campbell Rd	EBL	60m	0.81 [D]	52	**73**	0.84 [D]	57	**81**
	EBT	110m	0.31 [A]	25	38	0.31 [A]	27	39
	EBR	60m	0.08 [A]	0	0	0.17 [A]	0	7
	WBL	30m	0.15 [A]	8	15	0.14 [A]	8	15
	WBT	160m	0.30 [A]	25	37	0.29 [A]	25	37
	WBR	70m	0.30 [A]	0	14	0.28 [A]	0	13
	NBL	150m	0.23 [A]	5	m8	0.41 [A]	12	m19
	NBT	400m	0.67 [B]	108	147	0.62 [B]	98	120
	NBR	90m	0.04 [A]	0	m2	0.02 [A]	0	m0
	SBL	80m	0.57 [A]	35	m#59	0.55 [A]	18	m#36
	SBT	200m	0.58 [A]	42	m124	0.61 [B]	81	50
	SBR	70m	0.24 [A]	1	m38	0.34 [A]	1	8
Strandherd Dr/Sytemhouse St/Maravista Dr	EBL	80m	0.33 [A]	8	15	0.46 [A]	9	17
	EBT/R	100m	0.72 [C]	34	60	0.64 [B]	14	47
	WBL	20m	0.20 [A]	4	12	0.22 [A]	4	12
	WBT/R	90m	0.35 [A]	19	28	0.31 [A]	14	29
	NBL	125m	0.68 [B]	45	#94	0.76 [C]	~79	#111
	NBT/R	480m	0.63 [B]	81	#159	0.67 [B]	~100	#139
	SBL	150m	0.74 [C]	34	#62	0.76 [C]	31	m#59
	SBT	400m	0.89 [D]	56	#195	**1.21 [F]**	~151	#194
	SBR	60m	0.02 [A]	0	m0	0.02 [A]	0	m0
Strandherd Dr/Dealership Dr/Kennevale Dr	EBL	70m	0.54 [A]	25	41	0.40 [A]	15	25
	EBT	175m	0.07 [A]	4	10	0.03 [A]	2	5
	EBR	70m	0.20 [A]	6	15	0.10 [A]	0	5
	WBL	60m	0.73 [C]	36	55	0.54 [A]	22	34
	WBT/R	130m	0.23 [A]	2	13	0.33 [A]	3	15
	NBL	70m	0.22 [A]	5	11	0.23 [A]	5	10
	NBT/R	1,000m	0.63 [B]	99	156	0.62 [B]	87	142
	SBL	50m	0.44 [A]	14	27	0.41 [A]	11	#25
	SBT	480m	0.66 [B]	109	166	0.52 [A]	66	115

Intersection	Mvmt	Storage/ Spacing(1)	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
	SBR	110m	0.05 [A]	0	0	0.04 [A]	0	0
Systemhouse St/Citigate Dr	EB	150m	11 sec. [B]	-	1	10 sec. [B]	-	1
	WB	330m	9 sec. [A]	-	3	10 sec. [B]	-	3
	SB	330m	7 sec. [A]	-	1	7 sec. [A]	-	1
Systemhouse St/Costco Access	EB	330m	1 sec. [A]	-	0	2 sec. [A]	-	0
	WB	110m	0 sec. [A]	-	0	0 sec. [A]	-	0
	SB	160m	15 sec. [C]	-	23	17 sec. [C]	-	31

~: volume for the 50th percentile cycle exceeds capacity
#: volume for the 95th percentile cycle exceeds capacity

Under existing traffic conditions, all movements at the Strandherd Drive/CrossKeys Place/Hélène-Campbell Road, Strandherd Drive/Dealership Drive/Kennevale Drive, Systemhouse Street/Citigate Drive, and Systemhouse Street/Costco Access intersections are currently operating with a LOS of D or better during PM and Saturday peak hour conditions.

Critical eastbound left and northbound through movements at the Strandherd Drive/Citigate Drive/Fallowfield Road intersection operate with a LOS F during the PM peak hour. The maximum (95th percentile) northbound through queues extend into the upstream Strandherd Drive/Cross Keys Place intersection. The intersection operated with a LOS D during the Saturday peak hour.

The critical southbound through movement at the Strandherd Drive/Sytemhouse Street/Maravista Drive intersection operates with a LOS F during the Saturday peak hour. The intersection operates with a LOS D during the PM peak hour.

3.3.2 2025 Background Traffic Conditions

Operating conditions at study area intersections are summarized in **Table 9** for the 2025 weekday PM and Saturday peak periods. Detailed reports are included in **Appendix I**.

Table 9: 2025 Background Traffic Operations

Intersection	Mvmt	Storage/ Spacing(1)	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
Strandherd Dr/Citigate Dr/Fallowfield Rd	EBL	65m	**1.07 [F]**	~28	#53	0.93 [E]	15	#33
	EBT/R	240m	0.22 [A]	11	20	0.36 [A]	10	22
	WBL	125m	0.97 [E]	~42	#82	0.54 [A]	16	#43
	WBT	360m	0.22 [A]	13	21	0.32 [A]	11	23
	WBR	100m	0.90 [D]	34	67	0.57 [A]	0	18
	NBL	70m	0.12 [A]	2	m4	0.10 [A]	2	m3
	NBT	200m	0.99 [E]	~157	**#243**	0.71 [C]	50	94
	NBR	90m	0.18 [A]	1	m3	0.12 [A]	0	m2
	SBL	120m	0.75 [C]	50	69	0.57 [A]	22	32
	SBT	440m	0.69 [B]	101	#239	0.55 [A]	59	118
	SBR	80m	0.19 [A]	0	13	0.15 [A]	0	7

Intersection	Mvmt	Storage/ Spacing(1)	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
Strandherd Dr/CrossKeys Pl/Hélène-Campbell Rd	EBL	60m	0.79 [C]	47	**68**	0.81 [D]	52	**72**
	EBT	110m	0.30 [A]	23	36	0.31 [A]	25	36
	EBR	60m	0.08 [A]	0	0	0.17 [A]	0	6
	WBL	30m	0.14 [A]	7	15	0.14 [A]	7	14
	WBT	160m	0.29 [A]	23	35	0.29 [A]	23	34
	WBR	70m	0.30 [A]	0	14	0.28 [A]	0	12
	NBL	150m	0.22 [A]	5	m7	0.38 [A]	10	m17
	NBT	400m	0.66 [B]	105	153	0.57 [A]	95	116
	NBR	90m	0.03 [A]	0	m1	0.02 [A]	0	m0
	SBL	80m	0.54 [A]	31	m44	0.51 [A]	17	m31
	SBT	200m	0.60 [A]	45	m122	0.55 [A]	69	41
	SBR	70m	0.21 [A]	0	m31	0.29 [A]	0	7
Strandherd Dr/Sytemhouse St/Maravista Dr	EBL	80m	0.30 [A]	7	14	0.42 [A]	8	15
	EBT/R	100m	0.66 [B]	24	49	0.58 [A]	8	36
	WBL	20m	0.20 [A]	4	12	0.22 [A]	4	12
	WBT/R	90m	0.31 [A]	16	25	0.28 [A]	12	25
	NBL	125m	0.70 [B]	41	#82	0.77 [C]	~67	#98
	NBT/R	480m	0.65 [B]	83	#172	0.64 [B]	~96	#134
	SBL	150m	0.72 [C]	31	#54	0.71 [C]	27	#51
	SBT	400m	0.90 [D]	61	#218	**1.10 [F]**	~147	#189
	SBR	60m	0.02 [A]	0	m0	0.02 [A]	0	m0
Strandherd Dr/Dealership Dr/Kennevale Dr	EBL	70m	0.52 [A]	23	37	0.39 [A]	14	23
	EBT	175m	0.07 [A]	4	10	0.03 [A]	2	5
	EBR	70m	0.19 [A]	5	14	0.10 [A]	0	5
	WBL	60m	0.70 [B]	33	49	0.50 [A]	20	30
	WBT/R	130m	0.23 [A]	2	13	0.33 [A]	4	15
	NBL	70m	0.24 [A]	6	12	0.27 [A]	6	12
	NBT/R	1,000m	0.63 [B]	98	159	0.59 [A]	79	132
	SBL	50m	0.43 [A]	13	25	0.40 [A]	10	#25
	SBT	480m	0.69 [B]	118	185	0.53 [A]	67	118
	SBR	110m	0.05 [A]	0	0	0.03 [A]	0	0
Systemhouse St/Citigate Dr	EB	150m	11 sec. [B]	-	1	10 sec. [B]	-	1
	WB	330m	9 sec. [A]	-	3	10 sec. [B]	-	3
	SB	330m	7 sec. [A]	-	1	7 sec. [A]	-	1
Systemhouse St/Costco Access	EB	330m	1 sec. [A]	-	0	2 sec. [A]	-	0
	WB	110m	0 sec. [A]	-	0	0 sec. [A]	-	0
	SB	160m	14 sec. [C]	-	23	15 sec. [C]	-	23

~: volume for the 50th percentile cycle exceeds capacity
#: volume for the 95th percentile cycle exceeds capacity

Due to analysis of future conditions being completed using a PHF of 1.0 as opposed to the 0.9 that was used during existing conditions analysis some movements show a small improvement in terms of capacity and queue lengths compared to results from the existing conditions.

Under 2025 background traffic conditions, the critical eastbound left turn movement at the Strandherd Drive/Citigate Drive/Fallowfield Road intersection continues to operate with a LOS F

during the PM peak hour. While the northbound through movement operates with a LOS E during the PM peak hour, maximum queues extend through the upstream Strandherd Drive/Cross Keys Place intersection. During the Saturday peak hour the eastbound left movement deteriorates to a LOS E compared to a LOS D during existing traffic conditions.

The critical southbound through movement at the Strandherd Drive/Sytemhouse Street/Maravista Drive intersection continues to operate with a LOS F during the Saturday peak hour.

All other study area intersections continue to operate with a LOS D or better during the PM and Saturday peak hours.

3.3.3 2030 Background Traffic Conditions

Operating conditions at study area intersections are summarized in **Table 10** for the 2030 weekday PM and Saturday peak periods. Detailed reports are included in **Appendix I**.

Table 10: 2030 Background Traffic Operations

Intersection	Mvmt	Storage/ Spacing(1)	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
Strandherd Dr/Citigate Dr/Fallowfield Rd	EBL	65m	**1.60 [F]**	~55	**#84**	0.93 [E]	15	#33
	EBT/R	240m	0.31 [A]	18	27	0.36 [A]	10	22
	WBL	125m	**1.35 [F]**	~44	#84	0.54 [A]	16	#43
	WBT	360m	0.23 [A]	14	22	0.32 [A]	11	23
	WBR	100m	0.90 [D]	34	68	0.57 [A]	0	18
	NBL	70m	0.12 [A]	2	m3	0.10 [A]	2	m3
	NBT	200m	**1.24 [F]**	**~230**	**#319**	0.77 [C]	52	102
	NBR	90m	0.22 [A]	1	m3	0.12 [A]	0	m4
	SBL	120m	0.75 [C]	50	69	0.57 [A]	22	32
	SBT	440m	0.82 [D]	137	#303	0.59 [A]	67	134
	SBR	80m	0.21 [A]	5	27	0.15 [A]	1	10
Strandherd Dr/CrossKeys Pl/Hélène-Campbell Rd	EBL	60m	0.81 [D]	52	**74**	0.81 [D]	52	**72**
	EBT	110m	0.38 [A]	32	46	0.31 [A]	25	36
	EBR	60m	0.07 [A]	0	0	0.17 [A]	0	6
	WBL	30m	0.14 [A]	7	14	0.14 [A]	7	14
	WBT	160m	0.28 [A]	23	35	0.29 [A]	23	34
	WBR	70m	0.28 [A]	0	13	0.28 [A]	0	12
	NBL	150m	0.22 [A]	5	m6	0.38 [A]	10	m16
	NBT	400m	0.87 [D]	143	#207	0.62 [B]	104	126
	NBR	90m	0.03 [A]	0	m0	0.02 [A]	0	m0
	SBL	80m	0.57 [A]	31	m37	0.51 [A]	17	m28
	SBT	200m	0.76 [C]	53	m#192	0.60 [A]	78	75
	SBR	70m	0.23 [A]	2	m29	0.29 [A]	0	12
Strandherd Dr/Sytemhouse St/Maravista Dr	EBL	80m	0.46 [A]	11	20	0.42 [A]	8	15
	EBT/R	100m	0.72 [C]	42	68	0.58 [A]	8	36
	WBL	20m	0.19 [A]	4	12	0.22 [A]	4	12
	WBT/R	90m	0.32 [A]	16	25	0.28 [A]	12	25
	NBL	125m	0.70 [B]	42	#84	0.77 [C]	~67	#98
	NBT/R	480m	0.86 [D]	116	#236	0.70 [B]	~113	#152
	SBL	150m	0.72 [C]	30	m36	0.71 [C]	28	m#51
	SBT	400m	**1.16 [F]**	105	#278	**1.19 [F]**	~170	#212

Intersection	Mvmt	Storage/ Spacing(1)	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
	SBR	60m	0.03 [A]	0	m0	0.02 [A]	0	m0
Strandherd Dr/Dealership Dr/Kennevale Dr	EBL	70m	0.75 [C]	37	57	0.39 [A]	14	23
	EBT	175m	0.13 [A]	8	17	0.03 [A]	2	5
	EBR	70m	0.35 [A]	17	29	0.10 [A]	0	5
	WBL	60m	0.65 [B]	32	50	0.50 [A]	20	30
	WBT/R	130m	0.22 [A]	3	15	0.33 [A]	4	15
	NBL	70m	0.28 [A]	7	13	0.27 [A]	6	12
	NBT/R	1,000m	0.74 [C]	132	#216	0.63 [B]	88	147
	SBL	50m	0.43 [A]	13	25	0.40 [A]	10	#25
	SBT	480m	0.87 [D]	172	#268	0.57 [A]	75	133
	SBR	110m	0.06 [A]	0	1	0.03 [A]	0	0
Systemhouse St/Citigate Dr	EB	150m	11 sec. [B]	-	1	10 sec. [B]	-	1
	WB	330m	9 sec. [A]	-	3	10 sec. [B]	-	3
	SB	330m	7 sec. [A]	-	1	7 sec. [A]	-	1
Systemhouse St/Costco Access	EB	330m	1 sec. [A]	-	0	2 sec. [A]	-	0
	WB	110m	0 sec. [A]	-	0	0 sec. [A]	-	0
	SB	160m	16 sec. [C]	-	23	15 sec. [C]	-	23

~: volume for the 50th percentile cycle exceeds capacity
#: volume for the 95th percentile cycle exceeds capacity

Under 2030 background traffic conditions, the critical eastbound left, westbound left, and northbound through movements at the Strandherd Drive/Citigate Drive/Fallowfield Road intersection operate with a LOS F during the PM peak hour. During the Saturday peak hour the intersection operates with a LOS E.

The critical southbound through movement at the Strandherd Drive/Sytemhouse Street/Maravista Drive intersection operates with a LOS F during the PM and Saturday peak hours.

All other study area intersections continue to operate with a LOS D or better during the PM and Saturday peak hours.

The failing intersection operations along Strandherd Drive are attributable to high traffic volumes along the corridor. This is exacerbated by background growth and other area developments noted in Section 3.0. The approximate required reduction in volumes to meet the target Auto LOS for each over-capacity movement in 2030 is included below.

<u>PM Peak Hour</u>

- Strandherd Drive/Citigate Drive/Fallowfield Road
  - Eastbound left (v/c: 1.60): reduction of 120 vehicles required;
  - Westbound left (v/c: 1.35): reduction of 40 vehicles required;
  - Northbound through (v/c: 1.24): reduction of 280 vehicles required.

- Strandherd Drive/Sytemhouse Street/Maravista Drive
  - Southbound through (v/c: 1.16): reduction of 190 vehicles required.

Saturday Peak Hour

- Strandherd Drive/Sytemhouse Street/Maravista Drive
    - Southbound through (v/c: 1.19): reduction of 180 vehicles required.

Traffic throughout the study area could be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate time to travel for drivers using the study area roadways to make use of off-peak capacity, and alternate routes for travel. A further description of each option is provided below.

Increased Use of Non-Auto Modes

The Southwest Transitway Extension is part of the 2031 Rapid Transit and Transit Priority Network Concept identified in the City's 2013 TMP. It will provide fully exclusive Bus Rapid Transit (BRT) between Hunt Club Road and the future Algonquin LRT station connecting the missing link. It will also extend at-grade BRT following the Greenbank Road extension between Barrhaven Town Centre and Cambrian Road, with the possibility of future extension to Barnsdale Road. Ultimately, the City plans to convert the corridor to LRT from Algonquin Station to Barrhaven Town Centre Station. The overall timing of these transit projects is being reviewed as part of the City's ongoing update to the TMP.

Exhibit 2.13 of the City's 2013 TMP identifies a target transit modal share of 26% for the Barrhaven area, which is an increase of 6% compared to the 2011 observations. Based on Table 5 in the City's 2020 TRANS Trip Generation Manual, a transit modal share of 23% (average AM and PM peak) has been achieved in the South Nepean District. The aforementioned transit projects will provide fast, reliable transit service through the existing Barrhaven community and extend transit to the rapidly growing developments south of the Jock River. The provision of improved transit is anticipated to increase the transit modal share in these communities to be in line with or exceed the transit targets of the 2013 TMP. A further shift to transit will improve roadway congestion to/from the north, including reducing traffic along the Strandherd Drive corridor.

Alternate Travel Times

As congestion increases within the study area, some motorists will alter their travel to occur outside of the peak hours. A shift in travel times will result in a reduction of peak hour traffic volumes along the Strandherd Drive corridor.

Alternate Routes of Travel

As congestion increases within the study area, some motorists may choose alternate routes of travel outside the study area. Current north-south routes for commuters in the Barrhaven/South Nepean communities include Highway 416 (interchange at Fallowfield Road), Greenbank Road, Woodroffe Avenue, and Prince of Wales Drive.

A new interchange to Highway 416 is proposed at Barnsdale Road. This new interchange will provide an alternative connection to Highway 416 for residents of the rapidly growing community south of the Jock River. Currently the only Highway 416 interchange in Barrhaven is located along Fallowfield Road northwest of the study area and requires all commuters destined to/from the highway to use Strandherd Drive.

The new interchange at Barnsdale Road will reduce traffic along the Strandherd Drive corridor by re-routing commuters from south of the Jock River to the new interchange. It is understood that funding for the new interchange has been secured by the province, but the construction timeline is currently unknown.

Greenbank Road is currently a two-lane roadway south of Marketplace Avenue. It performs two 90-degree bends crossing the Jock River. The City's 2013 TMP identifies the Greenbank Road realignment within its 2031 affordable road network plan with implementation between 2014 and 2019. However, funding of the Greenbank Road realignment was reallocated to finance improvements to Strandherd Drive. The ultimate timeline for this project will be determined as part of the City's ongoing TMP update. The Greenbank Realignment and Southwest Transitway Extension project includes a new four lane cross-section with median BRT between Marketplace Avenue and Cambrian Road. It will provide additional capacity and an improved crossing of the Jock River improving the flow of north-south traffic to and from the community south of the Jock River. The increased capacity and improved flow of traffic will draw north-south vehicles away from Strandherd Drive onto the improved roadway.

The 2030 total traffic projections presented in the 3288 and 3300 Borisokane Road TIA dated March 2024, projects approximately 810 vehicles will perform the northbound left and 1,200 vehicles will perform the eastbound right at the Strandherd Drive/Borrisokane Road intersection (i.e. approximately 2,000 vehicles two-way along Strandherd Drive through the study area) during the 2030 PM peak hour. In order to reduce the v/c ratios to 1.0 along Strandherd Drive at our study area intersections during the PM peak hour, approximately 35% of the northbound left and 15% of the eastbound right turning vehicles from the 2030 total projections at the Strandherd Drive/Borrisokane Road intersection would need to be displaced through either a shift to non-auto modes, alternate travel times, or alternate routes (i.e. Greenbank Road or Barnsdale Interchange).

Based on the foregoing, Strandherd Drive will continue to experience congestion due to background growth. City and Province investment in roadway and transit infrastructure projects within the Barrhaven/South Nepean is required to support the ongoing development in the area and to relieve existing and projected traffic pressures along the Strandherd Drive corridor. It is realistic to assume that with the implementation of new or improved transportation infrastructure to the Barrhaven/Nepean South area, the necessary reductions in background traffic along Strandherd Drive can be achieved.

The roadway and transit infrastructure projects within Barrhaven/South Nepean that will alleviate background traffic conditions are shown in the following figure.

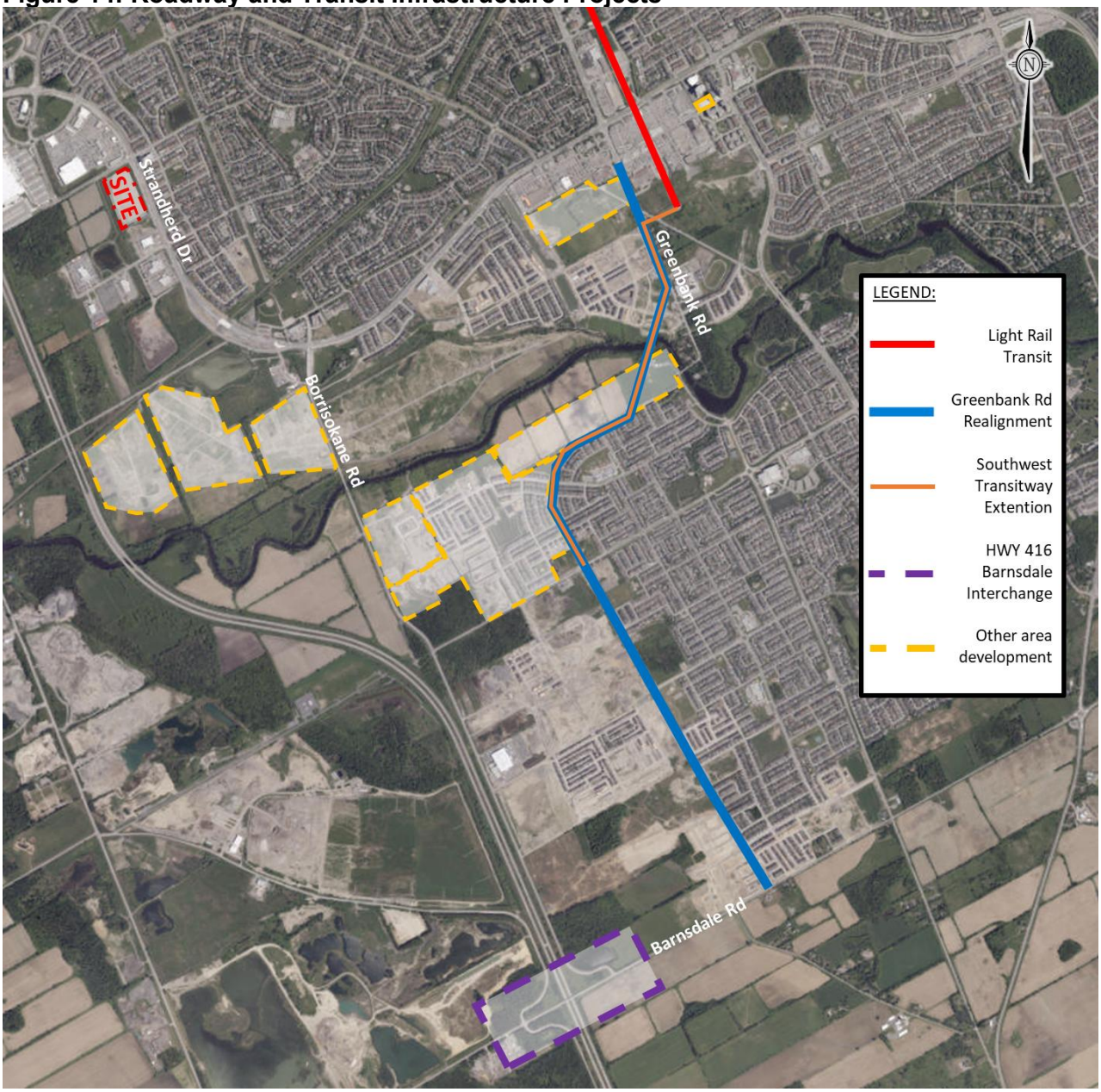
4.0 ANALYSIS

4.1 Development Design

The concept plan included in **Appendix A** has been provided to demonstrate the proposed use and approximate gross floor area within the subject site for the purposes of a Zoning application. As the final layout of the site is subject to change, and will be driven by perspective tenants a review of the development design is not included in this TIA.

A detailed review of the development design will be conducted as part of the future Site Plan Control application.

Figure 14: Roadway and Transit Infrastructure Projects



4.2 Parking

For the purposes of this TIA, a high-level review of parking requirements for the site has been conducted. However, the final parking provisions will be confirmed as part of a future Site Plan Control application.

The subject site is located in Area C of Schedule 1 and Schedule 1A of the City of Ottawa's ZBL. Minimum vehicle parking rates for the proposed dealership, commercial retail, and supermarket uses are identified in Sections 101 of the ZBL, and are summarized in **Table 11**.

The automobile dealership was assumed to have 30,000ft² of gross floor area with 3 service bays. The retail development was assumed to have 95,000ft² gross floor area of commercial retail.

Table 11: Parking Requirements per Zoning By-Law

Land Use	Rate	GFA or units	Required
Vehicle Parking			
Automobile Dealership	2 per 100m² of sales/showroom area	2,790m²	34
	2 per service bay	3 service bays	
Shopping Centre	3.6 per 100m² of gross leasable floor area	5,590m²	201
Retail Food Store	3.4 per 100m² of gross leasable floor area	3,240m²	110
TOTAL			**345**

The development is anticipated to require roughly 345 parking spaces.

Based on the preliminary concept plan, the proposed parking for the commercial retail portion of the site is approximately 22 spaces short of the current ZBL requirement. The parking provisions will be further reviewed as the concept plan is refined for the future Site Plan application.

4.3 Boundary Street MMLOS Review

This section provides a review of the boundary streets Strandherd Drive and Systemhouse Street using complete streets principles. The Multi-Modal Level of Service (MMLOS) Guidelines, produced by IBI Group in October 2015, and the 2017 MMLOS Addendum were used to evaluate the levels of service for each alternative mode of transportation on the boundary streets. The subject site is located within an Employment Area (per Schedule B of the City's previous Official Plan, which is referenced by the MMLOS Guidelines).

A detailed segment MMLOS review of the boundary streets is included in **Appendix J**. A summary of the segment MMLOS analysis is provided in **Table 12**.

Table 12: Segment MMLOS Summary

Segment	PLOS		BLOS		TLOS		TkLOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Strandherd Drive	**E**	C	A	B		-	A	B
Systemhouse Street	C	C	**F**	E		-	B	D

The results of the segment MMLOS analysis can be summarized as follows:

- Strandherd Drive does not meet the target pedestrian level of service (PLOS);
- Systemhouse Street does not meet the target bicycle level of service (BLOS);
- No target transit level of service (TLOS) has been identified for Strandherd Drive or Systemhouse Street and the actual TLOS has been studied as transit routes exist on Strandherd Drive and Systemhouse Street; and
- Strandherd Drive and Systemhouse Street meet the target truck level of service (TkLOS).

Pedestrian Level of Service
Neither side of Strandherd Drive meets the target PLOS C due to high traffic volumes and vehicle speeds.

Bicycle Level of Service
Systemhouse Street does not meet the target BLOS E. Based on the City's MMLOS Guidelines, on Systemhouse Street a BLOS E can be achieved by either reducing the posted speed to 40km/h or painting 1.2m wide bike lanes. This is identified for the City's consideration.

4.4 Transportation Demand Management

As the future tenants of the development are not known at this time, a review of Transportation Demand Management initiatives have not been included in this TIA.

A detailed review of Transportation Demand Management initiatives will be conducted as part of the future Site Plan Control application.

4.5 Intersection Design

4.5.1 Intersection MMLOS Review

This section provides a review of the signalized study area intersections using complete streets principles. The signalized intersections within the study area have been evaluated for PLOS, BLOS, TLOS, TkLOS, and AutoLOS based on existing conditions. The MMLOS targets considered in this review are associated with those outlined in Exhibit 22 of the *MMLOS Guidelines* for the 'Employment Area' Policy Area.

The full intersection MMLOS analysis is included in **Appendix J**. A summary of the results is shown in **Table 13**.

Table 13: Intersection MMLOS Summary

Intersection	PLOS		BLOS		TLOS		TkLOS		AutoLOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Strandherd Drive/Citigate Drive/Fallowfield Road	**F**	C	**F**	B	F	-	**C**	B	**F**	D
Strandherd Drive/CrossKeys Place/Hélène-Campbell Road	**F**	C	**E**	B	F	-	**E**	B	D	D
Strandherd Drive/Systemhouse Street/Maravista Drive	**F**	C	**F**	B	F	-	**C**	B	**F**	D
Strandherd Drive/Dealership Drive/Kennevale Drive	**F**	C	**A**	B	F	-	**C**	B	C	D

Strandherd Drive/Citigate Drive/Fallowfield Road
The intersection does not meet the target PLOS, BLOS, TkLOS, or AutoLOS.

There is limited opportunity to improve the PLOS and BLOS at this intersection without reducing the number of lanes crossed and providing two-stage left turning cycling facilities on all approaches. As there is only one westbound lane departing the intersection the southbound right turn movement does not meet the target TkLOS. However, since there is a wide flare in the northwest corner that accommodates large design vehicles, the southbound right turn movement is considered acceptable.

Strandherd Drive/CrossKeys Place/Hélène-Campbell Road
The intersection does not meet the target PLOS, BLOS, or TkLOS.

There is limited opportunity to improve the PLOS and BLOS at this intersection without reducing the number of lanes crossed and providing two-stage left turning cycling facilities on all approaches. The northbound right turn movement does not meet the target TkLOS. As the east leg of the intersection does not form part of the City's truck routes, the northbound right turn movement is considered acceptable.

Strandherd Drive/Systemhouse Street/Maravista Drive
The intersection does not meet the target PLOS, BLOS, TkLOS, or AutoLOS.

There is limited opportunity to improve the PLOS and BLOS at this intersection without reducing the number of lanes crossed and providing two-stage left turning cycling facilities on all approaches. The northbound right turn movement does not meet the target TkLOS. As the east leg of the intersection does not form part of the City's truck routes, the northbound right turn movement is considered acceptable.

Strandherd Drive/Dealership Drive/Kennevale Drive
The intersection does not meet the target PLOS or TkLOS. As protected corners have been implemented on all corners, the BLOS is met.

There is limited opportunity to improve the PLOS at this intersection without reducing the number of lanes crossed. The northbound right turn movement does not meet the target TkLOS. As the east leg of the intersection does not form part of the City's truck routes, the northbound right turn movement is considered acceptable.

4.5.2 2025 Total Intersection Operations

Intersection capacity analysis has been conducted for the 2025 total traffic conditions. The results of the analysis are summarized in **Table 14** for the weekday PM and Saturday peak hours. Detailed reports are included in **Appendix I**.

Table 14: 2025 Total Traffic Operations

Intersection	Mvmt	Storage/ Spacing(1)	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
Strandherd Dr/Citigate Dr/Fallowfield Rd	EBL	65m	**1.12 [F]**	~31	#56	**1.01 [F]**	~22	#43
	EBT/R	240m	0.29 [A]	17	26	0.47 [A]	10	22
	WBL	125m	**1.63 [F]**	~58	#102	0.85 [D]	16	#43
	WBT	360m	0.28 [A]	17	27	0.43 [A]	11	23
	WBR	100m	0.89 [D]	34	68	0.55 [A]	0	18
	NBL	70m	0.12 [A]	2	m3	0.10 [A]	2	m3
	NBT	200m	**1.05 [F]**	~173	**#259**	0.77 [C]	76	102
	NBR	90m	0.24 [A]	0	m4	0.17 [A]	1	m4
	SBL	120m	0.75 [C]	50	69	0.57 [A]	22	32
	SBT	440m	0.71 [C]	108	#251	0.59 [A]	68	136
	SBR	80m	0.20 [A]	4	22	0.17 [A]	0	8
	EBL	60m	0.79 [C]	47	**68**	0.81 [D]	52	**72**
	EBT	110m	0.30 [A]	23	36	0.31 [A]	25	36

Intersection	Mvmt	Storage/ Spacing[1]	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
Strandherd Dr/CrossKeys Pl/Hélène-Campbell Rd	EBR	60m	0.08 [A]	0	0	0.17 [A]	0	6
	WBL	30m	0.14 [A]	7	15	0.14 [A]	7	14
	WBT	160m	0.29 [A]	23	35	0.29 [A]	23	34
	WBR	70m	0.30 [A]	0	14	0.28 [A]	0	12
	NBL	150m	0.22 [A]	5	m7	0.38 [A]	10	m17
	NBT	400m	0.73 [C]	122	166	0.64 [B]	41	m125
	NBR	90m	0.03 [A]	0	m0	0.02 [A]	0	m0
	SBL	80m	0.54 [A]	31	m42	0.51 [A]	17	m28
	SBT	200m	0.65 [B]	47	m133	0.62 [B]	84	84
	SBR	70m	0.21 [A]	0	m29	0.29 [A]	0	12
Strandherd Dr/Sytemhouse St/Maravista Dr	EBL	80m	0.80 [C]	21	#39	**1.06 [F]**	~22	#44
	EBT/R	100m	0.66 [B]	37	61	0.66 [B]	26	51
	WBL	20m	0.19 [A]	4	12	0.22 [A]	4	12
	WBT/R	90m	0.34 [A]	19	28	0.38 [A]	21	29
	NBL	125m	0.71 [C]	59	#122	0.74 [C]	58	**#135**
	NBT/R	480m	0.68 [B]	108	#172	0.61 [B]	78	#137
	SBL	150m	0.72 [C]	30	m#50	0.69 [B]	27	m#48
	SBT	400m	**1.18 [F]**	~154	#226	**1.38 [F]**	~145	#206
	SBR	60m	0.11 [A]	1	m3	0.11 [A]	0	m4
Strandherd Dr/Dealership Dr/Kennevale Dr	EBL	70m	0.67 [B]	30	47	0.57 [A]	22	35
	EBT	175m	0.07 [A]	4	10	0.03 [A]	2	5
	EBR	70m	0.19 [A]	5	14	0.09 [A]	0	5
	WBL	60m	0.70 [B]	33	49	0.47 [A]	19	30
	WBT/R	130m	0.23 [A]	3	14	0.32 [A]	4	16
	NBL	70m	0.28 [A]	7	13	0.34 [A]	8	15
	NBT/R	1,000m	0.67 [B]	110	177	0.65 [B]	96	151
	SBL	50m	0.44 [A]	14	m16	0.41 [A]	12	m13
	SBT	480m	0.75 [C]	40	m54	0.60 [A]	14	m115
	SBR	110m	0.05 [A]	0	m0	0.03 [A]	0	m0
Systemhouse St/Citigate Dr	EB	150m	11 sec. [B]	-	-	11 sec. [B]	-	-
	WB	450m	9 sec. [A]	-	-	10 sec. [A]	-	-
	SB	330m	7 sec. [A]	-	-	7 sec. [A]	-	-
Systemhouse St/Costco Access/Commercial Site Access	EB	330m	1 sec [A]	-	0	1 sec [A]	-	0
	WBT/L	110m	6 sec [A]	-	3	6 sec [A]	-	4
	WBR	110m	0 sec [A]	-	0	0 sec [A]	-	0
	NB	-	13 sec [B]	-	9	14 sec [B]	-	9
	SB	160m	**207 sec [F]**	-	135	**340 sec [F]**	-	**199**
Strandherd Dr/Commercial Access	EBR	-	11 sec [B]	-	5	12 sec [B]	-	6
	NB	-	0 sec [A]	-	0	0 sec [A]	-	0
	SBT/R	-	0 sec [A]	-	0	0 sec [A]	-	0
Strandherd Dr/Dealership Access	EBR	-	10 sec [B]	-	1	11 sec [B]	-	1
	NB	-	0 sec [A]	-	0	0 sec [A]	-	0
	SBT/R	-	0 sec [A]	-	0	0 sec [A]	-	0
	EBT/L	-	0 sec [A]	-	0	0 sec [A]	-	0
	WBT	130m	0 sec [A]	-	0	0 sec [A]	-	0

Intersection	Mvmt	Storage/ Spacing(1)	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
Dealership Dr/Dealership Access	WBR	130m	0 sec [A]	-	0	0 sec [A]	-	0
	SB	-	12 sec [B]	-	1	10 sec [A]	-	1

~: volume for the 50th percentile cycle exceeds capacity
#: volume for the 95th percentile cycle exceeds capacity
m: volume for the 95th percentile queue is metered by an upstream signal

Compared to the 2025 background traffic conditions, site-generated traffic is anticipated to deteriorate the LOS for select movements at the Strandherd Drive/Citigate Drive/Fallowfield Road intersection. The northbound through and westbound left movements deteriorated to a LOS F from a LOS E in the PM peak hour. The eastbound left turn movement deteriorated to a LOS F from a LOS E in the Saturday peak hour.

Compared to the 2025 background traffic conditions, site-generated traffic is anticipated to deteriorate the LOS at select movements at the Strandherd Drive/Sytemhouse Street/Maravista Drive intersection. The southbound through movement deteriorated to a LOS F from a LOS D in the PM peak hour. The eastbound left turn movement deteriorated to a LOS F from a LOS A in the Saturday peak hour.

Compared to the 2025 background traffic conditions, site-generated traffic is anticipated to significantly increase delays on the southbound approach to the Systemhouse Street/Costco Access/Commercial Site Access during the PM and Saturday peak hours.

4.5.3 2030 Total Intersection Operations

Intersection capacity analysis has been conducted for the 2030 total traffic conditions. The results of the analysis are summarized in **Table 15** for the weekday PM and Saturday peak hours. Detailed reports are included in **Appendix I**.

Table 15: 2030 Total Traffic Operations

Intersection	Mvmt	Storage/ Spacing(1)	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
Strandherd Dr/Citigate Dr/Fallowfield Rd	EBL	65m	**1.65 [F]**	~64	**#93**	**1.01 [F]**	~22	#43
	EBT/R	240m	0.38 [A]	18	27	0.47 [A]	10	22
	WBL	125m	**1.67 [F]**	~44	#84	0.85 [D]	16	#43
	WBT	360m	0.29 [A]	14	22	0.43 [A]	11	23
	WBR	100m	0.89 [D]	34	68	0.55 [A]	0	18
	NBL	70m	0.12 [A]	2	m3	0.10 [A]	2	m3
	NBT	200m	**1.31 [F]**	**~247**	**m#331**	0.82 [D]	86	#188
	NBR	90m	0.28 [A]	0	m2	0.17 [A]	1	m2
	SBL	120m	0.75 [C]	50	69	0.57 [A]	22	32
	SBT	440m	0.84 [D]	151	#323	0.63 [B]	77	154
	SBR	80m	0.22 [A]	3	22	0.17 [A]	0	9
Strandherd Dr/CrossKeys	EBL	60m	0.81 [D]	52	**74**	0.81 [D]	52	**72**
	EBT	110m	0.38 [A]	32	46	0.31 [A]	25	36
	EBR	60m	0.07 [A]	0	0	0.17 [A]	0	6

Intersection	Mvmt	Storage/ Spacing[1]	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
Pl/Hélène-Campbell Rd	WBL	30m	0.14 [A]	7	14	0.14 [A]	7	14
	WBT	160m	0.28 [A]	23	35	0.29 [A]	23	34
	WBR	70m	0.28 [A]	0	13	0.28 [A]	0	12
	NBL	150m	0.22 [A]	5	m5	0.38 [A]	10	m16
	NBT	400m	0.94 [E]	159	m#229	0.69 [B]	42	m#140
	NBR	90m	0.03 [A]	0	m0	0.02 [A]	0	m0
	SBL	80m	0.57 [A]	31	m35	0.51 [A]	17	m26
	SBT	200m	0.80 [C]	55	**m#213**	0.67 [B]	95	#154
	SBR	70m	0.23 [A]	1	m25	0.29 [A]	0	16
Strandherd Dr/Sytemhouse St/Maravista Dr	EBL	80m	0.97 [E]	26	#50	**1.06 [F]**	~22	#44
	EBT/R	100m	0.76 [C]	52	79	0.66 [B]	26	51
	WBL	20m	0.19 [A]	4	12	0.22 [A]	4	12
	WBT/R	90m	0.35 [A]	20	29	0.38 [A]	21	29
	NBL	125m	0.71 [C]	60	m#121	0.74 [C]	54	**#135**
	NBT/R	480m	0.85 [D]	151	#238	0.66 [B]	88	#155
	SBL	150m	0.72 [C]	30	m34	0.69 [B]	27	m#43
	SBT	400m	**1.41 [F]**	~215	#286	**1.49 [F]**	~167	#228
	SBR	60m	0.12 [A]	1	m2	0.11 [A]	0	m4
Strandherd Dr/Dealership Dr/Kennevale Dr	EBL	70m	0.80 [C]	44	66	0.57 [A]	22	35
	EBT	175m	0.12 [A]	8	17	0.03 [A]	2	5
	EBR	70m	0.32 [A]	16	28	0.09 [A]	0	5
	WBL	60m	0.59 [A]	31	49	0.47 [A]	19	30
	WBT/R	130m	0.21 [A]	4	15	0.32 [A]	4	16
	NBL	70m	0.31 [A]	8	15	0.34 [A]	8	15
	NBT/R	1,000m	0.81 [D]	156	#243	0.70 [B]	107	168
	SBL	50m	0.44 [A]	14	m14	0.41 [A]	12	m12
	SBT	480m	0.96 [E]	74	m62	0.64 [B]	15	m118
	SBR	110m	0.06 [A]	0	m0	0.03 [A]	0	m0
Systemhouse St/Citigate Dr	EB	150m	11 sec. [B]	-	1	11 sec. [B]	-	1
	WB	450m	9 sec. [A]	-	4	10 sec. [A]	-	4
	SB	330m	7 sec. [A]	-	2	7 sec. [A]	-	2
Systemhouse St/Costco Access/Commercial Site Access	EB	330m	1 sec [A]	-	0	1 sec [A]	-	0
	WBT/L	110m	6 sec [A]	-	4	6 sec [A]	-	4
	WBR	110m	0 sec [A]	-	0	0 sec [A]	-	0
	NB	-	15 sec [B]	-	10	14 sec [B]	-	9
	SB	160m	**318 sec [F]**	-	**165**	**340 sec [F]**	-	**199**
Strandherd Dr/Commercial Access	EBR	-	13 sec [B]	-	8	13 sec [B]	-	7
	NB	-	0 sec [A]	-	0	0 sec [A]	-	0
	SBT/R	-	0 sec [A]	-	0	0 sec [A]	-	0
Strandherd Dr/Dealership Access	EBR	-	12 sec [B]	-	1	12 sec [B]	-	1
	NB	-	0 sec [A]	-	0	0 sec [A]	-	0
	SBT/R	-	0 sec [A]	-	0	0 sec [A]	-	0
Dealership Dr/Dealership Access	EBT/L	-	0 sec [A]	-	0	0 sec [A]	-	0
	WBT	130m	0 sec [A]	-	0	0 sec [A]	-	0
	WBR	130m	0 sec [A]	-	0	0 sec [A]	-	0

Intersection	Mvmt	Storage/ Spacing[(1)]	PM Peak			SAT Peak		
			v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)	v/c or delay [LOS]	50th % Queue (m)	95th % Queue (m)
	SB	-	12 sec [B]	-	1	10 sec [A]	-	1

~: volume for the 50th percentile cycle exceeds capacity
#: volume for the 95th percentile cycle exceeds capacity
m: volume for the 95th percentile queue is metered by an upstream signal

Compared to the 2030 background traffic conditions, site-generated traffic is anticipated to increase critical v/c ratios at the Strandherd Drive/Citigate Drive/Fallowfield Road and Strandherd Drive/Systemhouse Street/Maravista Drive intersections during peak hours. It is noteworthy that the eastbound left turn movement at both intersections deteriorates to a LOS F during the Saturday peak hour.

Compared to the 2030 background traffic conditions, site-generated traffic is anticipated to significantly increase delays on the southbound approach to the Systemhouse Street/Costco Access/Commercial Site Access intersection during the PM and Saturday peak hours.

The approximate required reduction in volumes to meet the target Auto LOS for each over-capacity movement is included below.

PM Peak Hour

- Strandherd Drive/Citigate Drive/Fallowfield Road
  - Eastbound left (v/c: 1.65): reduction of 130 vehicles required;
  - Westbound left (v/c: 1.67): reduction of 70 vehicles required;
  - Northbound through (v/c: 1.31): reduction of 350 vehicles required.
- Strandherd Drive/Sytemhouse Street/Maravista Drive
  - Southbound through (v/c: 1.41): reduction of 415 vehicles required.

Saturday Peak Hour

- Strandherd Drive/Citigate Drive/Fallowfield Road
  - Eastbound left (v/c: 1.01): reduction of 5 vehicles required.
- Strandherd Drive/Sytemhouse Street/Maravista Drive
  - Eastbound left (v/c: 1.06): reduction of 10 vehicles required;
  - Southbound through (v/c: 1.49): reduction of 395 vehicles required.

4.5.4 Alternative Signalized Access to Strandherd Drive

As the eastbound left turn movement at the Strandherd Drive/Systemhouse Street/Maravista Drive intersection deteriorates to a LOS F and the Costco Access to Systemhouse Street deteriorates to an unacceptable LOS under total traffic conditions, alternative solutions were investigated to reduce traffic volumes entering and exiting the subject site at the Sytemhouse Access. A new all movement access to the development from Strandherd Drive has been considered.

By allowing a full movement access to Strandherd Drive additional traffic would be able to travel to and from the development directly from Strandherd Drive without routing through Systemhouse Street. The following figure shows revised site traffic for the alternative solution.

Figure 15:Revised Site Traffic

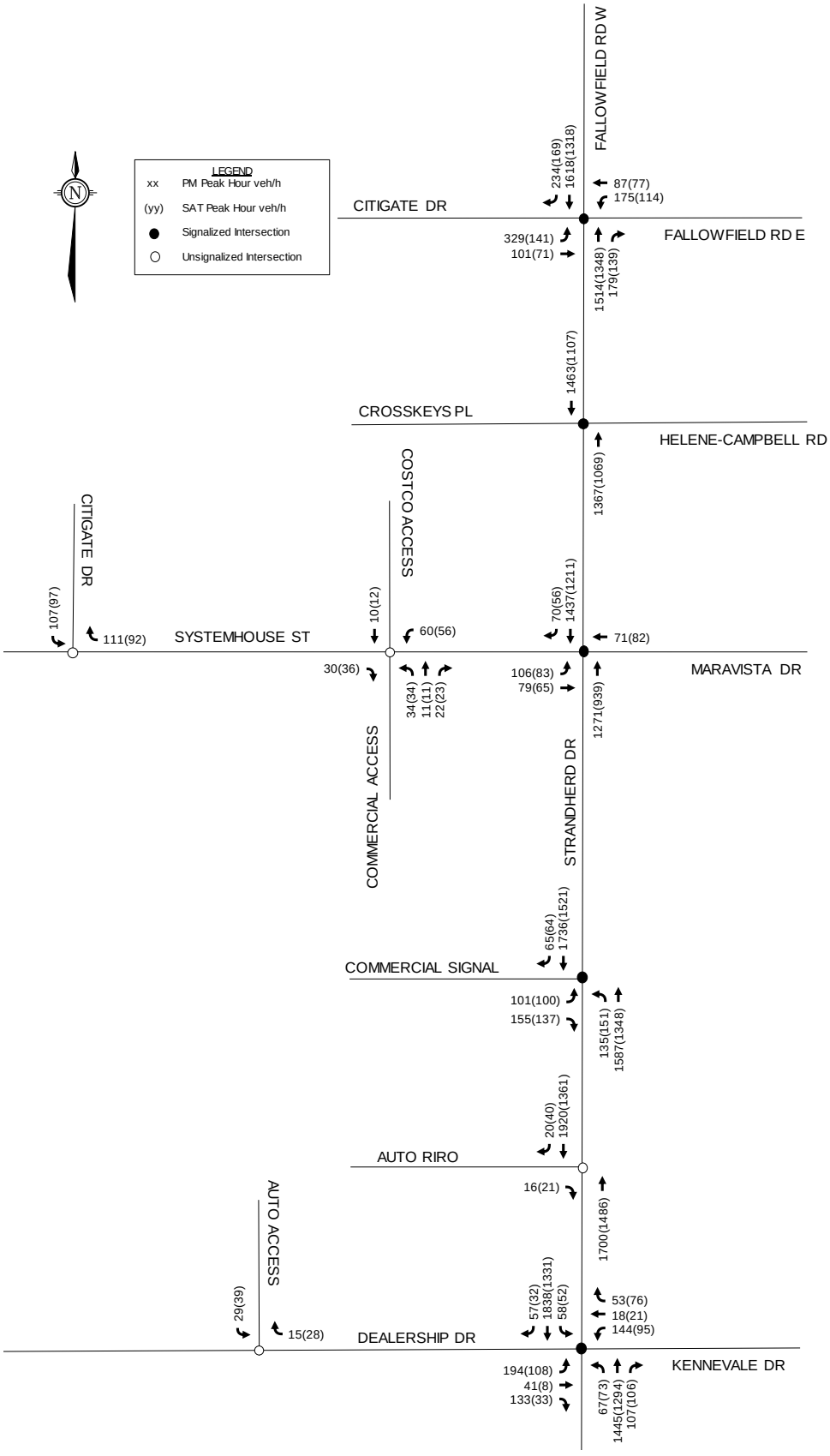
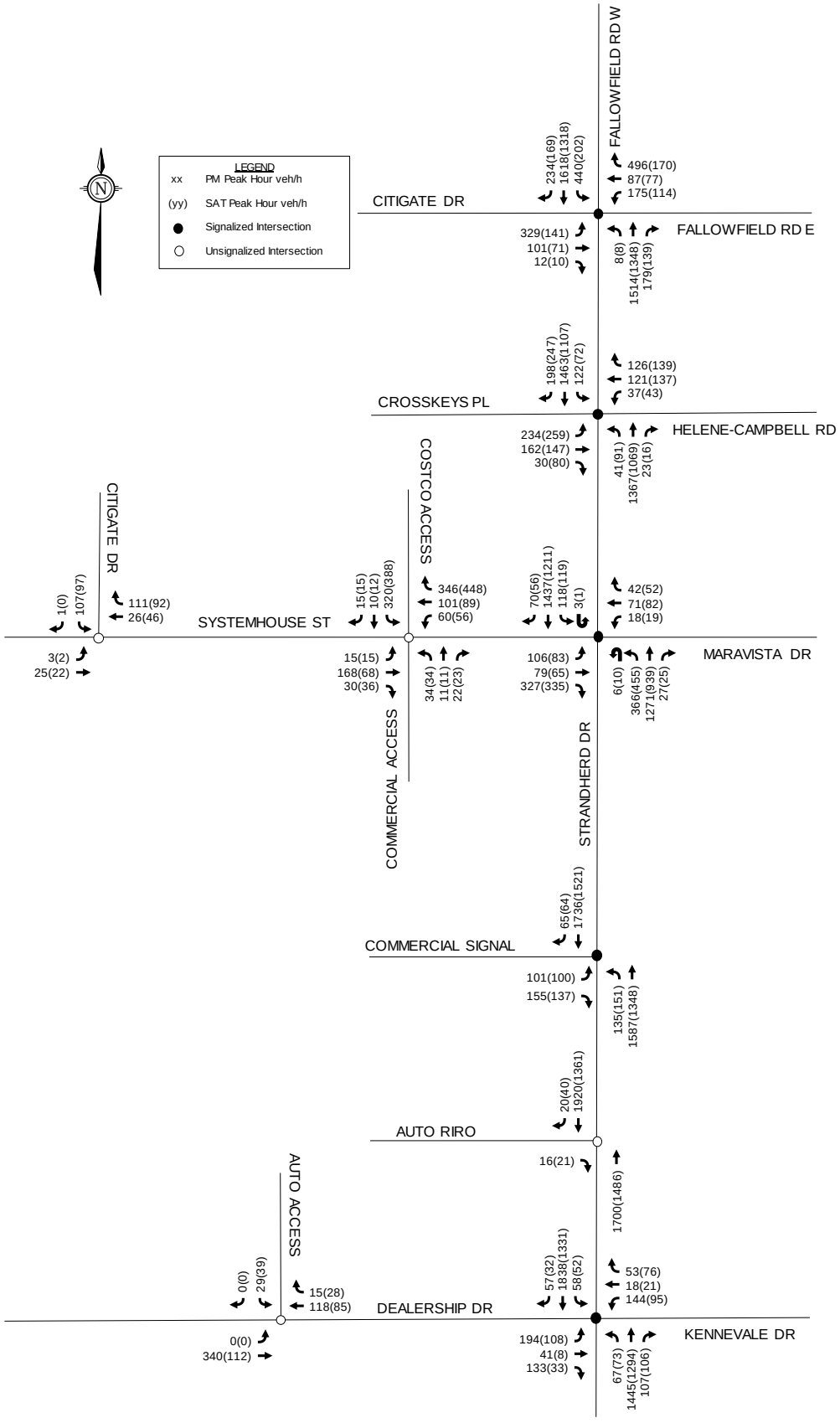


Figure 16:Revised 2030 Total Traffic



As Strandherd Drive is a divided-four lane roadway with high traffic volumes, a full-movement stop control access is not recommended due to operational and safety concerns. A signalized intersection along Strandherd Drive between Maravista Drive/Systemhouse Street and Kennevale Drive/Dealership Drive has therefore been considered.

There is roughly 480m of clear space between the Strandherd Drive/Sytemhouse Street/Maravista Drive and Strandherd Drive/Dealership Drive/Kennevale Drive intersections. From the Transportation Association of Canada's Geometric Design Guide the typical minimum spacing of intersections along an arterial roadway is 200m to allow for back-to-back storage for left turning vehicles at adjacent intersections. A signalized access placed midway in between Strandherd Drive/Sytemhouse Street/Maravista Drive and Strandherd Drive/Dealership Drive/Kennevale Drive would have approximately 220m of clear space between successive intersections. Due to the wide median along Strandherd Drive, there is space available to develop back-to-back left turn lanes between the new intersection and the Strandherd Drive/Dealership Drive/Kennevale Drive intersection.

Table 16: Traffic Operations with 2030 Revised Total Traffic Volumes

Intersection	Mvmt	Storage/ Spacing(1)	PM Peak			SAT Peak		
			v/c [LOS]	50th % Queue (m)	95th % Queue (m)	v/c [LOS]	50th % Queue (m)	95th % Queue (m)
Strandherd Dr/Sytemhouse St/Maravista Dr	EBL	80m	0.51 [A]	13	22	0.48 [A]	9	17
	EBT/R	100m	0.76 [C]	52	79	0.69 [B]	26	51
	WBL	20m	0.19 [A]	4	12	0.22 [A]	4	12
	WBT/R	90m	0.35 [A]	20	29	0.38 [A]	21	29
	NBL	125m	0.70 [B]	47	#86	0.68 [B]	46	#101
	NBT/R	220m	0.92 [E]	105	#178	0.69 [B]	82	#161
	SBL	150m	0.72 [C]	30	m34	0.69 [B]	27	m#43
	SBT	400m	**1.19 [F]**	~152	#286	**1.17 [F]**	~89	#228
	SBR	60m	0.10 [A]	0	m2	0.09 [A]	0	m4
Strandherd Dr/Dealership Dr/Kennevale Dr	EBL	70m	0.80 [C]	44	66	0.57 [A]	22	35
	EBT	175m	0.12 [A]	8	17	0.03 [A]	2	5
	EBR	70m	0.32 [A]	16	28	0.09 [A]	0	5
	WBL	60m	0.59 [A]	31	49	0.47 [A]	19	30
	WBT/R	130m	0.21 [A]	4	15	0.32 [A]	4	16
	NBL	70m	0.31 [A]	8	15	0.34 [A]	8	15
	NBT/R	1,000m	0.81 [D]	156	#243	0.70 [B]	107	168
	SBL	50m	0.44 [A]	15	m17	0.41 [A]	12	m15
	SBT	220m	0.96 [E]	29	**m#287**	0.64 [B]	14	17
	SBR	110m	0.06 [A]	0	m0	0.03 [A]	0	m0
Systemhouse St/Costco Access/Commercial Site Access	EB	330m	1 sec [A]	-	0	1 sec [A]	-	0
	WBT/L	110m	3 sec [A]	-	1	3sec [A]	-	1
	WBR	110m	0 sec [A]	-	0	0 sec [A]	-	0
	NB	-	13 sec [B]	-	3	12 sec [B]	-	3
	SB	160m	30 sec [D]	-	45	33 sec [D]	-	47
Strandherd Dr/Commercial Access	EBL	-	0.47 [A]	23	35	0.44 [A]	21	31
	EBR	-	0.30 [A]	28	35	0.26 [A]	21	32
	NBL	60m	0.53 [A]	31	m43	0.64 [B]	**32**	**m#66**
	NBT	220m	0.62 [B]	46	109	0.54 [A]	38	105
	SBT/R	220m	0.94 [E]	28	**m#226**	0.84 [D]	180	m165

~: volume for the 50th percentile cycle exceeds capacity
#: volume for the 95th percentile cycle exceeds capacity
m: volume for the 95th percentile queue is metered by an upstream signal

Compared to the 2030 Total Traffic scenario, the Revised Total Traffic Scenario shows some improvements for critical movements at the Strandherd Drive/Sytemhouse Street/Maravista Drive intersection. The eastbound left turn movement reverts back to a LOS A from a LOS E/F during the PM and Saturday peak hours. Critical through movements on Strandherd Drive are still anticipated to operate with a LOS F. Due to the new signalized intersection being located mid-block between the Strandherd Drive/Sytemhouse Street/Maravista Drive and Strandherd Drive/Dealership Drive/Kennevale Drive intersections, the maximum southbound through queue at the Strandherd Drive/Dealership Drive/Kennevale Drive intersection may periodically extend through the new signalized intersection during the PM peak hour.

Compared to the 2030 Total Traffic scenario, the Revised Total Traffic Scenario reduces delays at the Costco Access on Systemhouse Street to a LOS D during peak hours, which is considered acceptable.

Restricting access to the site along Strandherd Drive to right-in right-out operations is anticipated to result in congestion and safety issues along Systemhouse Street. A new signalized intersection on Strandherd Drive will improve operations along Systemhouse Street to an acceptable LOS. A new signalized intersection along Strandherd Drive is recommended for the proposed commercial development. Further details of the new signalized intersection can be reviewed as part of a future Site Plan Control application when the site layout and uses are known.

The approximate required reduction in volumes to meet the target Auto LOS for each over-capacity movement is included below.

<u>PM Peak Hour</u>

- Strandherd Drive/Sytemhouse Street/Maravista Drive
    - Southbound through (v/c: 1.19): reduction of 225 vehicles required.
- Strandherd Drive/Dealership Drive/Kennevale Drive
    - Southbound through (v/c = 0.96): reduction of 240 vehicles required to eliminate queuing through intersections.

<u>Saturday Peak Hour</u>

- Strandherd Drive/Sytemhouse Street/Maravista Drive
    - Southbound through (v/c: 1.17): reduction of 165 vehicles required.

As discussed above, congestion concerns along Strandherd Drive are attributable to background traffic volumes. For the purposes of this report, background traffic projections conservatively include a 1% growth rate along Strandherd Drive, as well as several other area developments. Based on the analysis above, a reduction of approximately 350 vehicles northbound and 240 vehicles southbound are required during the PM peak hour and 165 vehicles southbound are required during the Saturday peak hour.

As Strandherd Drive approaches capacity, traffic can be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate time to travel for drivers to make use of off-peak capacity, and alternate routes of travel. This can be achieved through City and Province investment into the below roadway and transit infrastructure projects within the Barrhaven/South Nepean area:

- Greenbank Road Realignment at Jock River crossing
- Southwest Transitway Extension and Future LRT

- Highway 416 Interchange at Barnsdale Road

As shown in Section 3.3.3, a reduction of 350 northbound vehicles and 240 southbound vehicles represents a displacement of approximately 45% of the northbound left turning vehicles and 20% of the eastbound right turning vehicles at the Strandherd Drive/Borrisokane Road intersection.

It is realistic to assume that with the implementation of new or improved transportation infrastructure to the Barrhaven/Nepean South area, the necessary reductions in background traffic along Strandherd Drive, necessary to reach LOS targets, can be achieved.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the foregoing, the conclusions and recommendations of this TIA can be summarized as follows:

Forecasting

- The proposed development is anticipated to generate 1,160 trips (726 vehicle trips) in the PM peak and 1,205 trips (772 vehicle trips) during the Saturday peak hour.

Access Design

- The development is expected to meet all PABL requirements, further review will be provided as part of the Site Plan Application process.

- The development is expected to be able to meet all TAC Geometric Design Guide standards, further review will be provided as part of the Site Plan Application process.

Existing and Background Intersection Operations

- Under existing and background traffic conditions, critical eastbound left, westbound left and northbound through movements at the Strandherd Drive/Citigate Drive/Fallowfield Road intersection are anticipated to operate with a LOS E-F during the PM peak hour.

- Under existing and background traffic conditions, the critical southbound through movement at the Strandherd Drive/Systemhouse Street/Maravista Drive intersection are anticipated to operate with a LOS E-F during the PM and Saturday peak hours.

Parking

- The development is anticipated to require roughly 345 parking spaces.

- Based on the preliminary concept plan, the proposed parking for the commercial retail portion of the site is approximately 22 spaces short of the current ZBL requirement. The parking provisions will be further reviewed as the concept plan is refined for the future Site Plan application.

Boundary Streets MMLOS

- Neither side of Strandherd Drive meets the target PLOS C due to high traffic volumes and vehicle speeds.

- Systemhouse Street does not meet the target BLOS E. Based on the City's MMLOS Guidelines, on Systemhouse Street a BLOS E can be achieved by either reducing the

posted speed to 40km/h or painting 1.2m wide bike lanes. This is identified for the City's consideration.

- Strandherd Drive and Systemhouse Street meet the target truck level of service (TkLOS).

Intersection MMLOS

- All study area intersections do not meet the target PLOS. There is limited opportunity to improve the PLOS without reducing the number of lanes crossed at each intersection.

- Two-stage left turning cycling facilities for the side street cycling facilities is required to meet the target BLOS for the Strandherd Drive/Citigate Drive/Fallowfield Road, Strandherd Drive/CrossKeys Place/Hélène-Campbell Road, and Strandherd Drive/Systemhouse Street/Maravista Drive intersections. This is identified for the City's consideration.

- All study area intersections do not meet the target TkLOS. As the side streets do not form part of the City's Truck Route network, no mitigation measures are identified.

2025 Total Traffic Operations

- Compared to the 2025 background traffic conditions, site-generated traffic is anticipated to deteriorate the LOS at select movements at the Strandherd Drive/Citigate Drive/Fallowfield Road intersection. The northbound through movement deteriorated to a LOS F from a LOS E in the PM peak hour. The eastbound left turn movement deteriorated to a LOS F from a LOS E in the Saturday peak hour

- Compared to the 2025 background traffic conditions, site-generated traffic is anticipated to deteriorate the LOS at select movements at the Strandherd Drive/Sytemhouse Street/Maravista Drive intersection. The southbound through movement deteriorated to a LOS F from a LOS D in the PM peak hour. The eastbound left turn movement deteriorated to a LOS F from a LOS A in the Saturday peak hour

- Compared to the 2025 background traffic conditions, site-generated traffic is anticipated to significantly increase delays on the southbound approach to the Systemhouse Street/Costco Access/Commercial Site Access during the PM and Saturday peak hours.

2030 Total Traffic Operations

- Compared to the 2030 background traffic conditions, site-generated traffic is anticipated to increase critical v/c ratios at the Strandherd Drive/Citigate Drive/Fallowfield Road and Strandherd Drive/Systemhouse Street/Maravista Drive intersections during peak hours. It is noteworthy that the eastbound left turn movement at both intersections deteriorate to a LOS F during the Saturday peak hour.

- Compared to the 2030 background traffic conditions, site-generated traffic is anticipated to significantly increase delays on the southbound approach to the Systemhouse Street/Costco Access/Commercial Site Access intersection during the PM and Saturday peak hours.

Alternative Signalized Access to Strandherd Drive

- Compared to the 2030 Total Traffic scenario, the Revised Total Traffic Scenario shows some improvements for critical movements at the Strandherd Drive/Sytemhouse Street/Maravista Drive intersection. The eastbound left turn movement reverts back to a LOS A from a LOS E/F during the PM and Saturday peak hours. However, critical through

movements on Strandherd Drive are still anticipated to operate with a LOS F. The maximum southbound through queue at the Strandherd Drive/Dealership Drive/Kennevale Drive intersection may periodically extend through the new signalized intersection during the PM peak hour.

- Compared to the 2030 Total Traffic scenario, the Revised Total Traffic Scenario reduces delays at the Costco Access on Systemhouse Street to a LOS D during peak hours, which is considered acceptable.

- Restricting access to the site along Strandherd Drive to right-in right-out operations is anticipated to result in congestion and safety issues along Systemhouse Street. A new signalized intersection will improve operations along Systemhouse Street to an acceptable LOS. As such, a new signalized intersection along Strandherd Drive is recommended for the proposed commercial development. Further details of the new signalized intersection can be reviewed as part of a future Site Plan Control application when the site layout and uses are known.

Demand Rationalization

- Traffic throughout the study area could be displaced or alleviated through a combination of increased use of non-auto modes of transportation, alternate time to travel for drivers using the study area roadways to make use of off-peak capacity, and alternate routes for travel.

- City and Province investment into the following roadway and transit infrastructure projects within the Barrhaven/South Nepean is required to support the ongoing development in the area and to relieve the anticipated traffic pressures along the Strandherd Drive corridor.

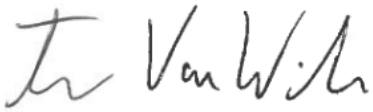
    - Greenbank Road Realignment at the Jock River Crossing
    - Southwest Transitway Extension and Future LRT
    - Highway 416 Interchange at Barnsdale Road

- It is realistic to assume that with the implementation of new or improved transportation infrastructure to the Barrhaven/Nepean South area, the necessary reductions in background traffic along Strandherd Drive, necessary to reach LOS targets, can be achieved.

Based on the foregoing, the proposed development is recommended from a transportation perspective.

NOVATECH

Prepared by:



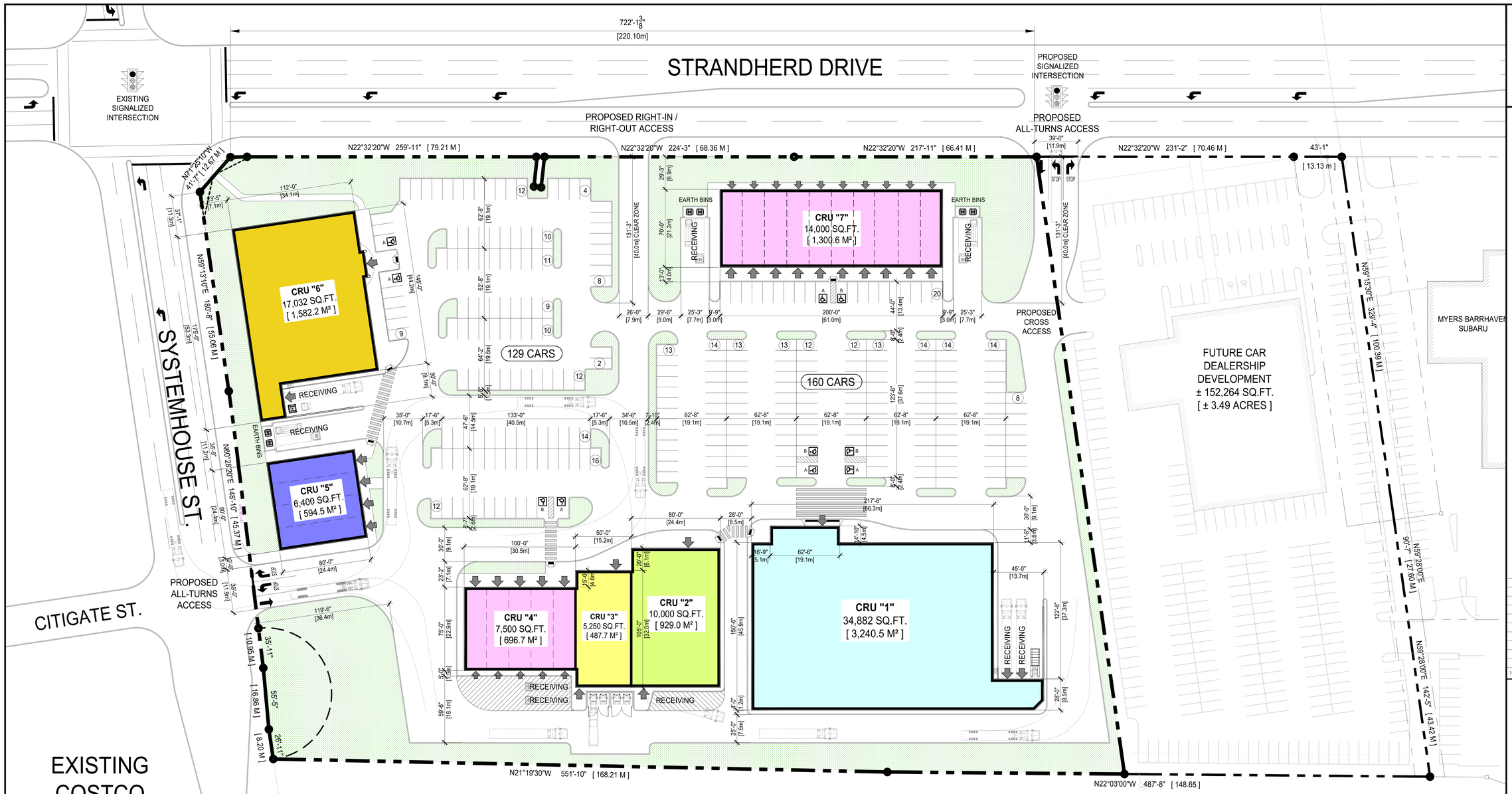
Trevor Van Wiechen, M.Eng.
E.I.T. | Transportation

Reviewed by:

Brad Byvelds, P.Eng.
Senior Project Manager | Transportation

APPENDIX A

Concept Plan



SITE STATISTICS			
TOTAL LAND AREA =	± 9.51 ACRES		
AREA SUMMARY		IMPERIAL	METRIC
RETAIL BLOCK "1" AREA		414,422 Sq.Ft.	38,499 M²
BUILDING AREAS	RETAIL	95,064 Sq.Ft.	8,831 M²
	RECREATIONAL	N.A. Sq.Ft.	N.A. M²
	INDUSTRIAL	N.A. Sq.Ft.	N.A. M²
	INSTITUTIONAL	N.A. Sq.Ft.	N.A. M²
TOTAL BUILDING AREA		95,064 Sq.Ft.	8,831 M²
LANDSCAPED AREA & PERCENTAGE		TBD Sq.Ft. TBD	TBD M² TBD
BUILDING COVERAGE ON PROPERTY		22.9%	22.9%
PARKING PROVIDED		289	289
PARKING RATIO		3.04 / 1,000 SQ.FT.	

NOT FOR CONSTRUCTION

broad reach design studio
1883 McNicoll Avenue, Suite 219
Scarborough, Ontario M1V 5M3
416-335-4285 416-856-0441
broadreachdesignstudio@gmail.com

NO.	REVISIONS	DATE	CK.

NORTH

SEAL

plaza REIT

TENANT NAME

LOCATION
STRANDHERD DRIVE & SYSTEMHOUSE ST. BARRHAVEN, ONTARIO

STORE NUMBER

DRAWING TITLE
SITE PLAN CONCEPT

DATE: 03 NOV 2024
SCALE: AS NOTED
REV.NO.
DRAWN BY: JFA
CHECKED BY:

DRAWING NO.
SP-6

APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	4175 Strandherd
Description of Location	Southwest of Strandherd/Systemhouse
Land Use Classification	grocery store, retail & 2 dealerships
Development Size (units)	
Development Size square metre (m^2)	35,000sf grocery; 40,000sf retail; 50,000sf dealership
Number of Accesses and Locations	3 to Strandherd & 1 to Systemhouse
Phase of Development	1 dealership and retail - 2026
Buildout Year	2028

If available, please attach a sketch of the development or site plan to this form.

2. Trip Generation Trigger

Considering the Development's Land Use type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Table notes:

1. Table 2, Table 3 & Table 4 TRANS Trip Generation Manual
2. Institute of Transportation Engineers (ITE) Trip Generation Manual 11.1 Ed.

Land Use Type	Minimum Development Size
Single-family homes	**60 units**
Multi-Use Family (Low-Rise)[1]	**90 units**
Multi-Use Family (High-Rise)[1]	**150 units**
Office[2]	**1,400 m^2**
Industrial[2]	**7,000 m^2**
Fast-food restaurant or coffee shop[2]	**110 m^2**
Destination retail[2]	**1,800 m^2**
Gas station or convenience market[2]	**90 m^2**

If the proposed development size is equal to or greater than the sizes identified above, the Trip Generation Trigger is satisfied.

3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	☐	☑
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?[2]	☐	☑

If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 kilometers per hour (km/h) or greater?	☐	☑
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	☐	☑
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 metre [m] of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	☑	☐
Is the proposed driveway within auxiliary lanes of an intersection?	☑	☐
Does the proposed driveway make use of an existing median break that serves an existing site?	☐	☑

[2] Hubs are identified in Schedules B1 to B8 of the City of Ottawa Official Plan. PMTSAs are identified in Schedule C1 of the Official Plan. DPAs are identified in Schedule C7A and C7B of the Official. See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.

	Yes	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	☐	☑
Does the development include a drive-thru facility?	☑	☐

If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.

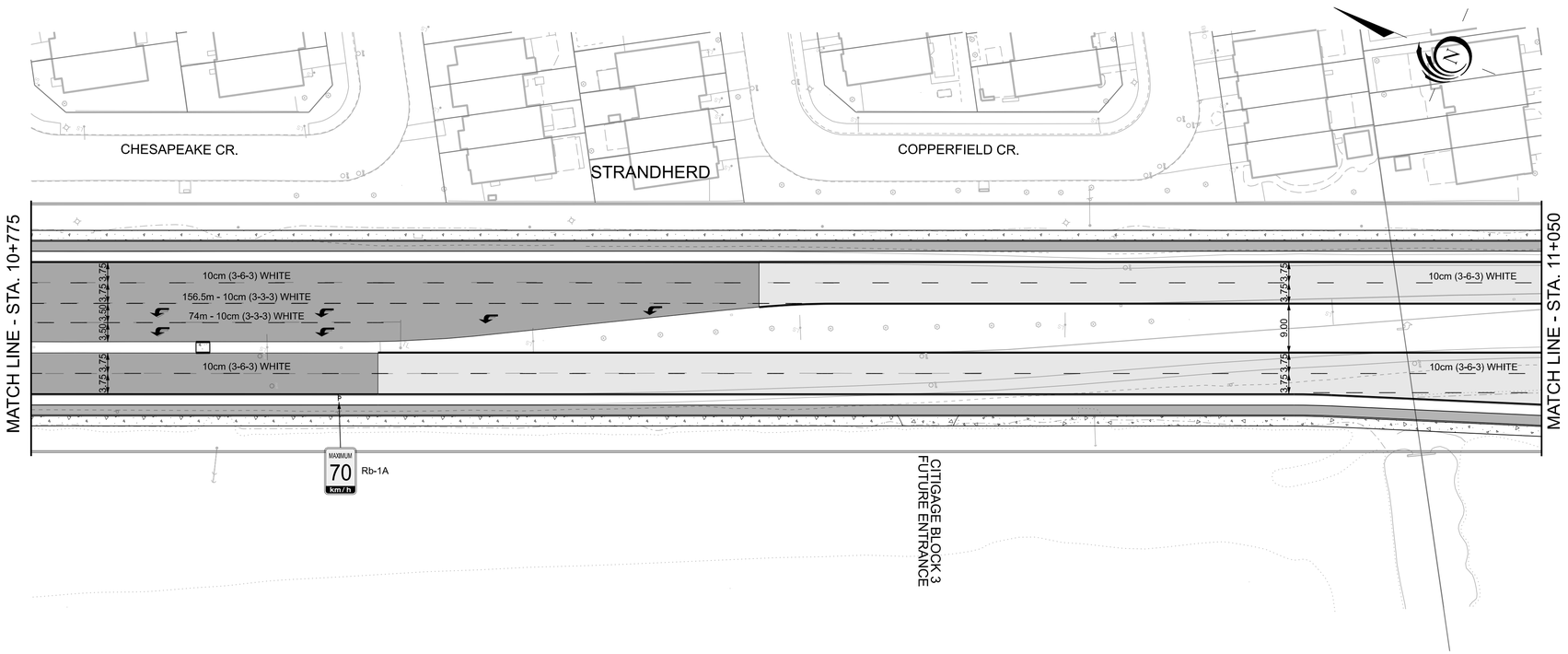
5. Summary

Results of Screening	Yes	No
Does the development satisfy the Trip Generation Trigger?	☑	☐
Does the development satisfy the Location Trigger?	☐	☑
Does the development satisfy the Safety Trigger?	☑	☐

If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).

APPENDIX C

Strandherd Drive Pavement Makings and Signage Drawings



STRANDHERD DRIVE WIDENING
MARAVISTA DRIVE TO JOCKVALE ROAD

STRANDHERD DRIVE
PAVEMENT MARKINGS & SIGNAGE 1
LIMIT OF CONTRACT TO STA. 11+050

C. Duclos, P.Eng. *Director*	J. Vallee, P.Eng. *Project Manager*

PARSONS

Contract No. CP000217 | Dwg. No. 1

Sheet 1 of _

Asset No. --------

Asset Group ---

Des. MDM	Chk'd. DSG
Dwn. MDM	Chk'd. DSG

Utility Circ. No. ____ | Index No. 17676

Const. Inspector .....

Scale: HORIZONTAL 0m 5 10 20

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned, The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	SCM NT-VP008761 - FINAL PAVEMENT MARKING & SIGNAGE	DSG	16/08/23

TRAFFIC MANAGEMENT PAVEMENT MARKING REVIEW

☐ Reviewed/Submit for Changes

☒ Reviewed and Accepted

By: Adrianna Lawlor 16-Aug-2023

TITLE FRAME: 790mm x 534mm City of Ottawa 2008

Plot Date: $DATE$ $TIME$

Last Saved: 8/16/2023 9:21:00 AM

Consultant's Information: C:\ISO\477226\110\10\DWGS\01-Change Order\ISD17-5124-21-PVMK-SIGN-01.Dgn

STRANDHERD DRIVE WIDENING
MARAVISTA DRIVE TO JOCKVALE ROAD

STRANDHERD DRIVE
PAVEMENT MARKINGS & SIGNAGE 2
STA. 11+050 TO STA. 11+625

C. Duclos, P.Eng.	J. Vallee, P.Eng.
Director	*Project Manager*

PARSONS

Ottawa

Contract No.	Dwg. No.
CP000217	2

Sheet 2 of

Asset No.

Asset Group

Des.	Chk'd.
MDM	DSG
Dwn.	Chk'd.
MDM	DSG
Utility Circ. No.	Index No.
	17676

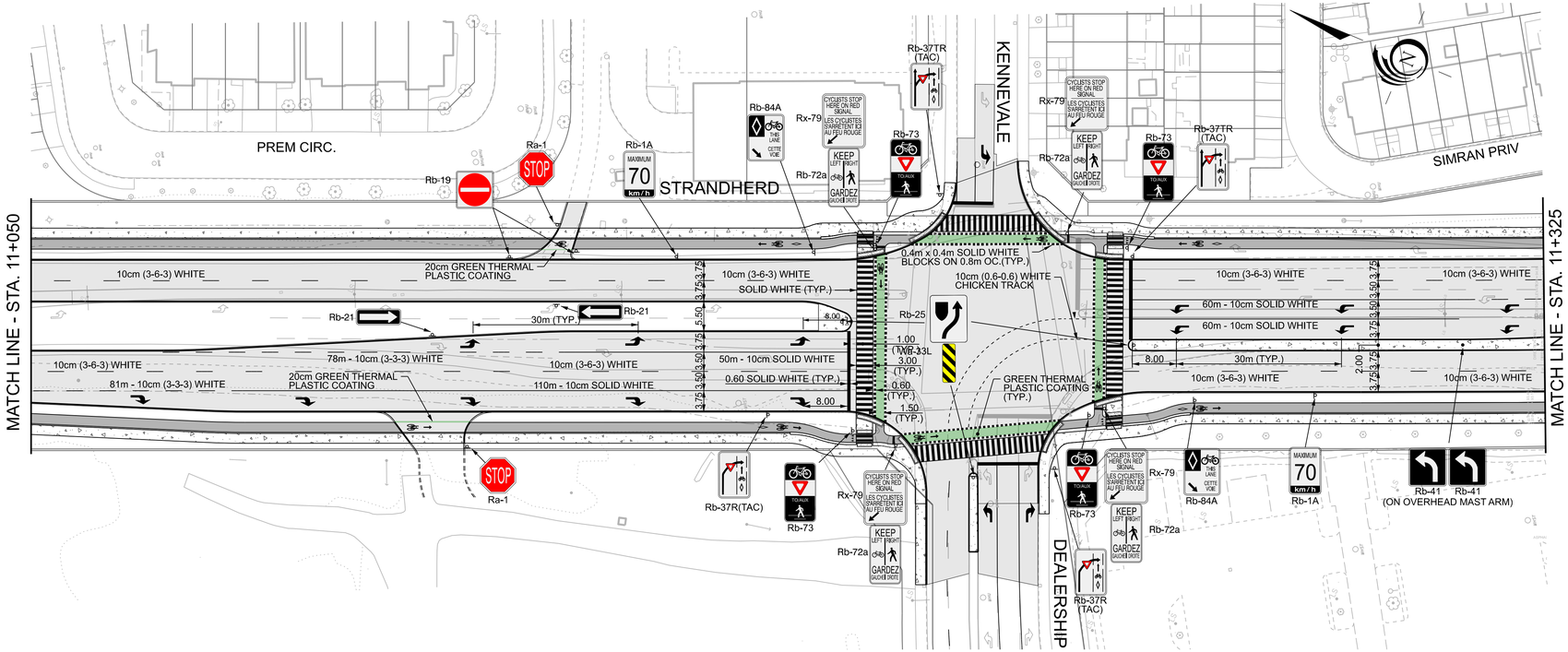
Const. Inspector

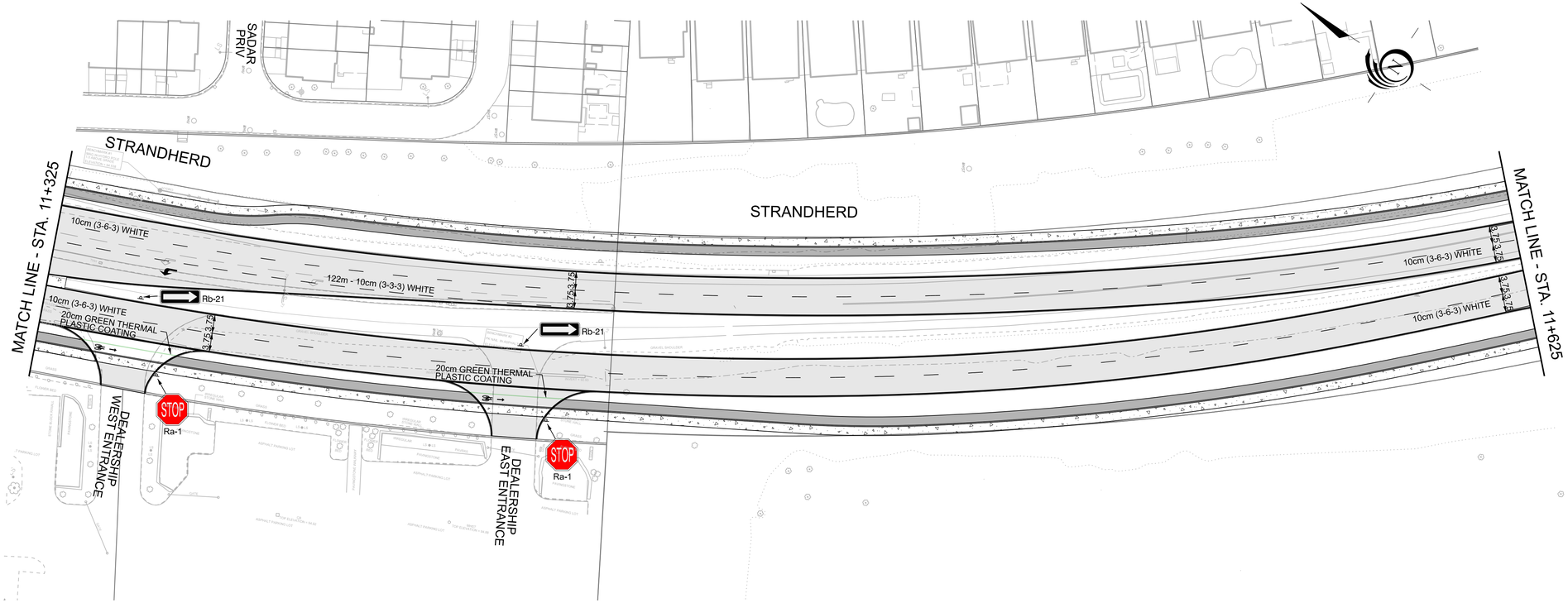
Scale: HORIZONTAL
0m 5 10 20

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned, The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

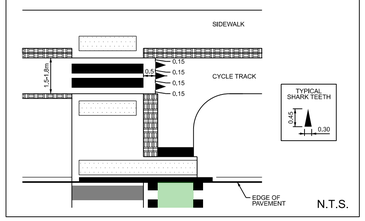
REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	SCM NT-VP07819 - PAVEMENT MARKING & SIGNAGE MODIFICATIONS	DSG	17/10/22
2	SCM NT-VP008761 - FINAL PAVEMENT MARKING & SIGNAGE	DSG	16/08/23





TYPICAL SHARK TEETH MARKINGS
CYCLE TRACK



Ottawa

TRAFFIC MANAGEMENT PAVEMENT MARKING REVIEW

☐ Reviewed/Submit for Changes

☒ Reviewed and Accepted

By: Adrianna Lawlor 16-Aug-2023

APPENDIX D

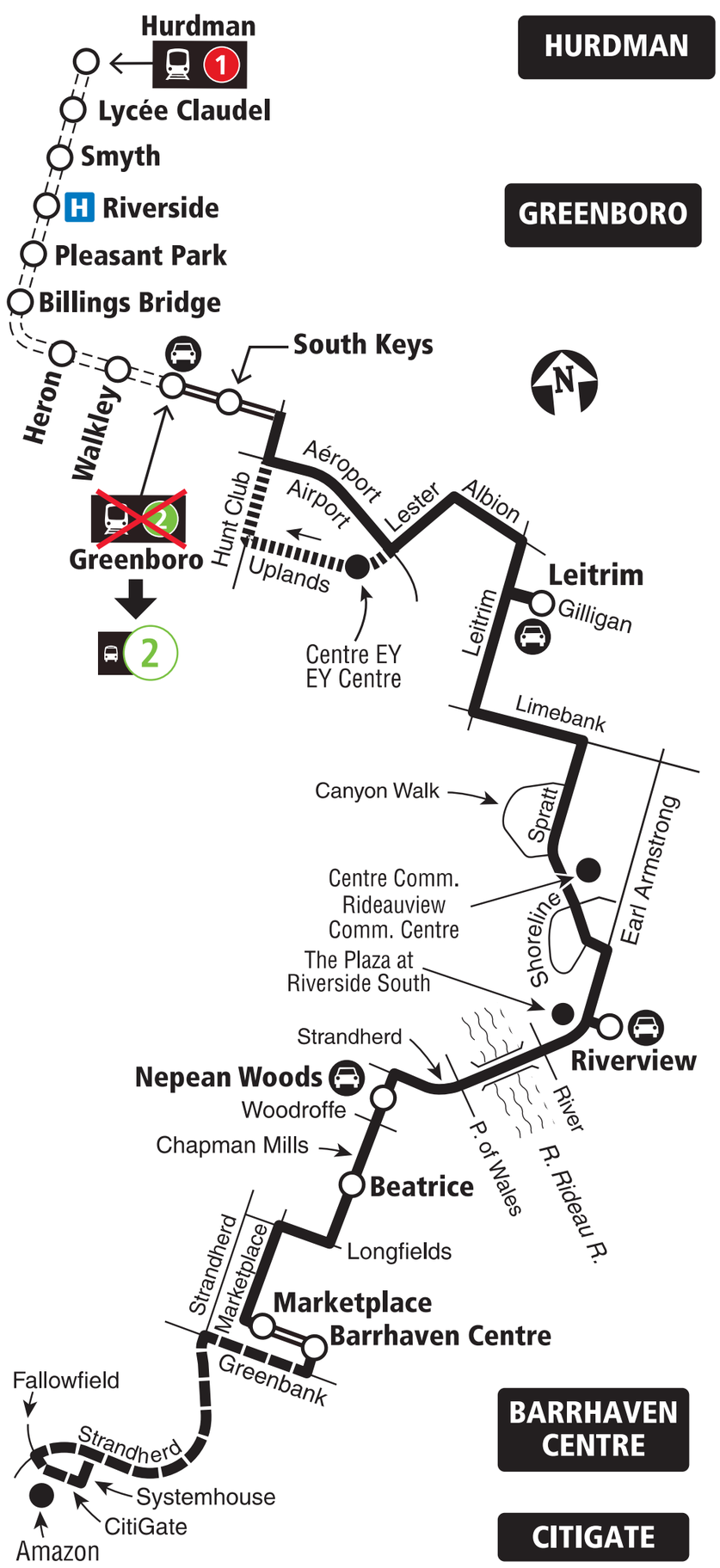
OC Transpo Routes

99 Rapide

CITIGATE
BARRHAVEN CENTRE

HURDMAN
GREENBORO

7 days a week / 7 jours par semaine



2021.09

Transitway & Station

Transitway & Station
Peak period / Période de pointe

Saturday & Sunday only (99 Greenboro/Hurdman)
Sam. et dim. seulement (99 Greenboro/Hurdman)

Limited service / Service limité

Park & Ride / Parc relais

2023.09

Schedule / Horaire 613-560-1000
Text / Texto* 560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres
*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

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

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

Security / Sécurité **613-741-2478**

Effective September 23, 2023
En vigueur 23 septembre 2023

OC Transpo

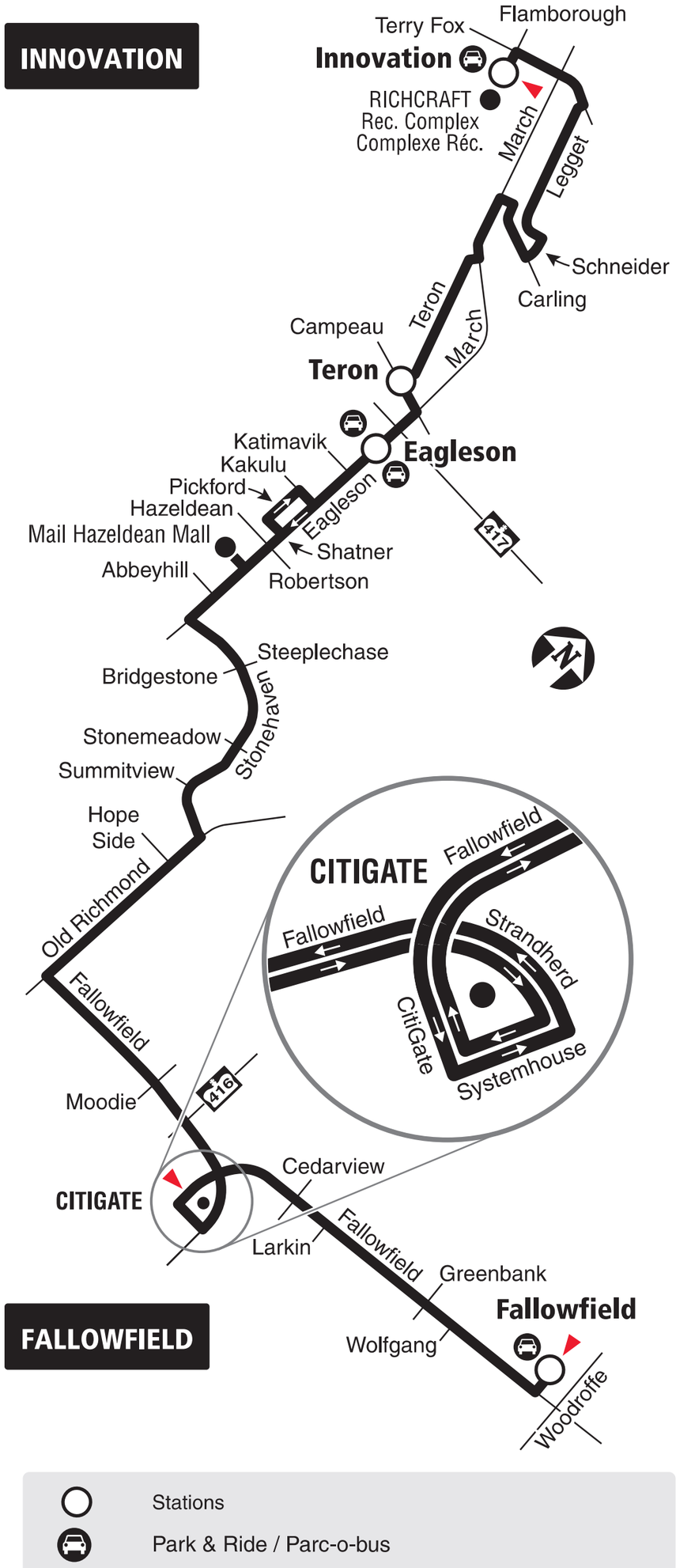
INFO 613-560-5000
octranspo.com

110 FALLOWFIELD / INNOVATION

Local

7 days a week / 7 jours par semaine

No late evening service Mon. to Fri. Some trips on weekends / Aucun service en fin de soirée du lun. au ven. Quelques trajets les fins de semaine.



Stations

Park & Ride / Parc-o-bus

Timepoint / Heures de passage

2023.07

Schedule / Horaire 613-560-1000

Text / Texto* 560560

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

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

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

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

Security / Sécurité **613-741-2478**

Effective June 20, 2021
En vigueur 20 juin 2021

Transpo

INFO 613-560-5000
octranspo.com

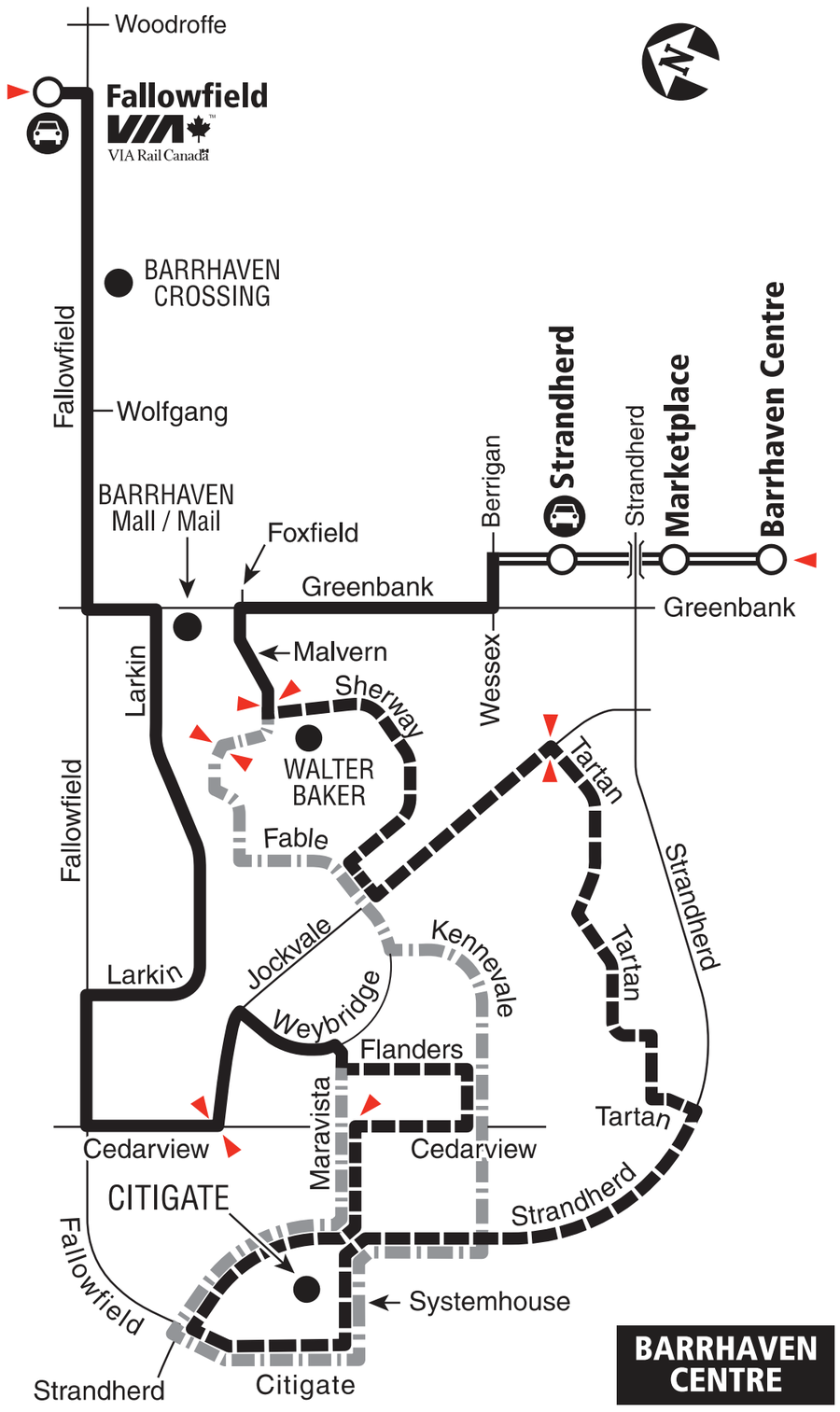
170

FALLOWFIELD
BARRHAVEN CENTRE

Local

7 days a week / 7 jours par semaine
All day service
Service toute la journée

FALLOWFIELD



BARRHAVEN CENTRE

Transitway & Station

Evenings and weekends only /
Soirs et fins de semaine seulement

No service evenings and weekends /
Pas de service le soir et les fins de semaine

Park & Ride / Parc-o-bus

Timepoint / Heures de passage

2021.06

Schedule / Horaire 613-560-1000
Text / Texto* 560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres
*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

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

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

Security / Sécurité **613-741-2478**

Effective June 20, 2021
En vigueur 20 juin 2021

OC Transpo

INFO 613-741-4390
octranspo.com

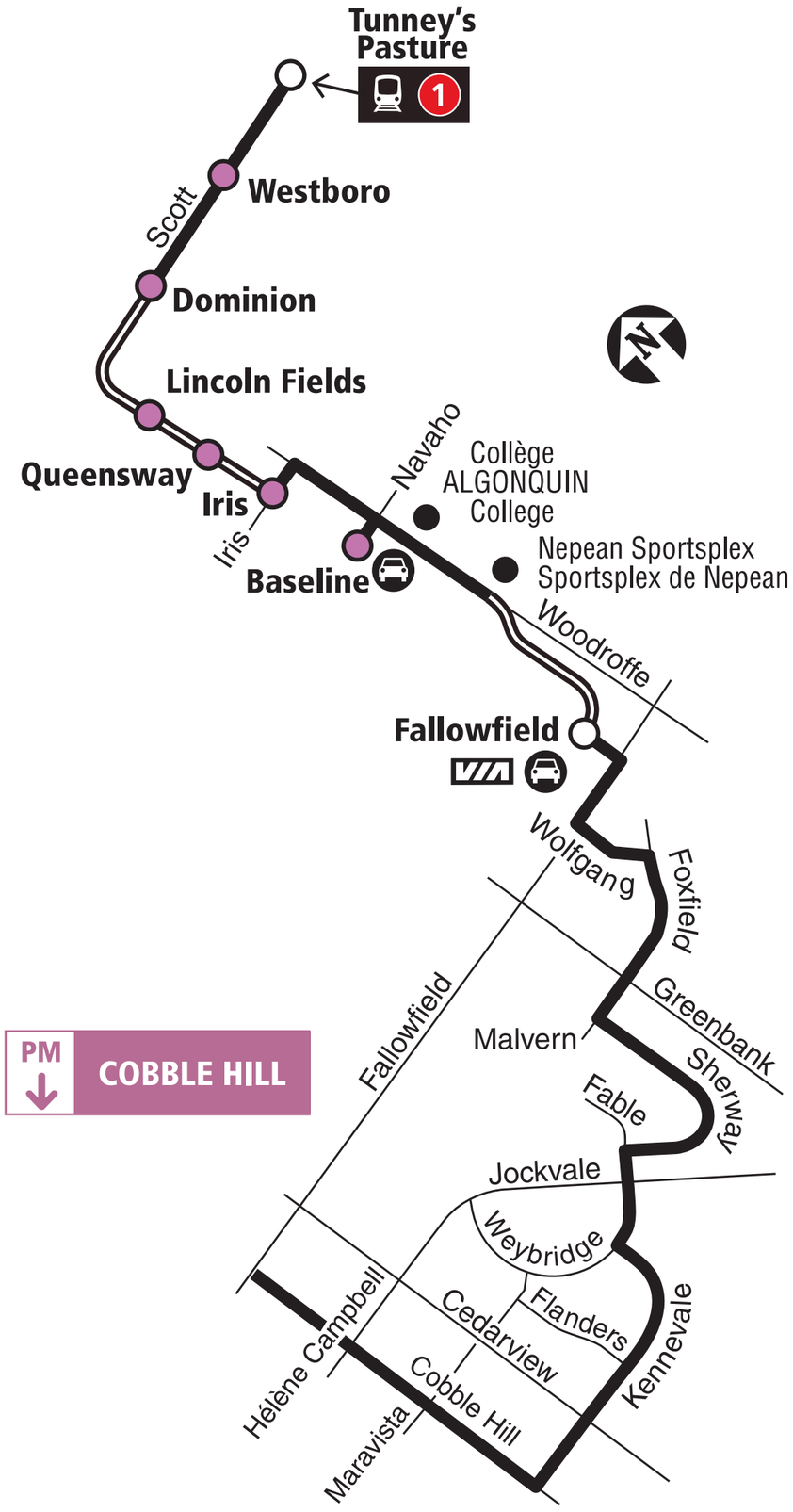
272 Connexion

COBBLE HILL
TUNNEY'S PASTURE

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement

AM ↑ TUNNEY'S PASTURE



PM ↓ COBBLE HILL

06.2022

Transitway & Station

Limited stops: Off only in AM / No stop in PM
Arrêts limités : débarquement en AM seul. / aucun arrêt en PM

Park & Ride / Parc-o-bus

Schedule / Horaire 613-560-1000
Text / Texto*.....560560
plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

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

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

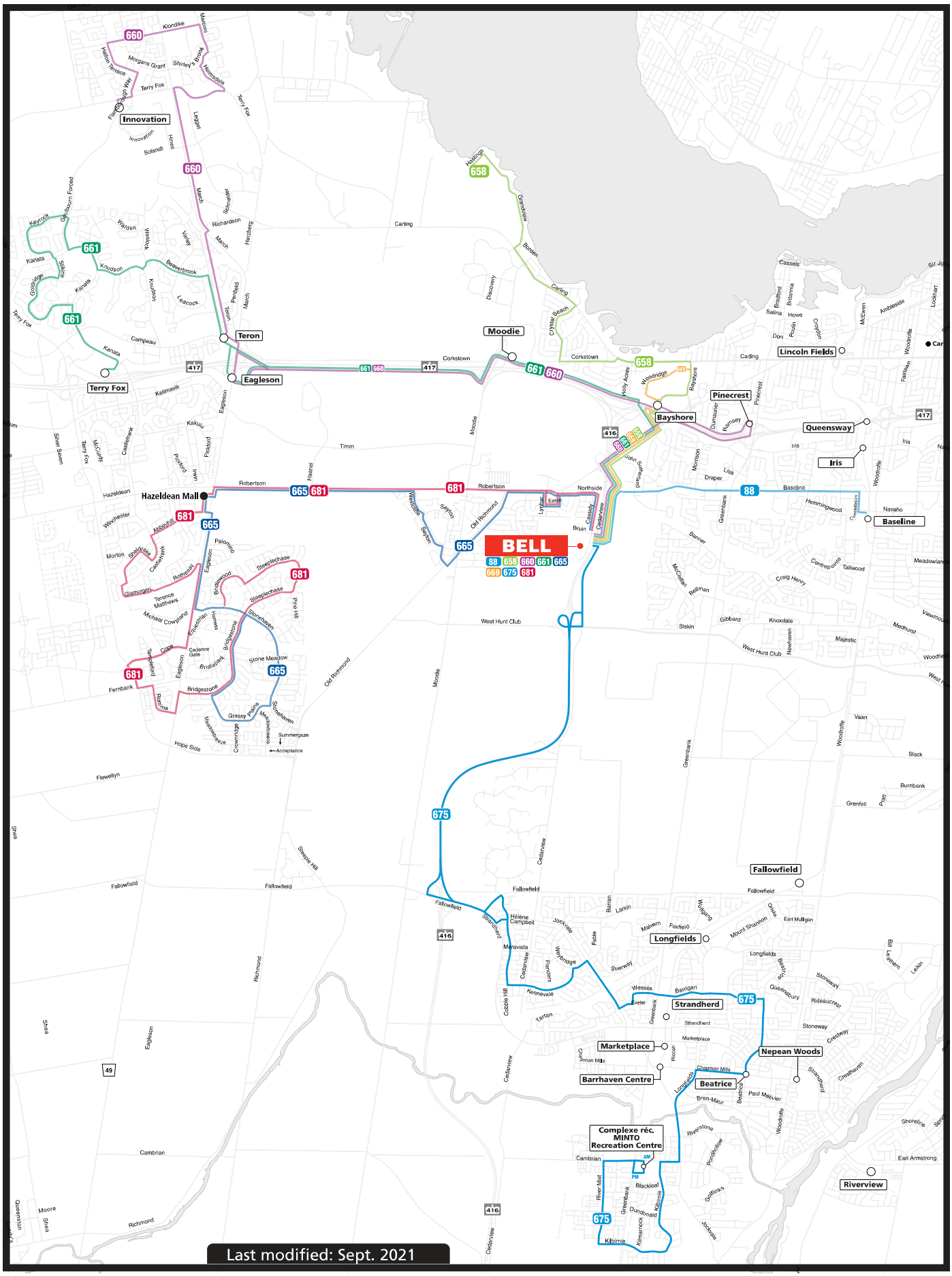
Lost and Found / Objets perdus.....**613-563-4011**

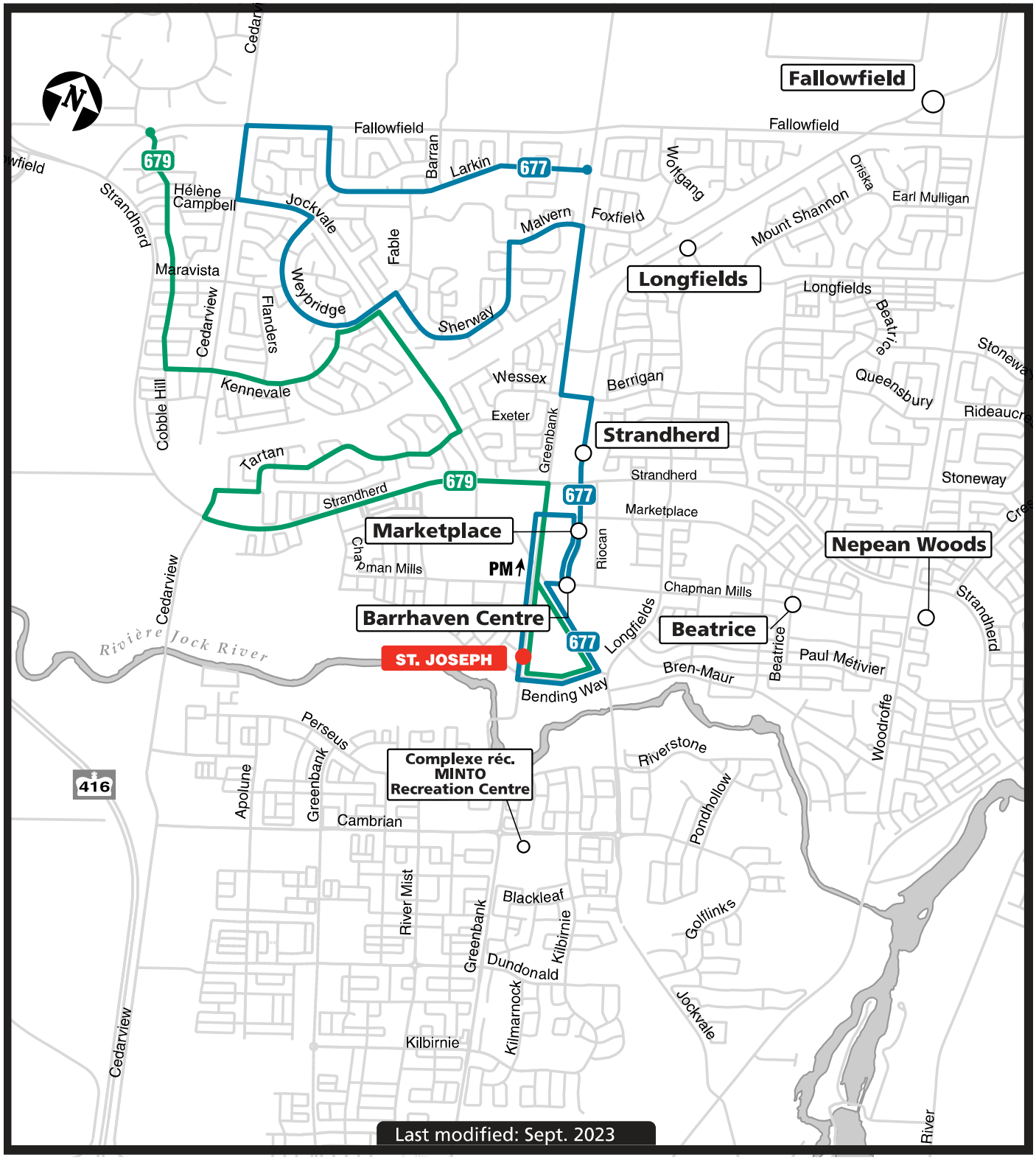
Security / Sécurité **613-741-2478**

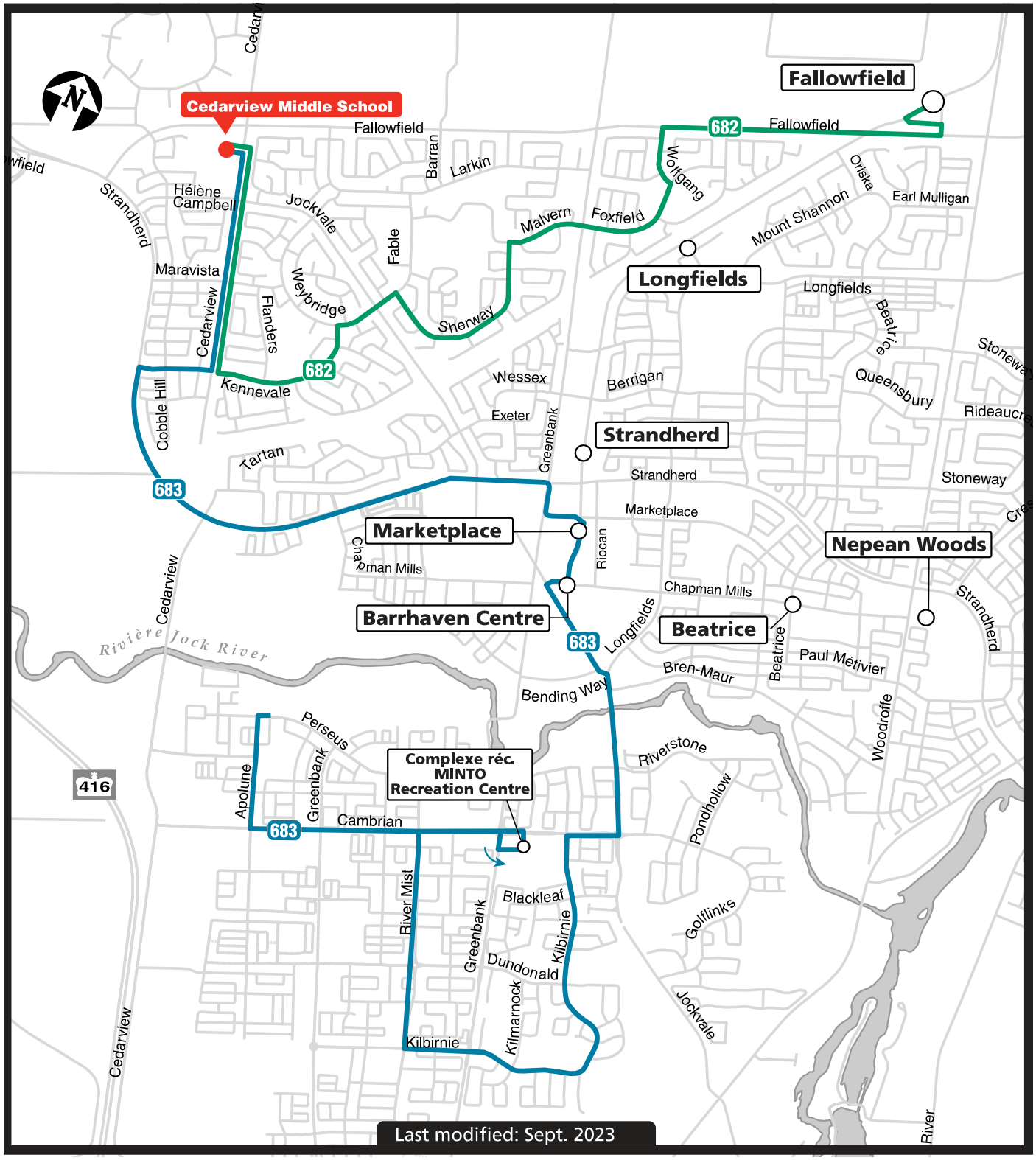
Effective June 26, 2022
En vigueur 26 juin 2022

Transpo

INFO 613-560-5000
octranspo.com


Innovation
Teron
Terry Fox
Eagleson
Moodie
Bayshore
Pinecrest
Queensway
Iris
Baseline
Lincoln Fields
Hazeldean Mall
BELL
88 658 660 661 665
669 675 681
Carling
Corkstown
Timm
West Hunt Club
Fallowfield
Longfields
Strandherd
Marketplace
Barrhaven Centre
Beatrice
Nepean Woods
Complexe réc. MINTO Recreation Centre
Riverview
Cambrian
Richmond
Last modified: Sept. 2021


Fallowfield
Fallowfield
Fallowfield
679
677
Barran
Larkin
Wolfgang
Oriska
Earl Mulligan
Mount Shannon
Hélène Campbell
Strandherd
Jockvale
Malvern
Foxfield
Fable
Longfields
Longfields
Maravista
Weybridge
Flanders
Cedarview
Sherway
Beatrice
Wessex
Berrigan
Queensbury
Kennevale
Cobble Hill
Exeter
Greenbank
Strandherd
Tartan
Strandherd
679
677
Strandherd
Stoneway
Marketplace
Marketplace
Riocan
Nepean Woods
Chapman Mills
PM
Chapman Mills
Barrhaven Centre
Beatrice
Longfields
Strandherd
Rivière Jock River
ST. JOSEPH
677
Paul Métivier
Bren-Maur
Beatrice
Bending Way
Perseus
Riverstone
Woodroffe
Complexe réc. MINTO Recreation Centre
416
Apolune
Greenbank
Cambrian
Pondhollow
River Mist
Blackleaf
Golflinks
Greenbank
Kilbirnie
Dundonald
Jockvale
Kilmarnock
Kilbirnie
Cedarview
Cedarview
River
Last modified: Sept. 2023


Cedarview Middle School
Fallowfield
682
Fallowfield
Fallowfield
Barran
Larkin
Wolfgang
Oriska
Earl Mulligan
Mount Shannon
Malvern
Foxfield
Longfields
Longfields
Beatrice
Queensbury
Rideaucrest
Stoneway
Hélène Campbell
Strandherd
Jockvale
Fable
Maravista
Cedarview
Flanders
Weybridge
Sherway
682
Kennevale
Cobble Hill
Wessex
Berrigan
Exeter
Greenbank
Strandherd
Tartan
683
Strandherd
Stoneway
Marketplace
Marketplace
Riocan
Chapman Mills
Nepean Woods
Strandherd
Chapman Mills
Barrhaven Centre
683
Longfields
Beatrice
Beatrice
Paul Métivier
Bren-Maur
Rivière Jock River
Cedarview
Bending Way
Perseus
Riverstone
Woodroffe
Complexe réc. MINTO Recreation Centre
416
Apolune
Greenbank
683
Cambrian
Pondhollow
River Mist
Blackleaf
Golflinks
Greenbank
Kilbirnie
Dundonald
Jockvale
Kilmarnock
Kilbirnie
Cedarview
River
Last modified: Sept. 2023

APPENDIX E

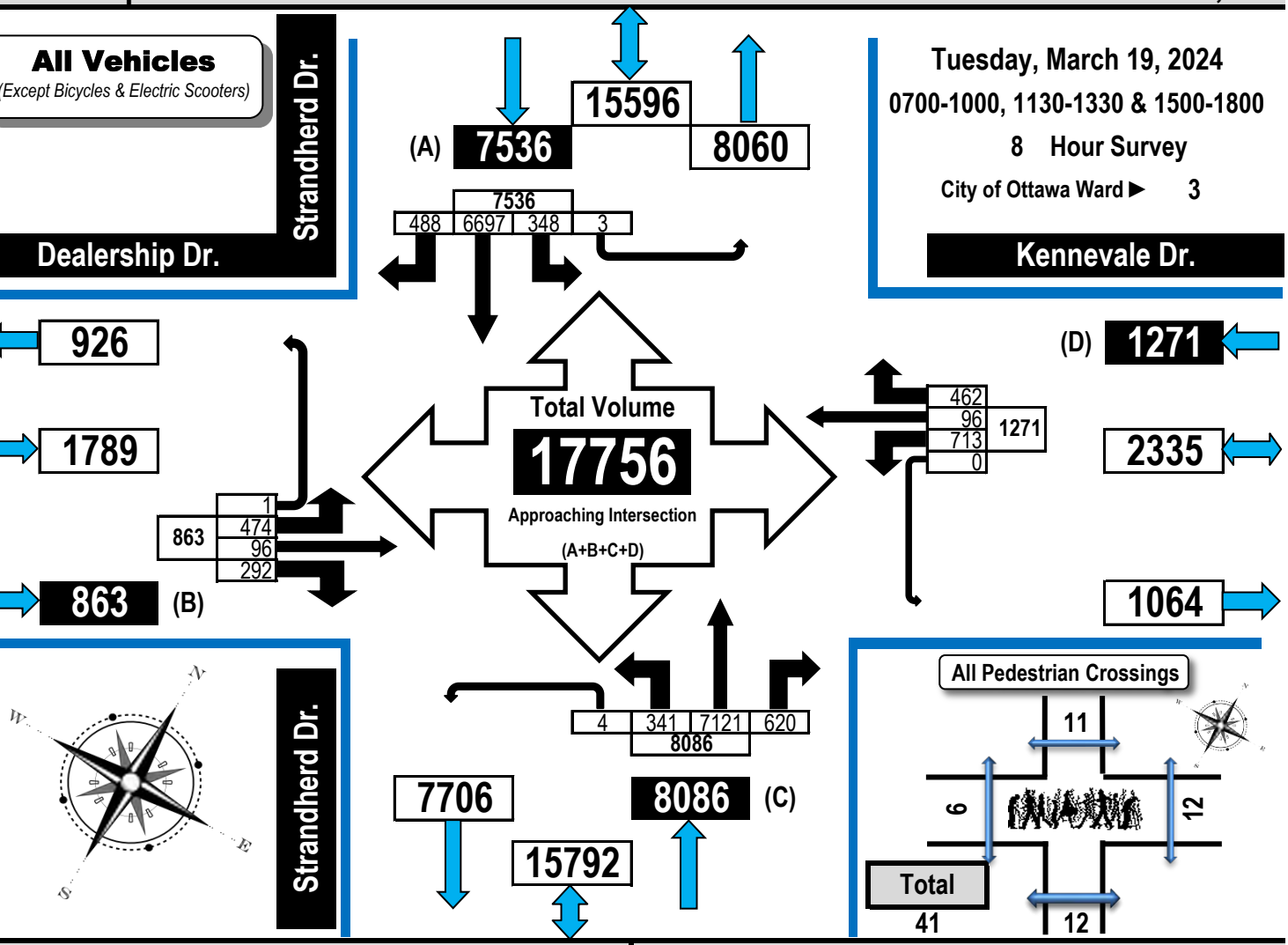
Traffic Count Data

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

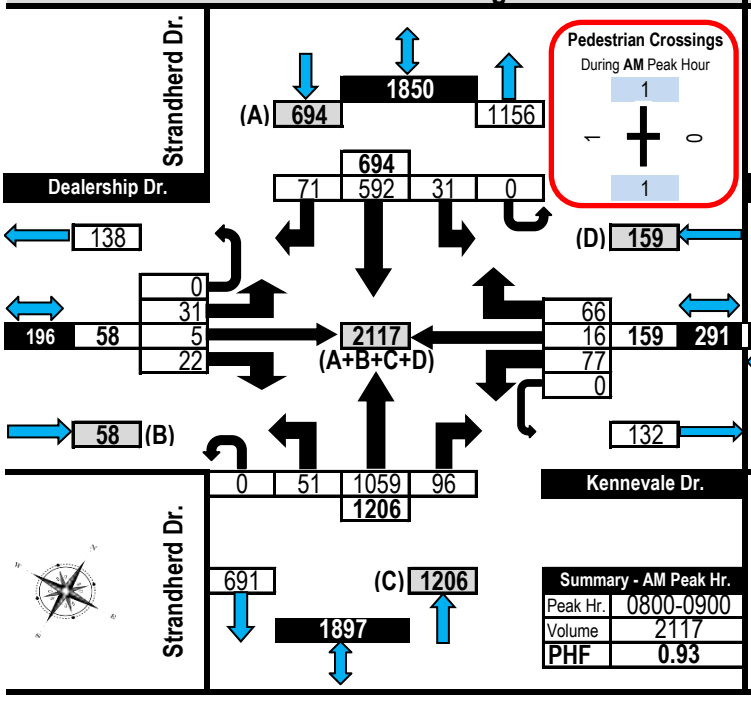
Dealership Drive/Kennevale Drive & Strandherd Drive — Barrhaven West, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, March 19, 2024
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ▶ 3

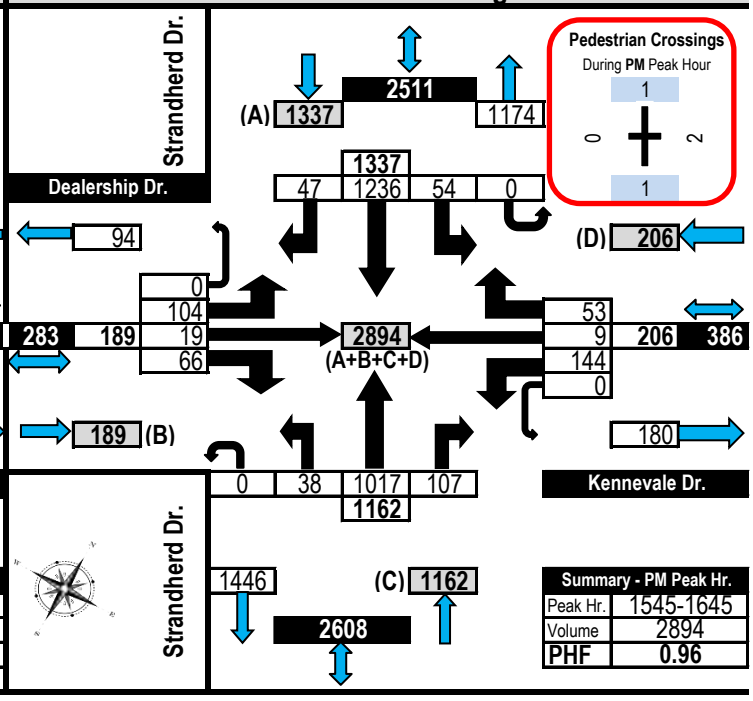


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	2117
PHF	0.93

PM Peak Hour Flow Diagram



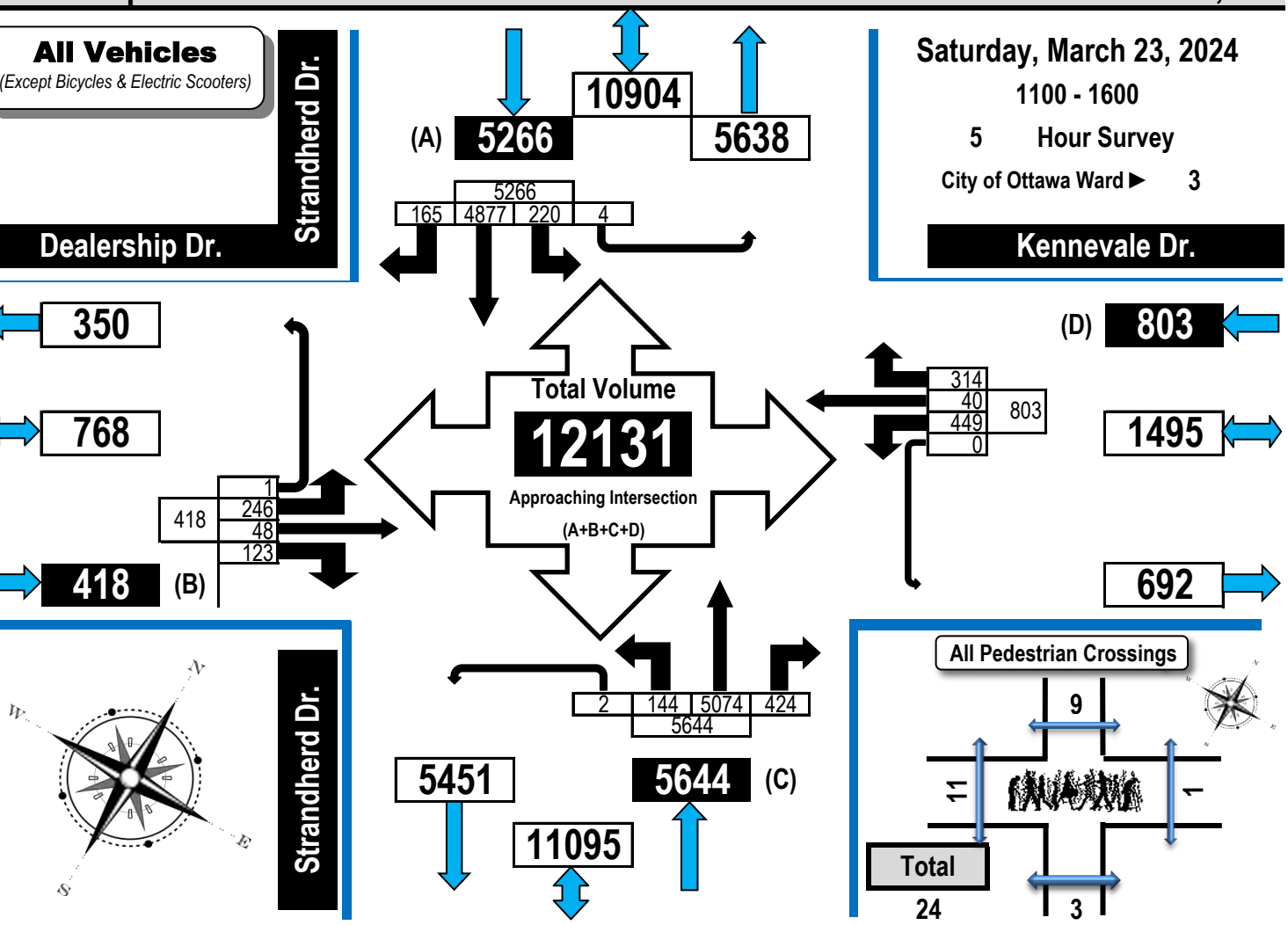
Summary - PM Peak Hr.	
Peak Hr.	1545-1645
Volume	2894
PHF	0.96

Turning Movement Count
Summary, OFF and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

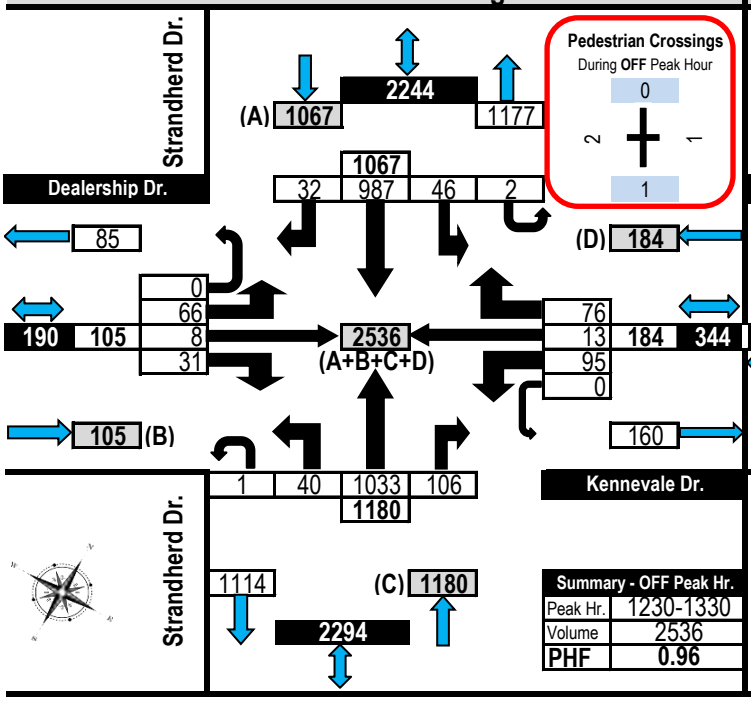
Dealership Drive/Kennevale Drive & Strandherd Drive — Barrhaven West, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Saturday, March 23, 2024
1100 - 1600
5 Hour Survey
City of Ottawa Ward ▶ 3

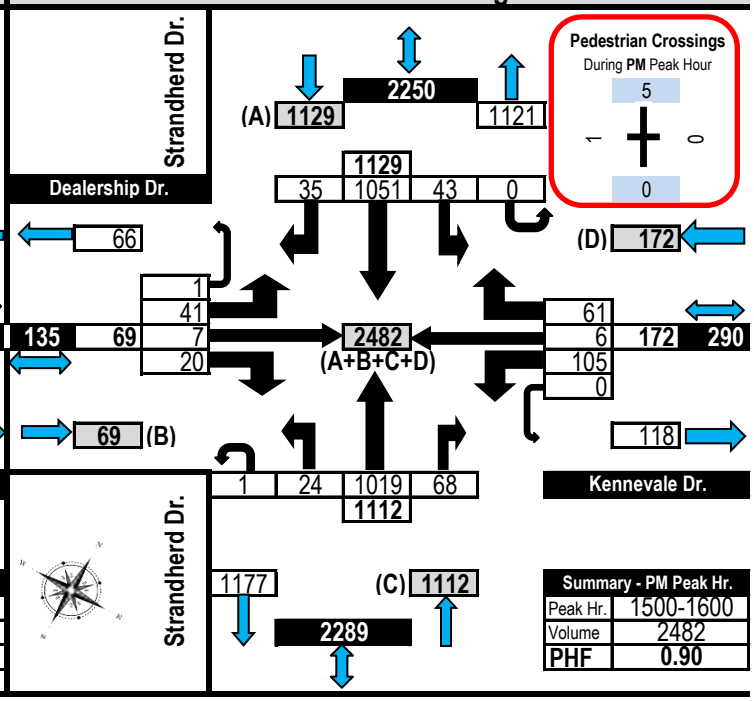


Off Peak Hour Flow Diagram



Summary - OFF Peak Hr.	
Peak Hr.	1230-1330
Volume	2536
PHF	0.96

PM Peak Hour Flow Diagram



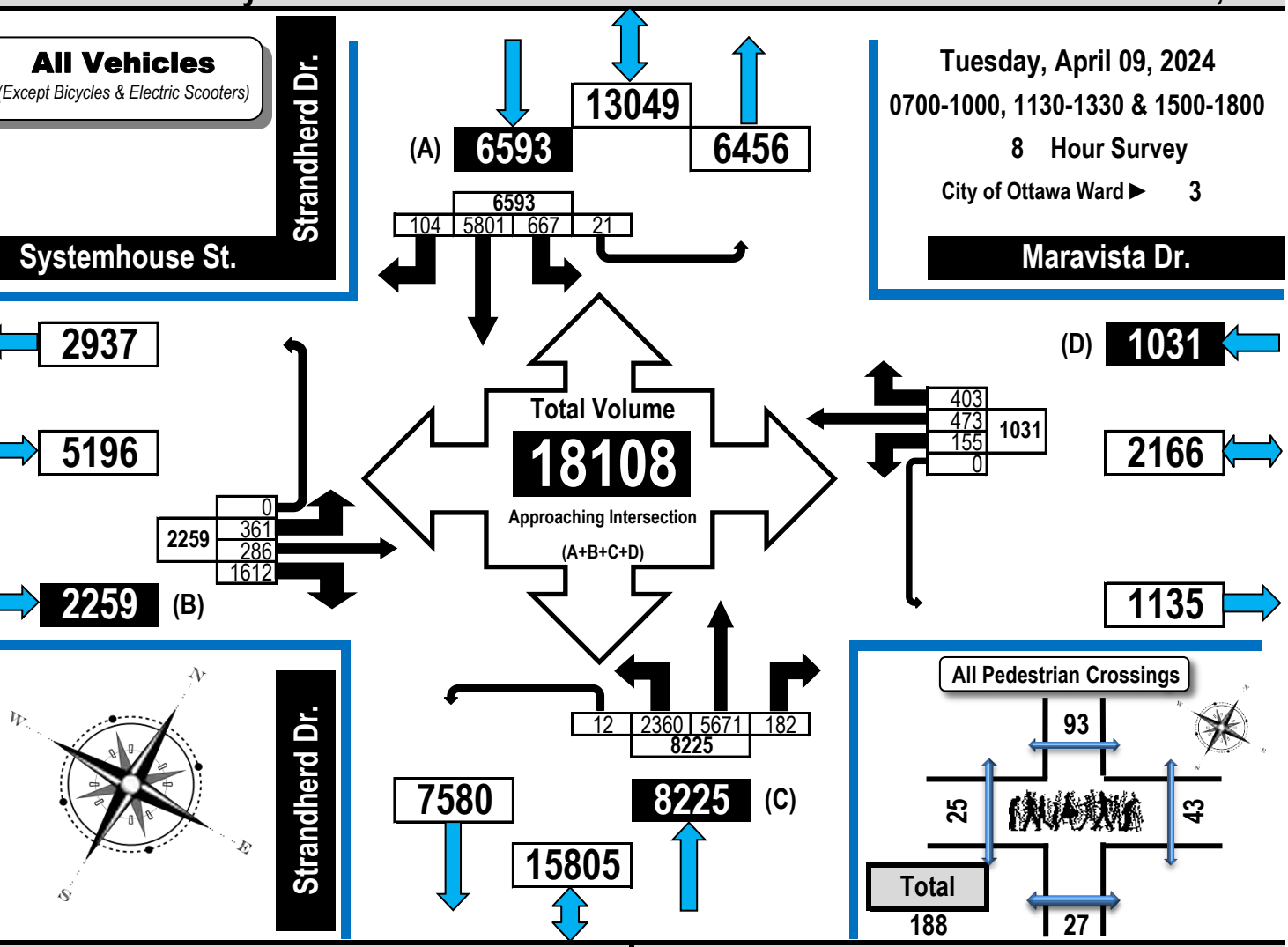
Summary - PM Peak Hr.	
Peak Hr.	1500-1600
Volume	2482
PHF	0.90

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

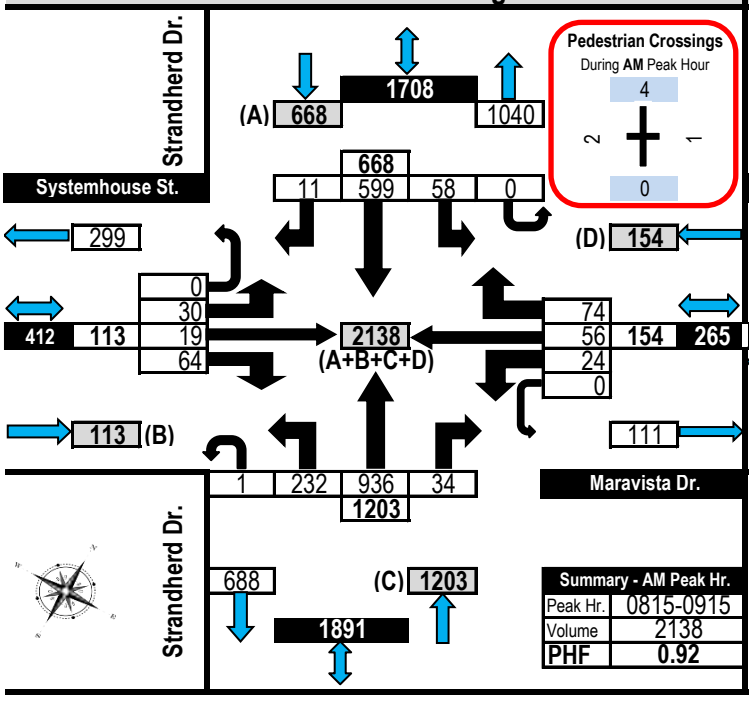
Maravista Drive/Systemhouse Street & Strandherd Drive — Barrhaven West, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, April 09, 2024
0700-1000, 1130-1330 & 1500-1800
8 Hour Survey
City of Ottawa Ward ► 3

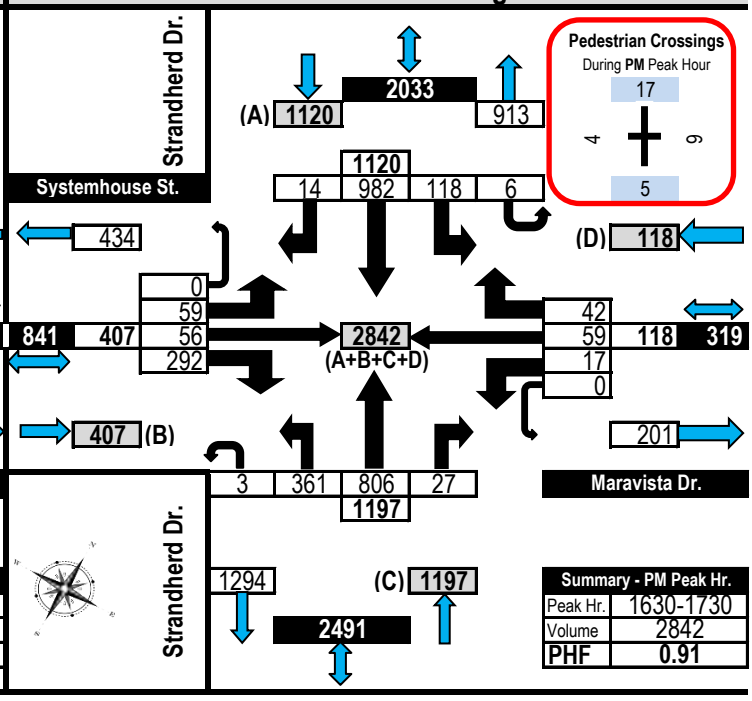


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0815-0915
Volume	2138
PHF	0.92

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1630-1730
Volume	2842
PHF	0.91

Turning Movement Count
Summary, OFF and PM Peak Hour Flow Diagrams
All Vehicles Except Bicycles

Maravista Drive/Systemhouse Street & Strandherd Drive — Barrhaven West, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Saturday, April 06, 2024
1100 - 1600
5 Hour Survey
City of Ottawa Ward ▶ 3

Total Volume **13881**
Approaching Intersection (A+B+C+D)

(A) Strandherd Dr.	4879	9148	4269	
Systemhouse St.	2880	5009	2129	(B)
Maravista Dr.	(D) 743	1632	889	
Strandherd Dr.	5843	11973	6130	(C)

All Pedestrian Crossings: 97 / 18 / 23 / Total 170 / 32

Off Peak Hour Flow Diagram

Pedestrian Crossings During OFF Peak Hour: 20 (8 + 0 + 5)

(A) Strandherd Dr.	965	1866	901	
Systemhouse St.	607	1037	430	(B)
Maravista Dr.	(D) 160	177	337	
Strandherd Dr.	1163	2456	1293	(C)

(A+B+C+D) = 2848

Summary - OFF Peak Hr.	
Peak Hr.	1300-1400
Volume	2848
PHF	0.92

PM Peak Hour Flow Diagram

Pedestrian Crossings During PM Peak Hour: 29 (4 + 9 + 8)

(A) Strandherd Dr.	1102	1944	842	
Systemhouse St.	537	993	456	(B)
Maravista Dr.	(D) 139	198	337	
Strandherd Dr.	1309	2498	1189	(C)

(A+B+C+D) = 2886

Summary - PM Peak Hr.	
Peak Hr.	1500-1600
Volume	2886
PHF	0.90

APPENDIX F

Collision Records

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: KENNEVALE DR @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 41

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jan-28, Sat,15:55	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2017-Jan-30, Mon,08:30	Clear	Rear end	P.D. only	Ice	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Apr-27, Thu,08:50	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-May-01, Mon,22:33	Clear	Other	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Pole (sign, parking meter)	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-May-02, Tue,16:00	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2017-May-27, Sat,17:52	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2017-Jun-08, Thu,17:15	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Jun-19, Mon,06:53	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Delivery van	Other motor vehicle	
2017-Oct-07, Sat,16:48	Clear	Turning movement	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Oct-28, Sat,18:35	Rain	Angle	P.D. only	Wet	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jan-15, Mon,03:35	Clear	SMV other	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Skidding/sliding	0
2018-Mar-17, Sat,13:00	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: KENNEVALE DR @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 41

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Apr-02, Mon,12:57	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-07, Sun,13:53	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Oct-09, Tue,16:15	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-03, Mon,07:20	Rain	Rear end	P.D. only	Wet	West	Going ahead	Truck-other	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Dec-17, Mon,15:00	Snow	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-19, Wed,16:00	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-09, Sat,11:44	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	
2019-Apr-07, Sun,20:13	Clear	Turning movement	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Making "U" turn	Police vehicle	Other motor vehicle	
2019-Apr-24, Wed,15:45	Clear	Sideswipe	P.D. only	Dry	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-11, Sat,09:17	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-18, Tue,10:01	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: KENNEVALE DR @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 41

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jul-10, Wed,09:03	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Pick-up truck	Other motor vehicle	
2019-Aug-23, Fri,10:58	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-28, Wed,18:32	Clear	Rear end	Non-fatal injury	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-18, Mon,18:40	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-20, Wed,17:12	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-01, Sun,12:51	Clear	Angle	P.D. only	Wet	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Making "U" turn	Automobile, station wagon	Other motor vehicle	
2019-Dec-12, Thu,15:47	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Jan-02, Thu,17:43	Clear	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-27, Thu,16:00	Snow	Rear end	P.D. only	Slush	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Jun-11, Thu,16:30	Clear	Other	P.D. only	Dry	East	Reversing	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Aug-07, Fri,08:38	Clear	Other	P.D. only	Dry	West	Going ahead	Passenger van	Debris falling off vehicle	0
					West	Unknown	Unknown	Other	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: KENNEVALE DR @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 41

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Feb-07, Sun,14:00	Clear	Rear end	P.D. only	Slush	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Feb-18, Thu,13:45	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Pick-up truck	Other motor vehicle	
2021-Sep-12, Sun,09:50	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2021-Sep-17, Fri,18:13	Clear	Rear end	P.D. only	Loose sand or gravel	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Oct-18, Mon,14:40	Rain	Rear end	P.D. only	Wet	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2021-Nov-05, Fri,11:54	Clear	Angle	P.D. only	Loose sand or gravel	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2021-Nov-14, Sun,12:08	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: MARAVISTA DR/SYSTEMHOUSE ST @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 46

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Mar-13, Mon,15:20	Clear	Rear end	P.D. only	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-24, Fri,21:54	Freezing Rain	SMV other	P.D. only	Slush	East	Going ahead	Automobile, station wagon	Skidding/sliding	0
2017-May-18, Thu,17:23	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jun-01, Thu,16:49	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2017-Sep-26, Tue,19:50	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Oct-12, Thu,12:32	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Making "U" turn	Automobile, station wagon	Other motor vehicle	
2017-Nov-04, Sat,18:19	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jan-03, Wed,17:07	Clear	Sideswipe	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Jan-08, Mon,12:00	Snow	Rear end	Non-fatal injury	Loose snow	East	Unknown	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-01, Sun,17:16	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Passenger van	Other motor vehicle	
2018-Sep-04, Tue,09:40	Clear	Rear end	P.D. only	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: MARAVISTA DR/SYSTEMHOUSE ST @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 46

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Nov-16, Fri,16:00	Snow	SMV other	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Skidding/sliding	0
2018-Dec-10, Mon,19:00	Clear	Sideswipe	P.D. only	Dry	West	Overtaking	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-21, Fri,13:58	Rain	Rear end	P.D. only	Wet	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-23, Sun,21:25	Clear	Rear end	P.D. only	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-27, Sun,14:04	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Delivery van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-29, Tue,16:41	Clear	Angle	Non-fatal injury	Packed snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-08, Fri,14:10	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2019-Apr-12, Fri,17:05	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-24, Mon,11:27	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-27, Thu,18:30	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-24, Wed,18:28	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Jul-31, Wed,16:00	Clear	Other	P.D. only	Dry	North	Reversing	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: MARAVISTA DR/SYSTEMHOUSE ST @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 46

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Oct-06, Sun,14:20	Clear	Rear end	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Dec-20, Fri,10:36	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Jan-18, Sat,10:30	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Jan-25, Sat,14:20	Snow	Rear end	P.D. only	Slush	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2020-Feb-01, Sat,18:41	Clear	Turning movement	P.D. only	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2020-Feb-13, Thu,14:56	Snow	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Mar-13, Fri,18:20	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2020-Jul-31, Fri,20:10	Clear	Rear end	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2020-Aug-19, Wed,20:43	Clear	Rear end	P.D. only	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Aug-28, Fri,14:30	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Pick-up truck	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2020-Sep-03, Thu,13:51	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2020-Nov-13, Fri,20:00	Clear	Rear end	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: MARAVISTA DR/SYSTEMHOUSE ST @ STRANDHERD DR

Traffic Control: Traffic signal **Total Collisions:** 46

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Jan-25, Mon,17:15	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Passenger van	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2021-Mar-06, Sat,08:34	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-May-27, Thu,10:35	Clear	Rear end	P.D. only	Dry	North	Turning right	Pick-up truck	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2021-Aug-05, Thu,17:04	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Unknown	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2021-Aug-07, Sat,12:18	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2021-Sep-17, Fri,10:40	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Passenger van	Other motor vehicle	
2021-Sep-27, Mon,16:28	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2021-Oct-08, Fri,12:45	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Truck - dump	Other motor vehicle	
2021-Nov-04, Thu,20:40	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2021-Dec-05, Sun,19:16	Clear	Rear end	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					North	Turning left	Unknown	Other motor vehicle	
2021-Dec-13, Mon,15:30	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Unknown	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: STRANDHERD DR btwn MARAVISTA DR & KENNEVALE DR

Traffic Control: No control **Total Collisions:** 12

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Aug-18, Fri,09:50	Rain	SMV other	P.D. only	Wet	North	Going ahead	Passenger van	Ran off road	0
2017-Sep-28, Thu,18:07	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-11, Wed,14:59	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-02, Tue,15:09	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Aug-01, Thu,16:25	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-20, Fri,17:39	Clear	Rear end	P.D. only	Dry	West	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Slowing or stopping	Pick-up truck	Other motor vehicle	
2019-Oct-01, Tue,17:56	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2019-Dec-22, Sun,12:30	Clear	Rear end	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Apr-04, Sat,16:30	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jul-27, Mon,14:30	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Jun-28, Mon,09:54	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Passenger van	Other motor vehicle	0
					East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

Location: STRANDHERD DR btwn MARAVISTA DR & KENNEVALE DR

Traffic Control: No control **Total Collisions:** 12

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2021-Oct-21, Thu,17:00	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Unknown	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2017 **To:** December 31, 2021

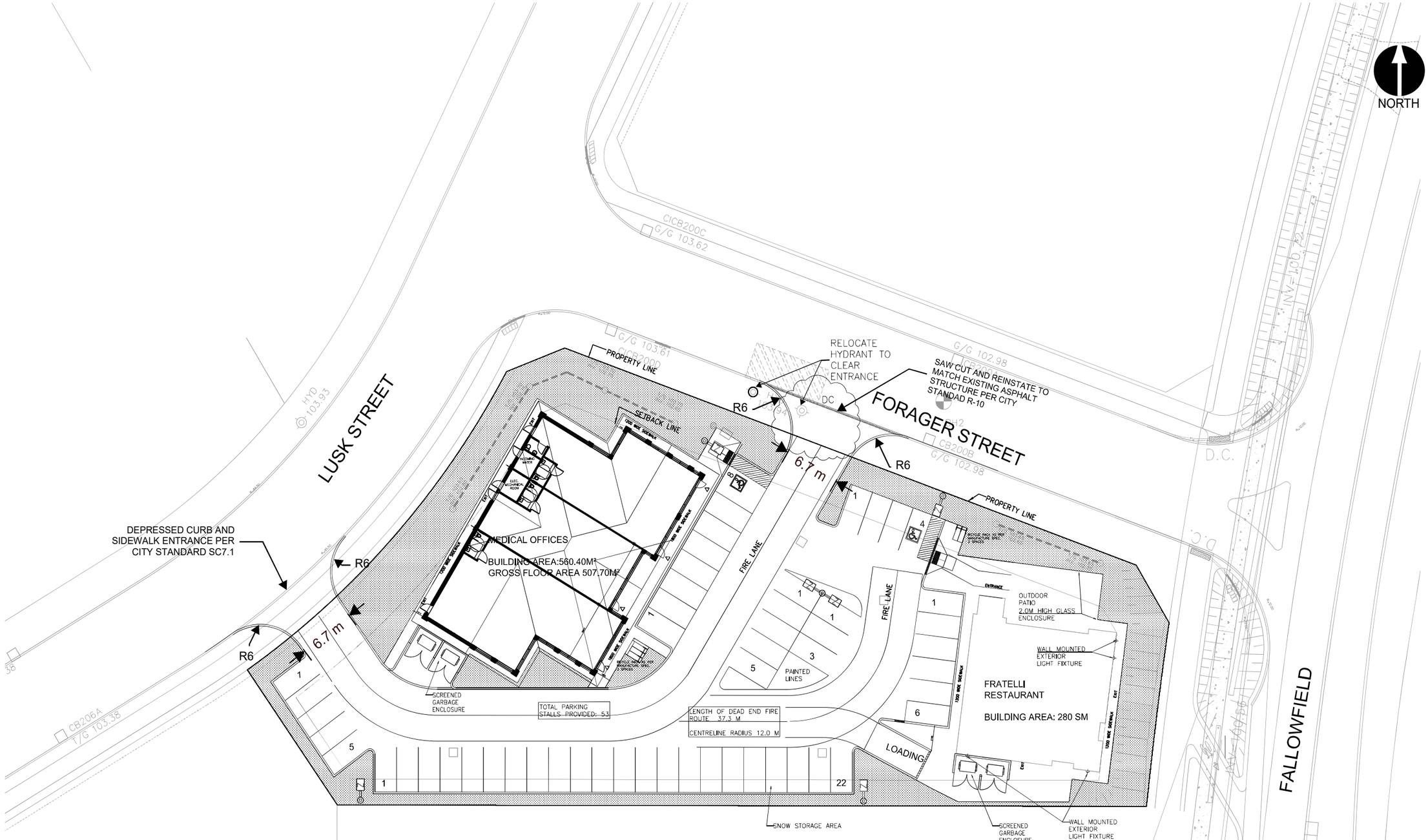
Location: SYSTEMHOUSE ST btwn CITIGATE DR & STRANDHERD DR

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2020-Apr-11, Sat,15:56	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Municipal transit bus	Other motor vehicle	

APPENDIX G

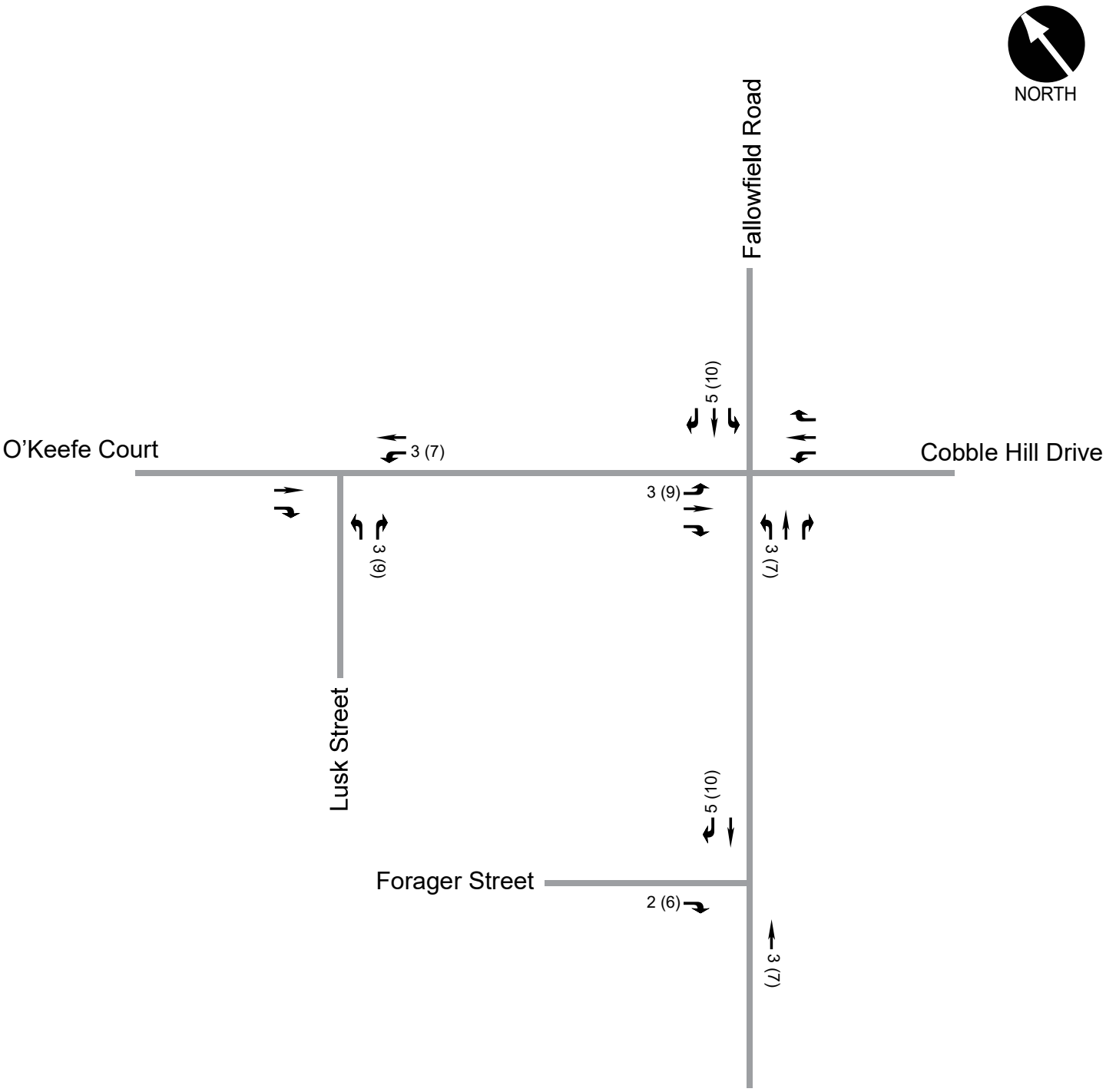
Other Area Developments



115 Lusk Street
Transportation Impact Assessment

Exhibit 2: Proposed Development

PROJECT No. 122508
DATE: January 2021
SCALE: 0m 5m 10m

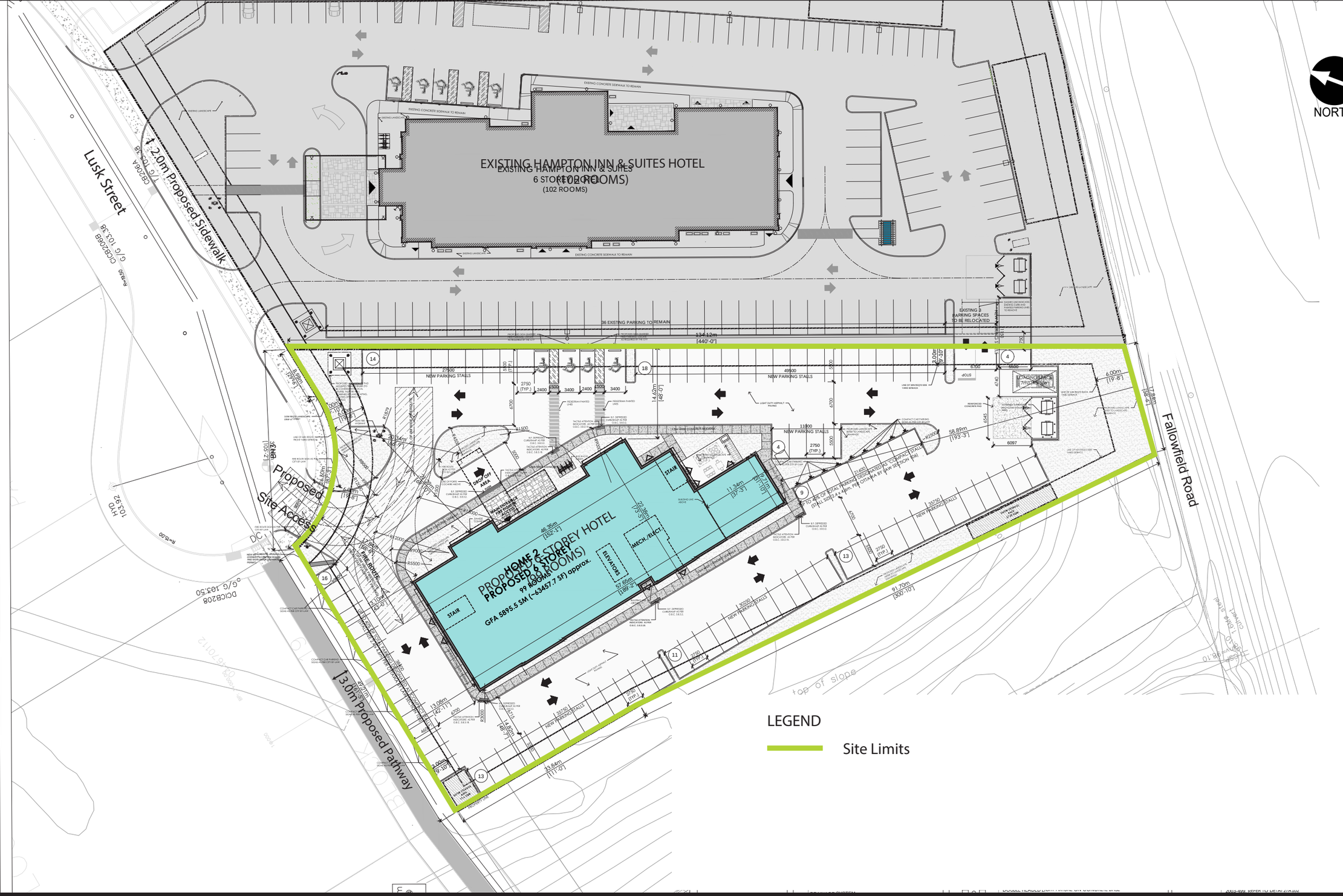


B

115 Lusk Street
Transportation Impact Assessment

Exhibit 4:
Site-Generated
AM & PM Peak Hour
Traffic

PROJECT No. 122508
DATE: January 2021
SCALE: N.T.S.



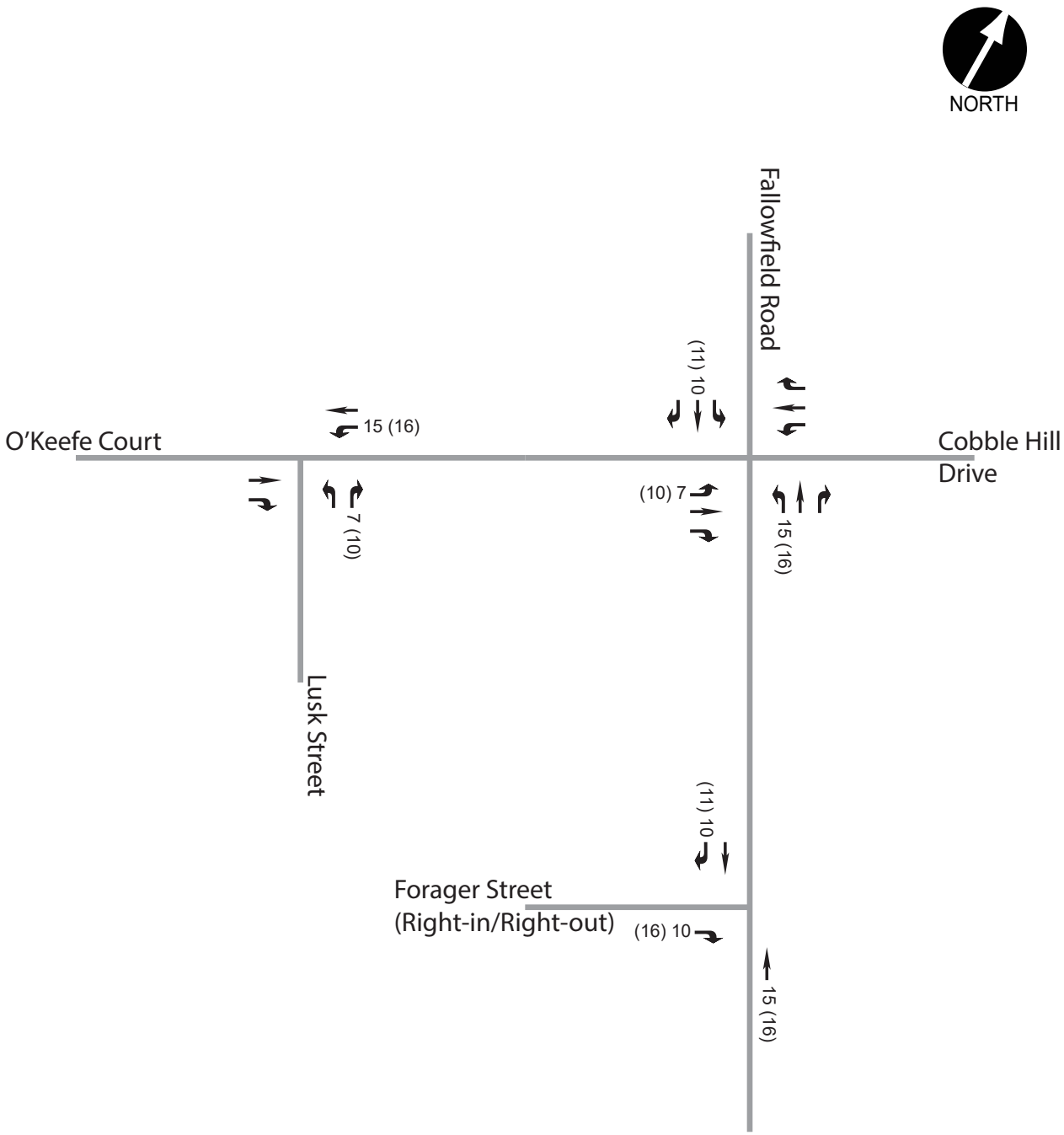
IBI

135 Lusk Street
Transportation Impact Assessment

Exhibit 2: Proposed Development

PROJECT No. 135639

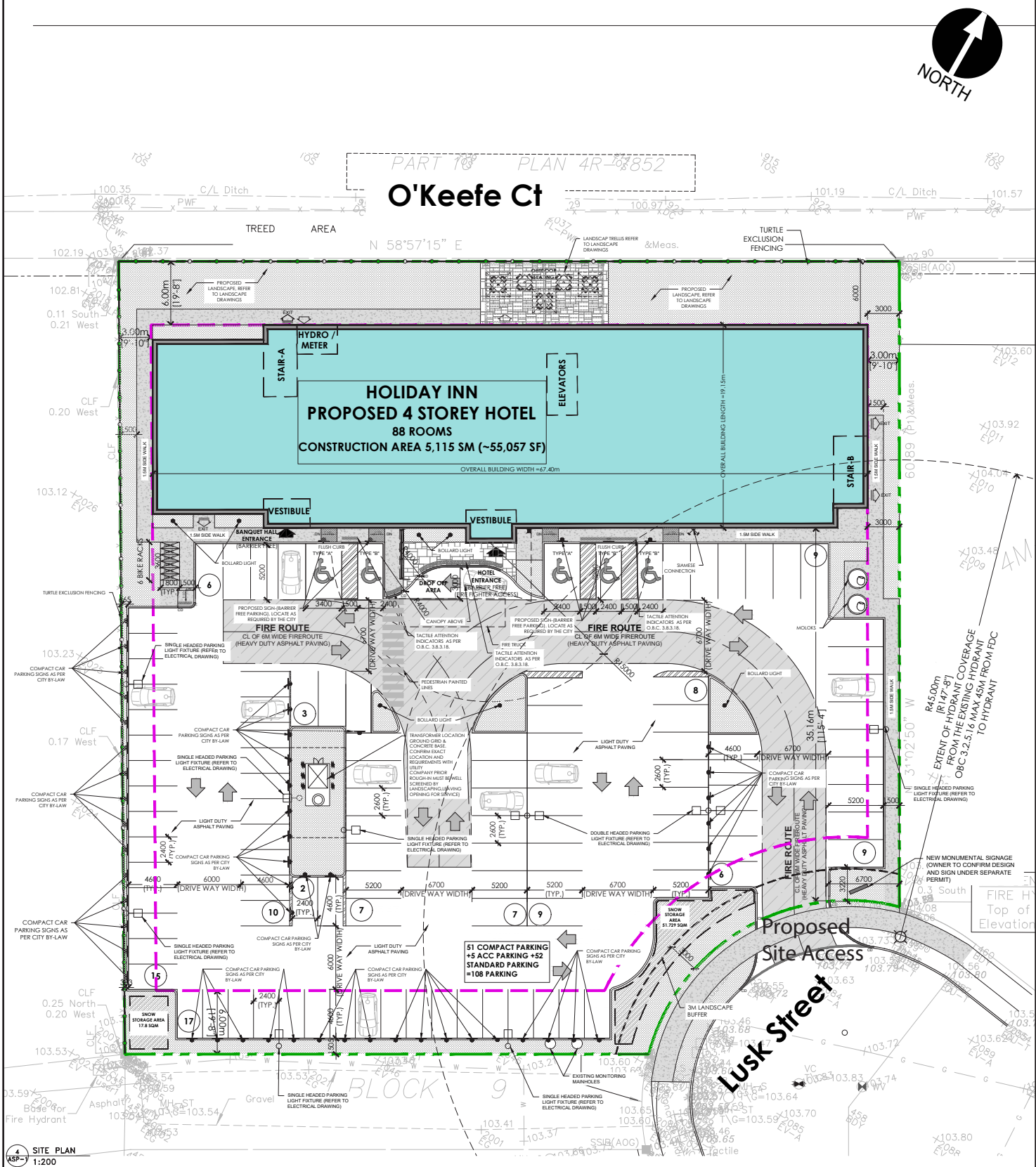
SCALE: 0m 5m 10m



LEGEND

Permitted Movements

xxx (xx) — Weekday AM (PM) Peak Hour Vehicular Volume



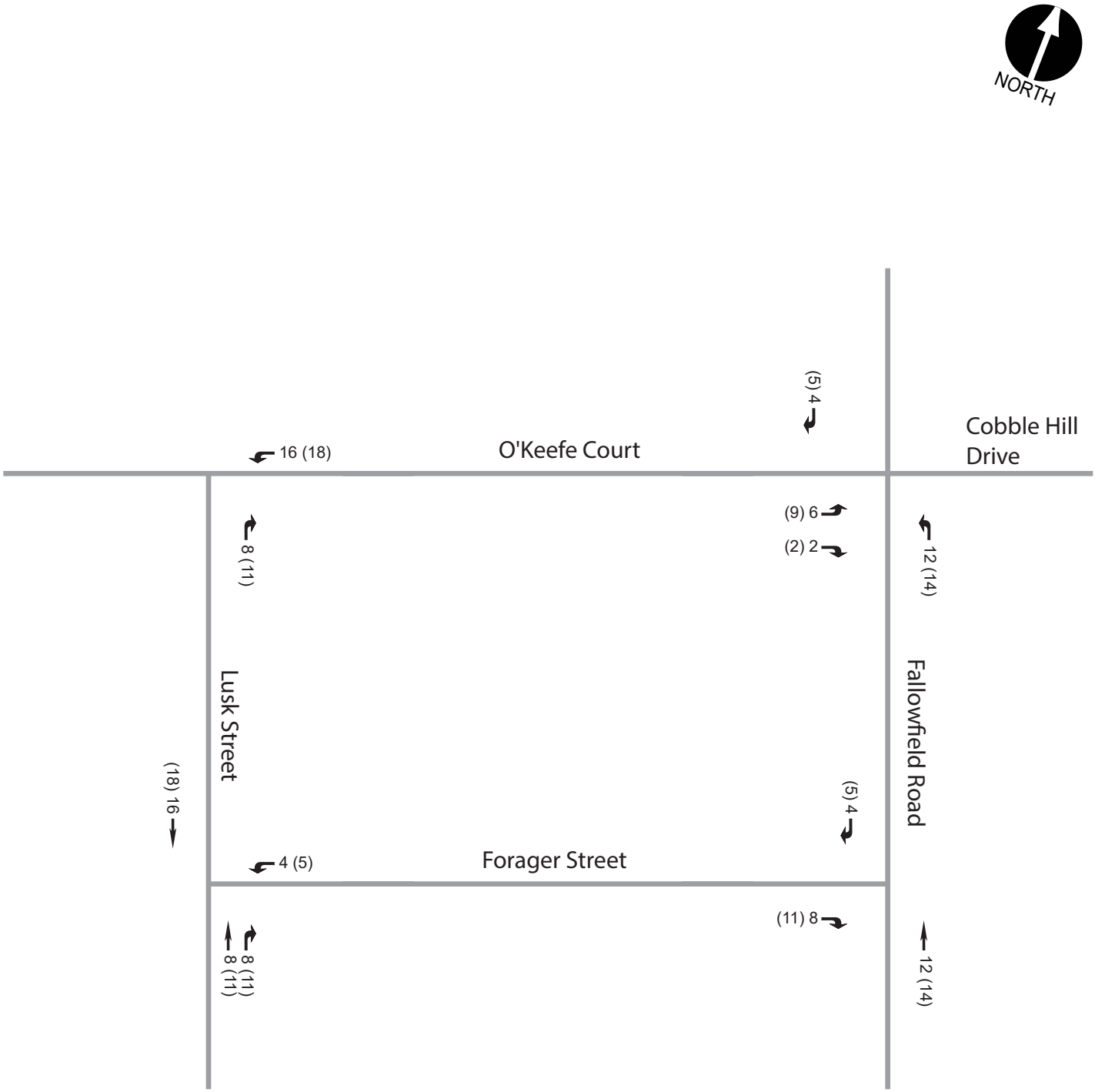
ARCADIS
IBI GROUP

140 Lusk Street
Transportation Impact Assessment

Exhibit 2:
Proposed Development

PROJECT No. 140895

SCALE: N.T.S.



LEGEND

Permitted Movements

xxx (xxx) xxx (xxx) xxx (xxx)

Weekday AM (PM) Peak Hour Vehicular Volume

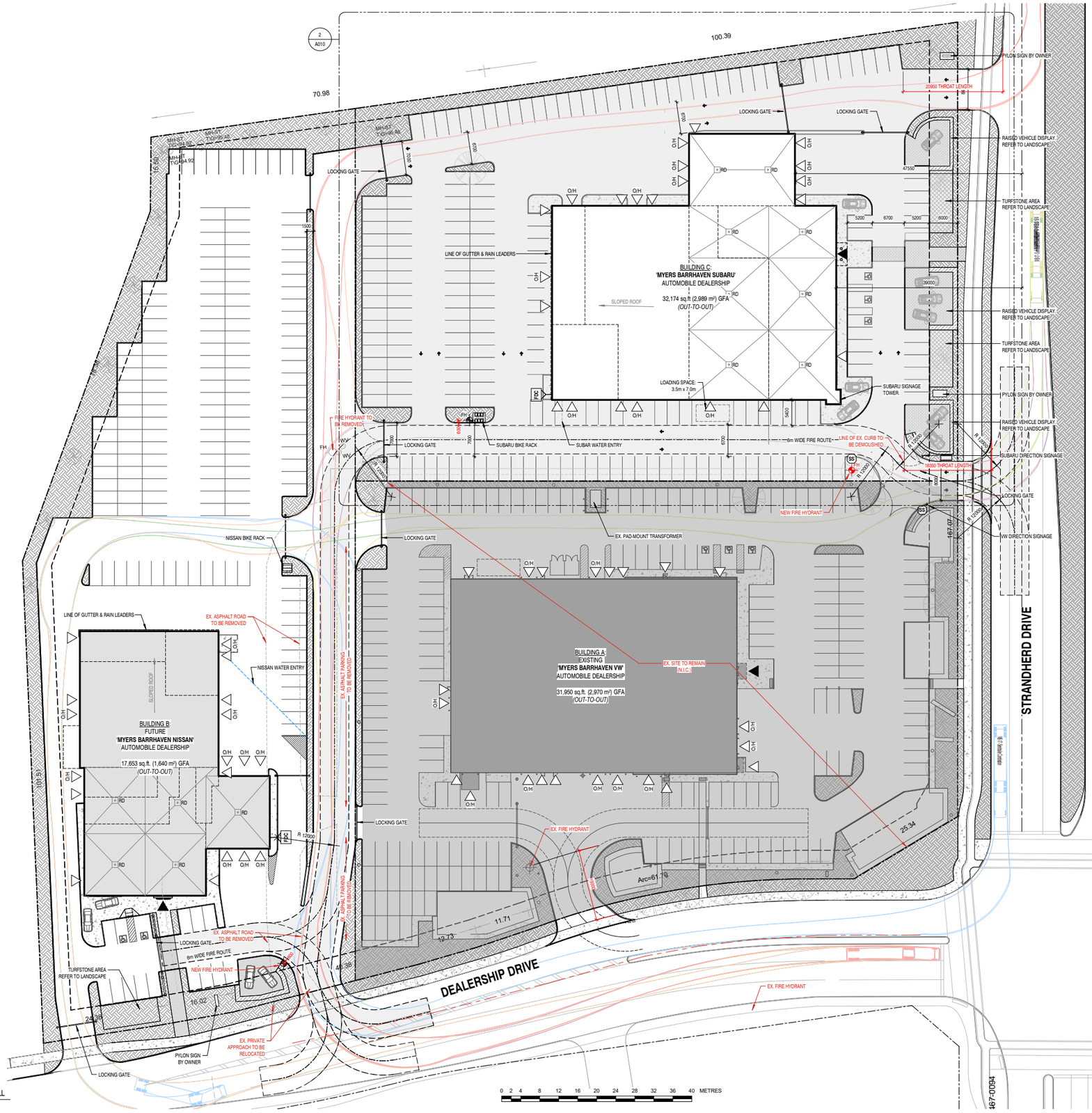
ARCADIS IBI GROUP

140 Lusk Street
Transportation Impact Assessment

Exhibit 6:
Site-Generated Traffic

PROJECT No. 140895

SCALE: N.T.S.



1 / A010A SITE PLAN OVERALL
1 : 400

SITE / BUILDING / PARKING SUMMARY:

TOTAL SITE AREA = 33,784 m² (8.35 acres)

VW SITE	= 11,259 m² (2.78 acres)
SUBARU SITE	= 11,071 m² (2.74 acres)
NISSAN SITE	= 11,453 m² (2.83 acres)
	= 33,784 m² (8.35 acres)

BUILDING AREAS: *(OUT-TO-OUT)*

VW SITE	= 2,970 m²
SUBARU SITE	= 2,989 m²
NISSAN SITE	= 1,640 m²
	= 7,599 m²

OVERALL FLOOR SPACE INDEX = 0.25

LOT COVERAGE:

VW SITE	= 2,448 m²
SUBARU SITE	= 2,781 m²
NISSAN SITE	= 1,525 m²
	= 6,754 m²

TOTAL LOT COVERAGE = 20.0%

MINIMUM WIDTH OF LANDSCAPING:

ABUTTING STRANDHERD DR.	= 6.0m
ABUTTING STREET	= 3.2m
ABUTTING O'KEEFE DRAINAGE CORRIDOR	= 3.0m
OTHER CASES	= 0.0m

TOTAL LANDSCAPE AREA:

VW SITE	= 9,105 m²
SUBARU SITE	= 1,128 m²
NISSAN SITE	= 1,743 m²
	= 11,976 m²

% LANDSCAPE AREA = 35.4%

PARKING ON SITE:

	REQ'D	PROV'D
VW SITE	59 spaces	183 spaces
SUBARU SITE	xx	203 spaces
NISSAN SITE	37 spaces	170 spaces
	= xx	**558 spaces**

BARRIER-FREE PARKING:

	REQ'D	PROV'D
VW SITE	1x 'A', 2x 'B'	3x 'A'
SUBARU SITE	xx	2x 'A', 1x 'B'
NISSAN SITE	1x 'A', 1x 'B'	1x 'A', 1x 'B'

'A' = 3.4m x 5.2m
'B' = 2.6m x 5.2m

BICYCLE PARKING:

	REQ'D	PROV'D
VW SITE	2	2
SUBARU SITE	3	3
NISSAN SITE	2	2
TOTAL	**7**	**7**

SITE PLAN SYMBOLS

ICON	DESCRIPTION
	Existing Buildings
	Proposed Buildings
	Property Lines
	Setback Lines
	Fence
	Road Lanes
	Existing Concrete Curb
	Proposed Concrete Curb
	Depressed Concrete Curb
	Concrete Sidewalk
	Proposed Concrete Pavers
	Sawcut Asphalt
	Existing Landscape Area
	Proposed Landscape Area
	Proposed Turfstone Area
	Barrier Free Parking Space
	Exterior Bicycle Parking Spot with Bollard Style Bike Rack
	Two Way Vehicle Circulation
	Principal Entrance Door
	Exterior Door ('O/H' indicates Overhead Door)
	Exterior 6m Wide Fire Route (12m centerline radius on all turns, TYP.)
FDC	Fire Department Connection
FH	Fire Hydrant
SS	Stop Sign

TOPOGRAPHICAL SKETCH OF ELEVATIONS OVER PART OF
BLOCK 4
REGISTERED PLAN 4M-1538
CITY OF OTTAWA
ANNIS, O'SULLIVAN, VOLLEBEKK Ltd.
E.H. Herweyer O.L.S.
Field Work Completed: Sept. 2019

REVISIONS

No.	DATE	DESCRIPTION
0	11 Jan 2022	Issued for Coordination
1	22 Apr 2022	Issued for Coordination
2	20 July 2022	Progress for Review
3	09 Aug 2022	Revised per SPA City Comments 1
4	18 Aug 2022	Issued for Consultant Coordination

It is the responsibility of the appropriate contractor to check and verify all dimensions on site and report all errors and / or omissions to the Architect.
All contractors must comply with all pertinent codes and by-laws.
Do not scale drawings.
This drawing may not be used for construction until signed by KWC Architects Inc. and shall not be used without the Architect's consent.

north

architect's seal

383 Parkdale Avenue, Suite 201
Ottawa, Ontario, Canada, K1Y 4R4

KWC ARCHITECTS INC.

Phone: 613 238-2217
Fax: 613 238-6595
E-Mail: kwc@kwc-arch.com

owner
ZENA INVESTMENT CORPORATION

project
MYERS BARRHAVEN SUBARU AUTOMOBILE DEALSHIP
4149 Strandherd Drive

drawing title
SITE PLAN - OVERALL COMPOSITE PLAN

project no.	kwc 2174
scale	As indicated
drawn by	CM / AK
date	11 JANUARY 2022

drawing no.
A010A

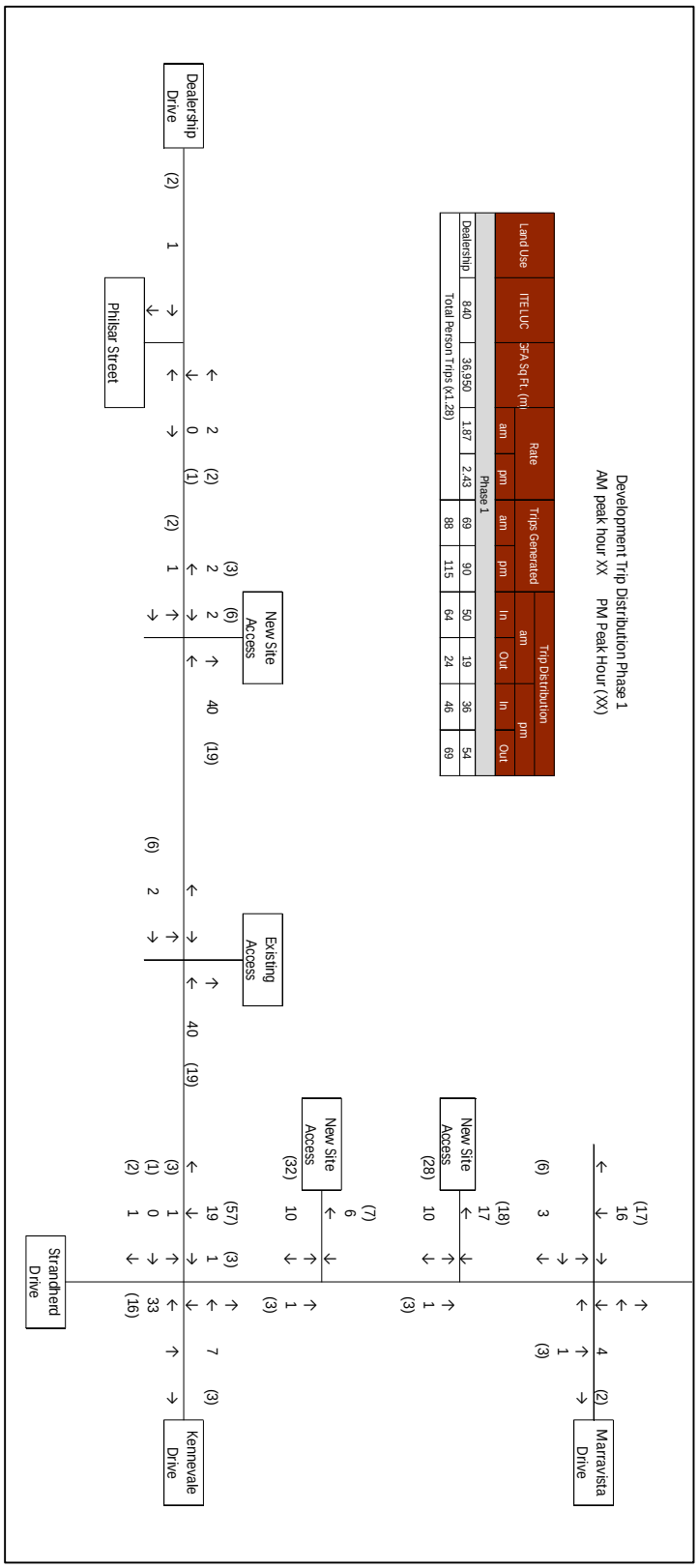


Figure 7.1 Phase One Development Generated traffic

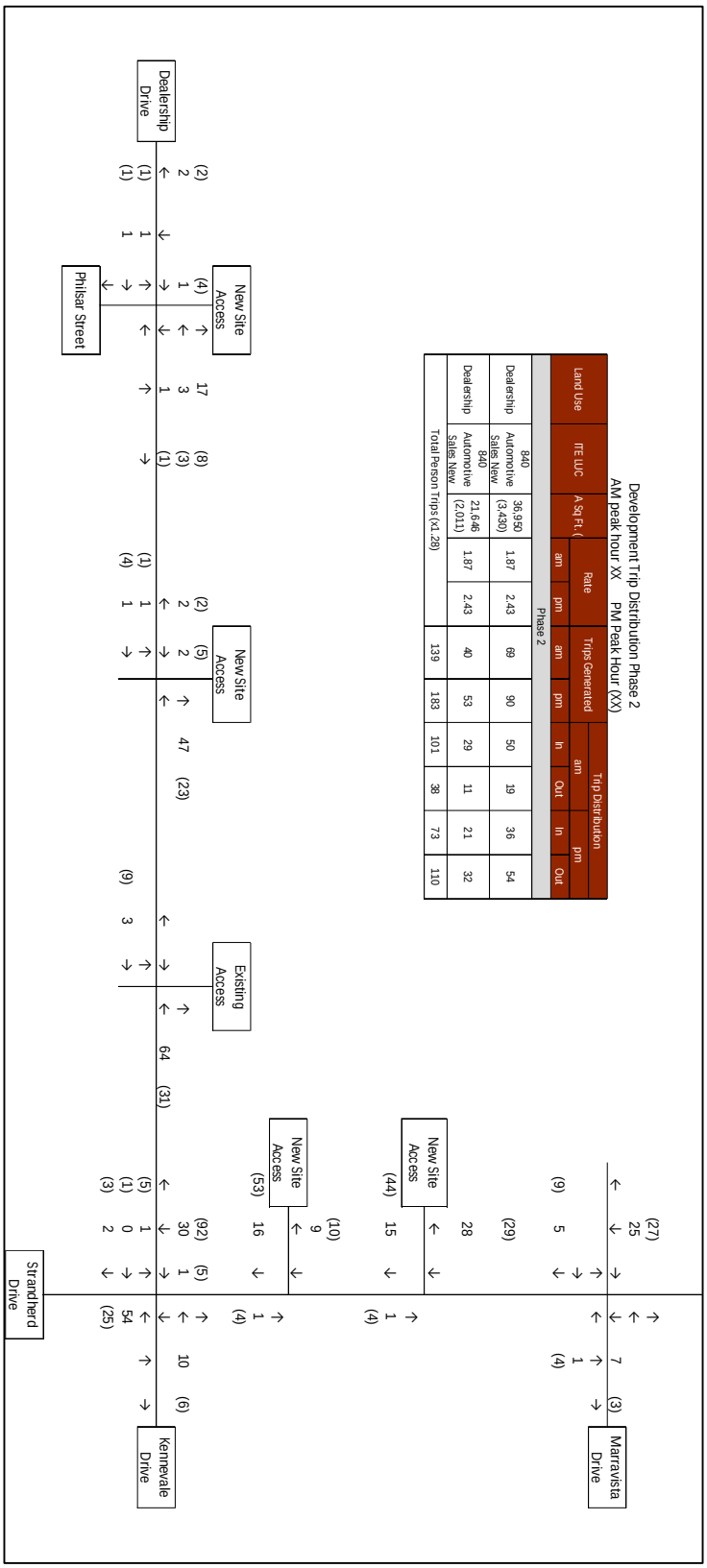


Figure 7.2 Phase Two Development Generated traffic

EXISTING BUSINESS PARK

EXISTING MIXED USE

EXISTING OPEN SPACE

Citigate Drive

Systemhouse Street

N 59°37'30" E 117.04 — N 59°18'40" E 211.60 — N 59°13'10" E 71.22 — N59°23'50"E 104.23 — N 59°09'50" E 153.58

158.84 233.72 31.29 175.85

BLOCK 5
Conservation Block
Area= 1.55 Ha
(3.84 Acres)

BLOCK 4
Industrial & Logistics
Area= 4.17 Ha
(10.31 Acres)

BLOCK 1
Industrial & Logistics
Area= 3.62 Ha
(8.96 Acres)

BLOCK 6
Parkland Dedication
Area= 0.50 Ha
(1.24 Acres)

N 24°41'00" W R=2050.15 A=153.55 C=153.51

96.30 95.48 167.58 61.52

Vacant Lands

313.59

Street One

49.89 11.80 19.87 8.86 11.19

290.20

Cultivated Lands

N 22°35'10" W 157.41 161.73

72.61 84.04 86.01 96.45

N 22°03'00" W 152.13 156.89

BLOCK 3
Industrial & Logistics
Area= 4.64 Ha
(11.48 Acres)

BLOCK 2
Industrial & Logistics
Area= 4.86 Ha
(12.02 Acres)

EXISTING OPEN SPACE

94.57 200.23 325.67

N 59°31'50" E 77.99 — N 59°13'10" E 85.48 — N 59°18'00" E 144.47 — N 59°12'40" E 139.04 — N 59°23'00" E 136.27 — N 59°16'10" E 63.60

FUTURE INDUSTRIAL

EXISTING BUSINESS PARK

EXISTING SWM

FUTURE INDUSTRIAL

N 59°21'30" E 152.52 — N 59°14'40" E 154.24

152.52 141.14 13.10

N77°16'10"W 19.26

N18°19'20"W 9.08

24.00

Dealership Drive

208.55

BLOCK 6
Industrial & Logistics
Area= 6.05 Ha
(14.95 Acres)

PART 1 PLAN 5R-13502
PIN 04467-0028

Cultivated Lands

Street Two

76.29 81.79 30.07 26.00

N 22°35'20" W

N 22°26'00"W 68.04

128.18

N 22°38'30" W

EXISTING BUSINESS PARK

EXISTING OPEN SPACE

Philsar Street

EXISTING BUSINESS PARK

N 59°14'20" E 152.43 — N 59°16'30" E 152.37 — N59°22'20"E 13.18

PIN 04467-0022

KEY MAP
NOT TO SCALE

METRIC : MEASUREMENTS SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

DRAFT PLAN OF SUBDIVISION OF
PART LOT 17 & 18
CONCESSION 4 (RIDEAU FRONT)
Geographic Township of Nepean
CITY OF OTTAWA
SCALE
1 : 1500
DATE: JUNE, 2023

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO ADJOINING LANDS ARE CORRECTLY SHOWN.

DATED _____

ED HERWEYER
ONTARIO LAND SURVEYOR

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
ONTARIO LAND SURVEYORS 22664-22

OWNER'S CERTIFICATE

I/WE, _____ BEING THE REGISTERED OWNER(S), HEREBY AUTHORIZE NOVATECH TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE CITY OF OTTAWA FOR REVIEW AND APPROVAL.

DATED _____ _____
owner name

OWNER'S CERTIFICATE

I/WE, CITY OF OTTAWA, BEING THE REGISTERED OWNER(S), HEREBY AUTHORIZE NOVATECH TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE CITY OF OTTAWA FOR REVIEW AND APPROVAL.

DATED _____ _____
owner name

ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51 (17) OF THE PLANNING ACT.

A) The boundaries of the land proposed to be subdivided, certified by an Ontario land Surveyor;
As shown on Draft Plan

B) The locations, widths & names of the proposed highways within the proposed subdivision & of existing highways on which the proposed subdivision abuts;
As shown on Draft Plan

C) On a small keyplan, on a scale of not less than 1cm to 100m, all of the land adjacent to the proposed subdivision that is owned by the applicant or in which the applicant has an interest, every subdivision adjacent to the proposed subdivision & the relationship of the boundaries of the land to be subdivided to the boundaries of the township lot of other original grant of which the land forms the whole part;
As Shown on Draft Plan

D) The purpose for which the proposed lots are to be used;
Industrial, and Open Space shown on Draft Plan

E) The existing uses of all adjoining lands;
Business Park, Open Space, and Stornwater Management shown on Draft Plan

F) The approximate dimensions & layout of the proposed lots;
As shown on Draft Plan

G) Natural & artificial features such as buildings or other structures or installations, railways, highways, watercourses, drainage ditches, wetlands & wooded areas within or adjacent to the land proposed to be subdivided;
As shown on Draft Plan

H) The availability and nature of domestic water supplies;
Development will be supplied with full municipal piped water service

I) The nature & porosity of the soil;
See Soils Report

J) Existing contours or elevations as may be required to determine the grade of the highways and the drainage of the land proposed to be subdivided;
Contours shown at 0.25 metre intervals on Draft Plan

K) The municipal services available or to be available to the land proposed to be subdivided;
Development will be supplied with full sanitary and storm water sewer services.

L) The nature & extent of any restrictions affecting the land proposed to be subdivided, including restrictive covenants or easements. 1994, c. 23, s. 30; 1996, c. 4, s. 29 (3);
As shown on Draft Plan.

NOVATECH
Engineers, Planners & Landscape Architects
Suite 200, 240 Michael Cowpland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
Website www.novatech-eng.com

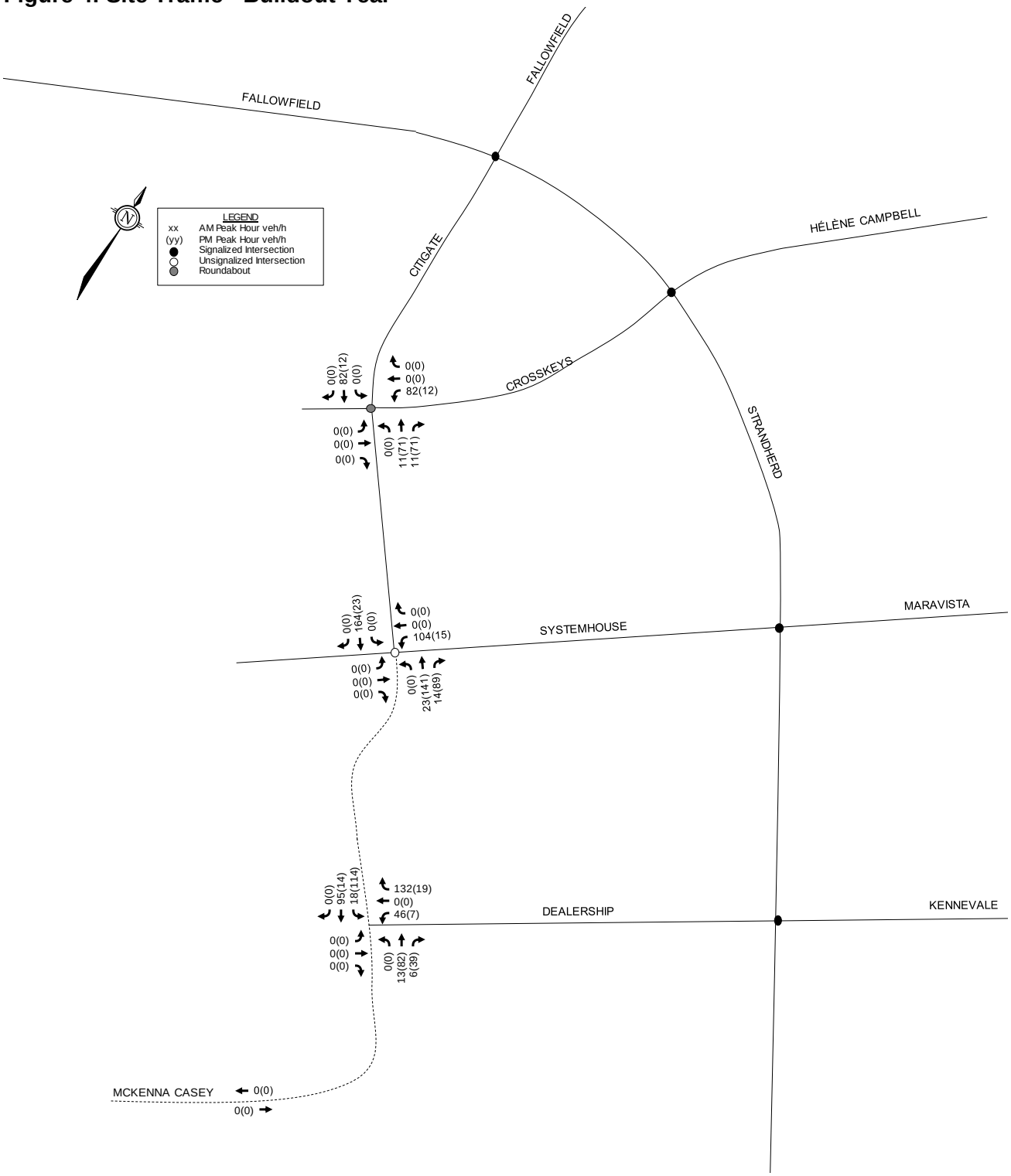
PROJECT No. 122003

M:\2022\122003\CAD\Planning\Draft Plans\122003-DP-Revised.dwg, DP-A1, Jun 09, 2023 - 1:28pm, wstoss

DXX-XX-XXXX

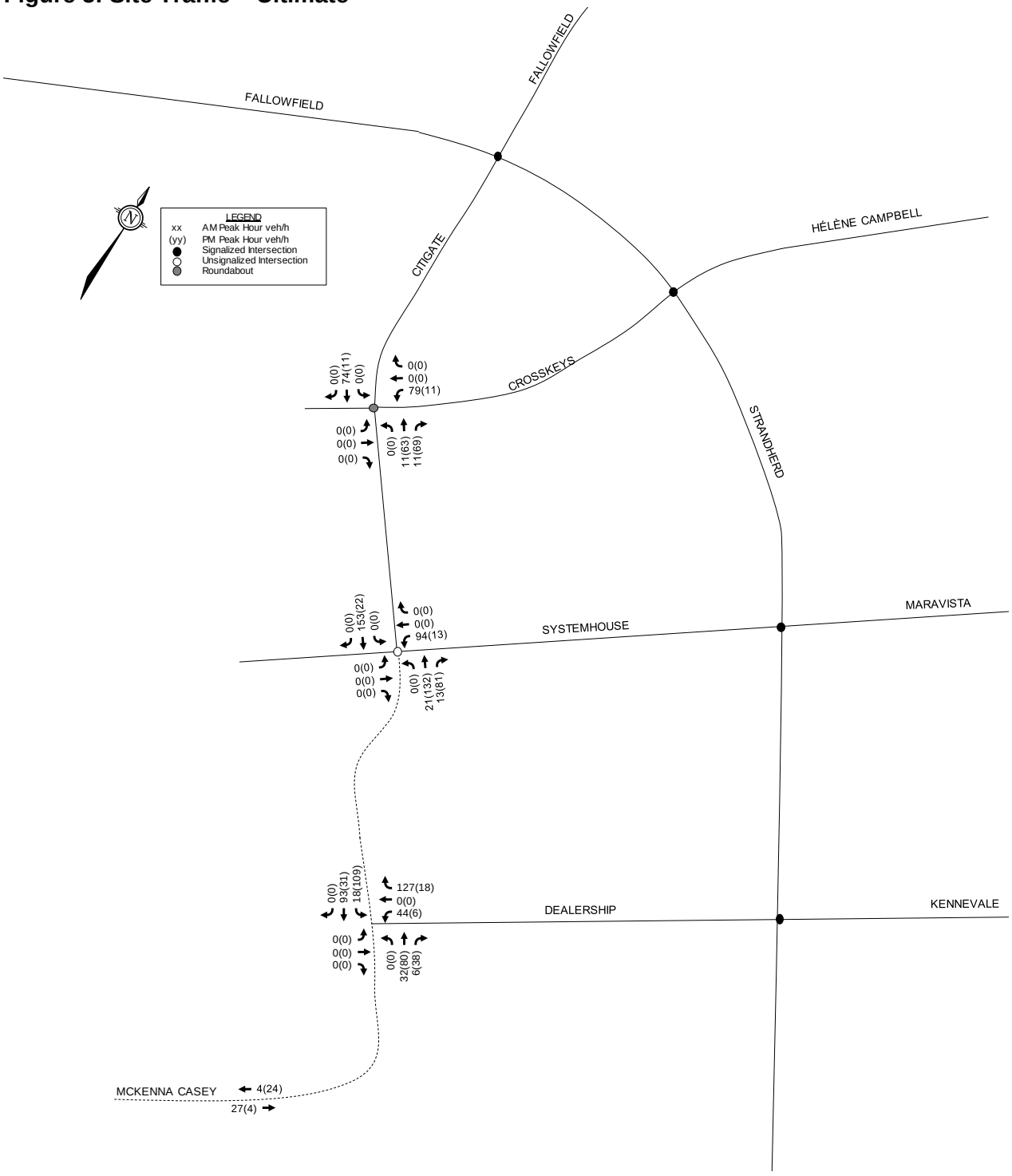
#xxxxx

Figure 4: Site Traffic - Buildout Year

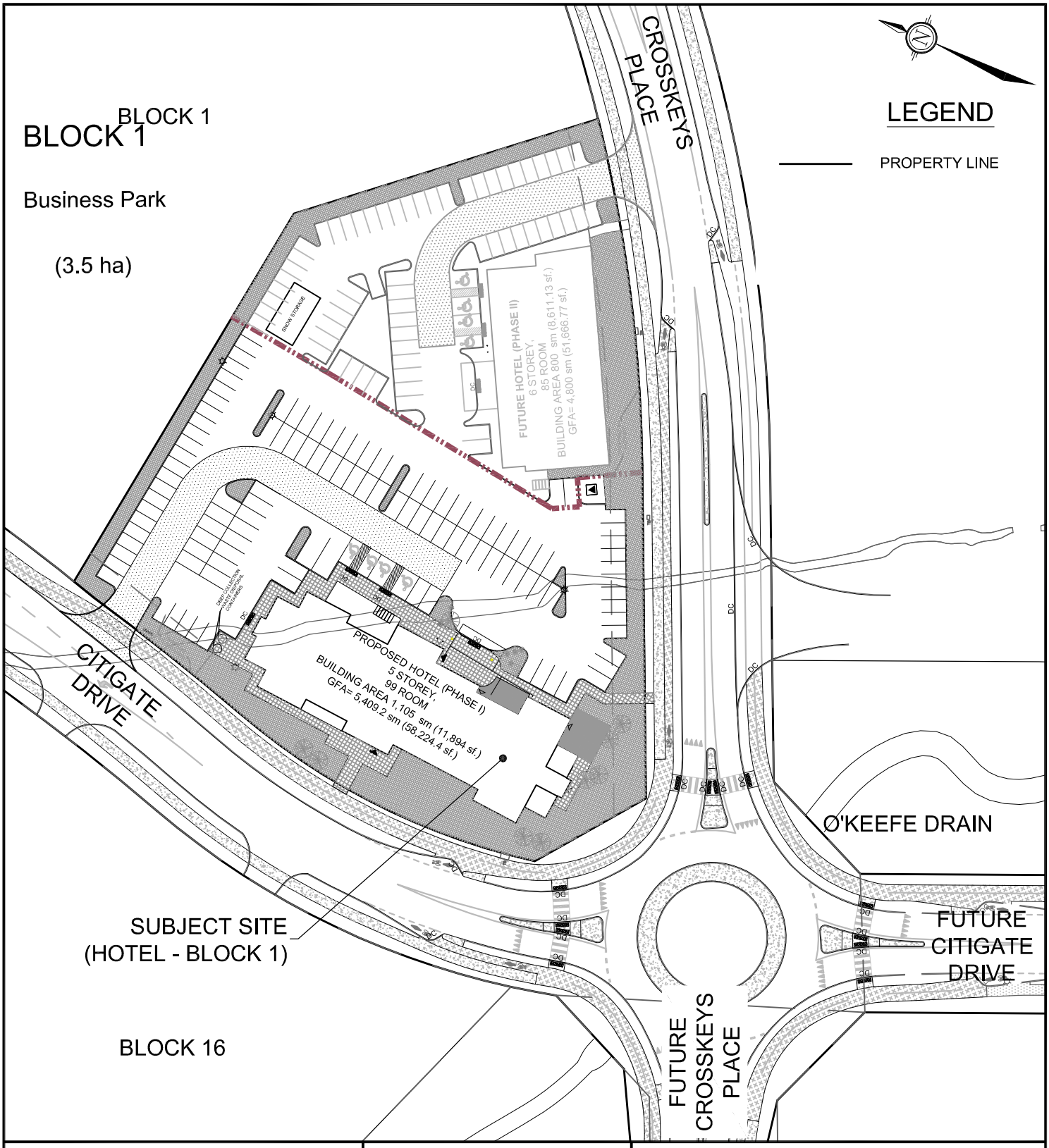


Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

Figure 5: Site Traffic – Ultimate



Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com



NOVATECH
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Ottawa, Ontario, Canada K2M 1P6

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Facsimile (613) 254-5867
Website www.novatech-eng.com

CITY OF OTTAWA
CITIGATE HOTEL
4433 STRANDHERD DRIVE

SITE PLAN

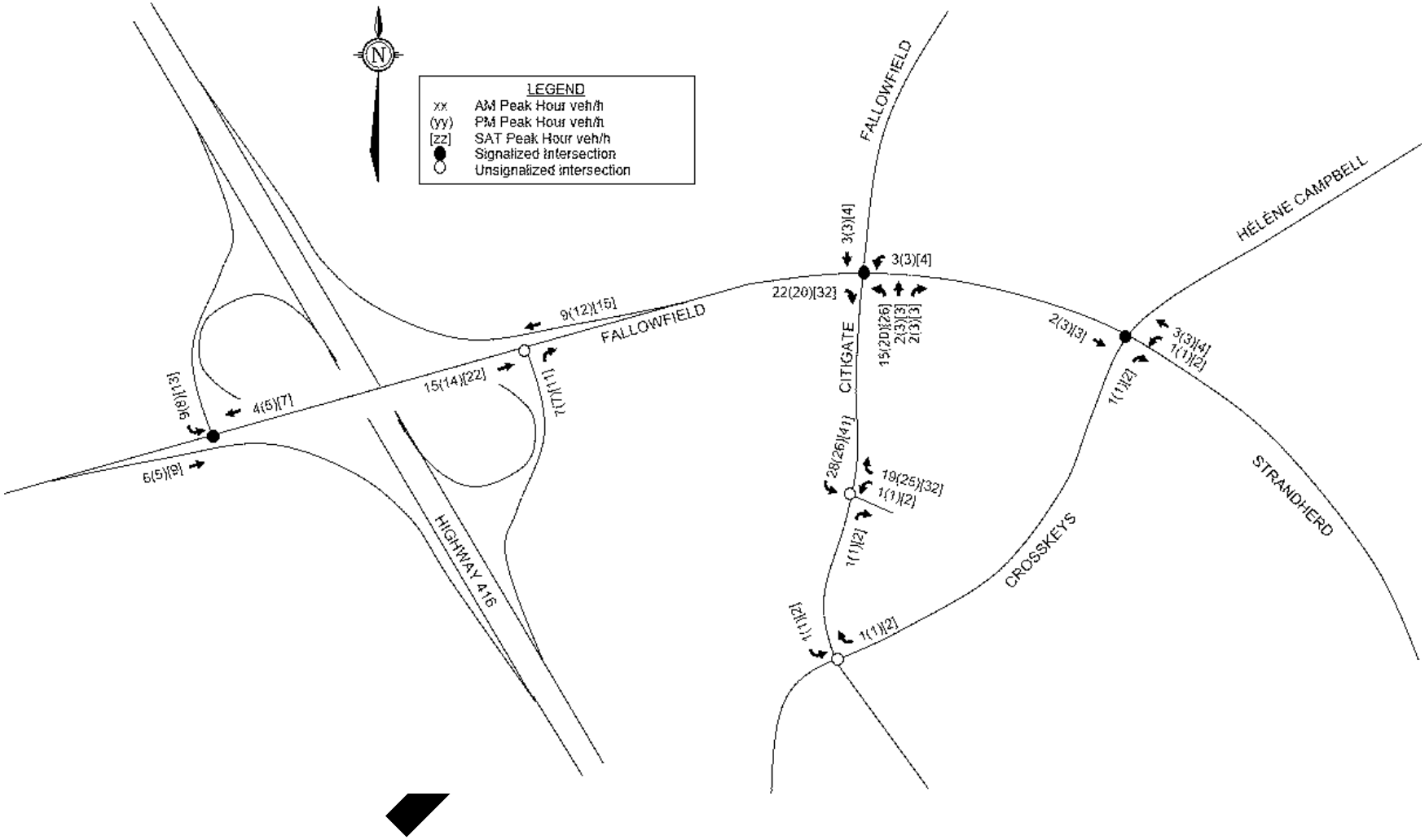
SCALE 1 : 1000 (0, 10, 20, 30, 40)

DATE MAR 2019 | JOB 118081 | FIGURE

SHT8X11.DWG - 216mmx279mm

M:\2018\118081\CAD\Design\Figures\Traffic\118081 AutoTurn.dwg, SITE PLAN, Mar 07, 2019 - 8:38am, rfortier

Figure 4: Site Generated Traffic Volumes



3.4 SITE TRAFFIC GENERATION

3.4.1 Land Use and Trip Generation Rates

The *Institute of Transportation Engineers (ITE) Trip Generation Manual (9th Edition)* was used to estimate traffic generated by the subject site. The ITE land use codes 210 – Single Family Homes, 230 – Condo / Townhomes, and 520 – Elementary School were thought to be most representative of the proposed land uses.

As the school board has an option on the school block for seven years, there are no concepts or drawings prepared for the school at this time. In order to assess the trip generation of the proposed school, the size of the future school was estimated using a similar sized property for an elementary school in Barrhaven South. It was assumed that the proposed school will be approximately 30,000 square feet in size.

Table 3 summarizes the trip rates obtained from the *ITE Trip Generation Manual* and the ensuing sections describe the methodology used to convert these trips to person trips across all modes of transportation.

Table 3 Trips Generated by the Proposed Residential Development

ITE LAND USE			MORNING PEAK HOUR			AFTERNOON PEAK HOUR		
			In	Out	Total	In	Out	Total
Step 1: ITE Trip Generation Rates								
210 – Single Family Homes	Units	116	0.20	0.58	0.78	0.66	0.38	1.04
230 – Condo / Townhomes	Units	92	0.09	0.43	0.52	0.41	0.20	0.61
520 – Elementary School	1000's sq. ft.	30	2.91	2.29	5.20	0.54	0.67	1.21
Step 2: Conversion from Auto Trips to Person Trips								
210 – Single Family Homes	Trip Gen		23	68	91	76	44	120
	Transit Share	10%	2	7	9	8	4	12
	Auto Occupancy	1.1	2	7	9	8	4	12
	Total Person Trips		27	82	109	92	52	144
230 – Condo / Townhomes	Trip Gen		8	40	48	38	18	56
	Transit Share	10%	1	4	5	4	2	6
	Auto Occupancy	1.1	1	4	5	4	2	6
	Total Person Trips		10	48	58	46	22	68
520 – Elementary School	Trip Gen		88	69	157	16	20	36
	Transit Share	10%	9	7	16	2	2	4
	Auto Occupancy	1.1	9	7	16	2	2	4
	Total Person Trips		106	83	189	20	24	44

ITE LAND USE			MORNING PEAK HOUR			AFTERNOON PEAK HOUR		
			In	Out	Total	In	Out	Total
Step 3: Person Trips by Modal Share								
210 – Single Family Homes	Auto	90%	24	74	98	83	47	130
	Passenger / Active Modes	10%	3	8	11	9	5	14
230 – Condo / Townhomes	Auto	90%	9	43	52	41	20	61
	Passenger / Active Modes	10%	1	5	6	5	2	7
520 – Elementary School	Auto	90%	95	75	170	18	22	40
	Passenger / Active Modes	10%	11	8	19	2	2	4
Step 4: Internal Capture Trips								
210 – Single Family Homes	Auto Trips		24	74	98	83	47	130
	Internal Capture	0%	0	0	0	0	0	0
	Net New Auto Trips		24	74	98	83	47	130
230 – Condo / Townhomes	Auto Trips		9	43	52	41	20	61
	Internal Capture	0%	0	0	0	0	0	0
	Net New Auto Trips		9	43	52	41	20	61
520 – Elementary School	Auto Trips		95	75	170	18	22	40
	Internal Capture	70%	67	53	120	13	15	28
	Net New Auto Trips		28	22	50	5	7	12
Step 5: Net New Auto Trips								
Total Development	Auto Trips		128	192	320	142	89	231
	Internal Capture		67	53	120	13	15	28
	Net New Auto Trips		61	139	200	129	74	203

3.4.2 Conversion of ITE Rates to Person Trips

The notion of quantifying the volume of "person" trips expected to be generated by a given development is becoming a commonly accepted practice. It is aimed at quantifying the expected demands across the primary modes of transportation.

In order to convert ITE rates to person trips, the rates obtained from the ITE Trip Generation Manual were adjusted to account for the transit modal share and auto occupancy thought to be inherent within the ITE rates. An assumed transit share of 10% was thought to be inherent within the ITE rates and an auto occupancy rate of 1.1 persons per vehicle was also assumed to be inherent within the ITE rates.

Step 2 of **Table 3** outlines the conversion from auto trips to person trips.

3.4.3 Net New Site Trips

To reflect Barrhaven South travel characteristics, the person trips were assigned to the four primary modal shares (i.e. auto, passenger, transit, and active moves). Based on the lack of transit service and active modes facilities in the immediate study area, it was assumed that the auto modal share will be 90%, with the remaining 10% encompassing passenger, transit, and active modes. The proposed development is anticipated to generate 356 and 256 person trips during the AM and PM peak hours, respectively. In terms of vehicle trips, the proposed development is anticipated to generate 200 and 203 net new auto trips (two-way) during the AM and PM peak hours, respectively.

Step 3 of **Table 3** summarizes the expected person trips by modal share.

3.4.4 Internal Capture

When predicting trips that are associated with different land use types the interaction between those land use types must be accounted for by applying the principals of internal capture adjustments. Internal capture trips are trips which are shared between two or more uses within a given area. A portion of the generated trips for each individual land use is therefore drawn from the adjacent land uses. Internal capture adjustments were made to account for vehicles that visit more than one land use within the subject development. Since these trips are contained within the development area, accounting for each trip separately on the roadway network would result in "double-counting". For this reason, complementary land uses ultimately had their net new trips adjusted to reflect these synergies.

As the catchment area of the elementary school will largely consist of the subject development, the majority of the trips that the elementary school will generate will originate from the immediate area. For this reason, the elementary school was assumed to have an internal capture rate of 70%.

Step 4 of **Table 3** summarizes the internal capture trips for the subject development and Step 5 summarizes the net new auto trips.

3.4.5 Traffic Distribution and Assignment

The distribution of traffic to / from the study area was determined through examination of the TRANS Committee's 2011 Origin-Destination (O-D) Survey for the South Nepean District.

Table 4 provides a summary of the estimated distribution for the traffic generated by the proposed development.

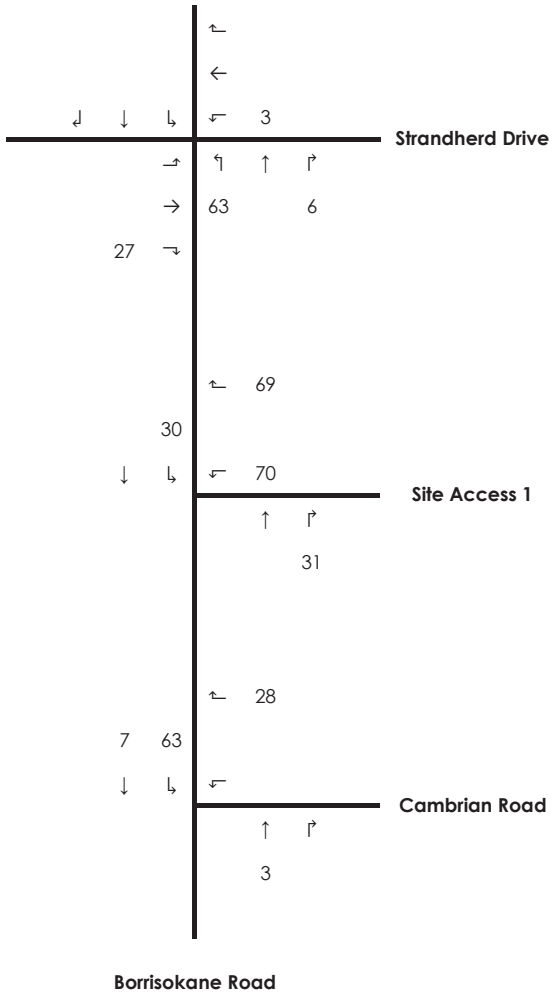
The anticipated site traffic generated by the proposed residential development was assigned to the boundary road network using a logical pattern of primary roads (i.e. along arterials and collectors) which can be seen in **Table 4** below.

Table 4 Traffic Distribution from the South Nepean District

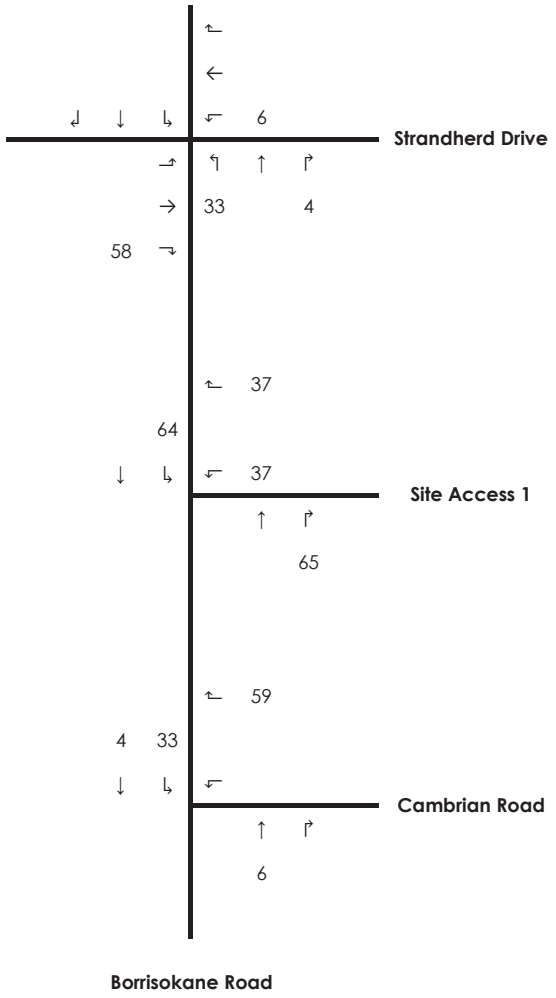
CARDINAL DIRECTION	VIA (TO / FROM)			
	% Distribution	Borrisokane North	Borrisokane South	Existing Greenbank North
North	25%	20%		5%
East	25%	12.5%		12.5%
South	5%		5%	
West	5%	5%		
Internal (South Nepean)	40%	12%		28%
Total	**100%**	**49.5%**	**5%**	**45.5%**

Figure 8 illustrates the assignment of total site traffic volumes to the boundary road network.

AM Peak Hour



PM Peak Hour



Stantec

Glenview

3387 Borrisokane Road

Figure 8: 3387 Borrisokane Road Site Traffic

Table 3 Trips Generated by the Proposed Development

Step 1: ITE Trip Generation Rates									
Land Parcel	**Land Use Code**	**Units / GFA (1000's SF)**	**AM Peak Hour**			**PM Peak Hour**		
			Inbound	**Outbound**	**Rate**	**Inbound**	**Outbound**	**Rate**
Residential - Singles	210 - Single Detached Houses	552	25%	75%	0.72	63%	37%	0.89
Residential - Towns	230 - Residential Condo / Townhouse	464	17%	83%	0.38	67%	33%	0.46
Commercial	820 - Shopping Centre	35	62%	38%	2.36	48%	52%	8.50

Step 2: Conversion to Person Trips								
Land Parcel	**Land Use Code**		**AM Peak Hour**			**PM Peak Hour**		
			Inbound	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Residential - Singles	210 - Single Detached Houses	Trip Gen	99	297	396	308	181	489
		Transit Share 10%	10	30	40	31	18	49
		Auto Occupancy 1.1	10	30	40	31	18	49
		Total Person Trips	119	357	476	370	217	587
Residential - Towns	230 - Residential Condo / Townhouse	Trip Gen	30	146	176	142	70	212
		Transit Share 10%	3	15	18	14	7	21
		Auto Occupancy 1.1	3	15	18	14	7	21
		Total Person Trips	36	176	212	170	84	254
Commercial	820 - Shopping Centre	Trip Gen	51	31	82	141	153	294
		Transit Share 10%	5	3	8	14	15	29
		Auto Occupancy 1.1	5	3	8	14	15	29
		Total Person Trips	61	37	98	169	183	352

Step 3: Modal Share Adjustments								
Land Parcel	**Land Use Code**		**AM Peak Hour**			**PM Peak Hour**		
			Inbound	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Residential - Singles	210 - Single Detached Houses	Auto 60%	71	214	285	222	130	352
		Passenger 10%	12	36	48	37	22	59
		Transit 30%	36	107	143	111	65	176
		Walk / Bike 0%	0	0	0	0	0	0
Residential - Towns	230 - Residential Condo / Townhouse	Trip Gen 60%	21	105	126	102	50	152
		Transit Share 10%	4	18	22	17	8	25
		Auto Occupancy 30%	11	53	64	51	26	77
		Total Person Trips 0%	0	0	0	0	0	0
Commercial	820 - Shopping Centre	Auto 60%	37	22	59	101	110	211
		Passenger 10%	6	4	10	17	18	35
		Transit 30%	18	11	29	51	55	106
		Walk / Bike 0%	0	0	0	0	0	0

Step 4: Pass-By and Internal Capture								
Land Parcel	**Land Use Code**		**AM Peak Hour**			**PM Peak Hour**		
			Inbound	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Residential - Singles	210 - Single Detached Houses	Auto Trips	71	214	285	222	130	352
		Pass-By 0	0	0	0	0	0	0
		Internal Capture 0	0	0	0	0	0	0
		Net New Auto Trips	71	214	285	222	130	352
Residential - Towns	230 - Residential Condo / Townhouse	Auto Trips	21	105	126	102	50	152
		Pass-By 0	0	0	0	0	0	0
		Internal Capture 0	0	0	0	0	0	0
		Net New Auto Trips	21	105	126	102	50	152
Commercial	820 - Shopping Centre	Auto Trips	37	22	59	101	110	211
		Pass-By 15	15	30	53	53	106	106
		Net New Auto Trips	22	7	30	48	57	106

Step 5: Net New Auto Trips							
Land Parcel	**Land Use Code**	**AM Peak Hour**			**PM Peak Hour**		
		Inbound	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Residential		92	319	411	324	180	504
Commercial		22	7	30	48	57	106

3.3.2 Conversion of ITE Rates to Person Trips

The notion of quantifying the volume of "person" trips expected to be generated by a given development is becoming a commonly accepted practice. It is aimed at quantifying the expected demands across the primary modes of transportation.

In order to convert ITE rates to person trips, the rates obtained from the ITE Trip Generation Manual were adjusted to account for the transit modal share and auto occupancy thought to be inherent within the ITE rates. An assumed transit share of 10% was thought to be inherent within the ITE rates and an auto occupancy rate of 1.1 persons per vehicle was also assumed to be inherent within the ITE rates. The proposed development is anticipated to generate 786 and 1193 person trips during the AM and PM peak hours, respectively.

Step 2 of **Table 3** outlines the conversion from auto trips to person trips.

3.3.3 Modal Share Adjustments

To reflect local Ottawa travel characteristics, the person trips were assigned to the four primary modal shares (i.e. auto, passenger, transit, and active moves) according to the TRANS Committee's 2011 Origin-Destination (O-D) Survey for the South Nepean District. In terms of auto trips, the proposed development is anticipated to generate 470 and 715 auto trips (two-way) during the AM and PM peak hours, respectively.

Step 3 of **Table 3** summarizes the expected person trips by modal share.

3.3.4 Pass-By Trips

Pass-by trips are considered intermediate stops between an origin and a destination. They are site trips that are drawn from existing traffic volumes on the road network that are "passing-by" the site. While the total number of trips generated by a given development remains the same, the turning movements at study area intersections / site accesses require adjustments to reflect pass-by traffic. The rate of pass-by traffic is based on the specific land use, and in this case, a pass-by rate was applied to the commercial portion of the development. As outlined in the *ITE Trip Generation Manual*, the pass-by rate for a commercial development of approximately 35,000 ft^2 is 50%.

Following the application of the pass-by rates, the proposed development is expected to generate approximately 441 and 610 net new auto trips (two-way) during the AM and PM peak hours, respectively.

Step 4 of **Table 3** summarizes the expected pass-by trips.

Figure 7 illustrates the site trips the proposed development is anticipated to generate prior to accounting for pass-by trips.

Figure 8 illustrates the pass-by trips the proposed development is anticipated to generate.

3.3.5 Traffic Distribution and Assignment

The distribution of traffic to / from the study area was determined through examination of the TRANS Committee's *2011 Origin-Destination (O-D) Survey* for the South Nepean District.

Table 4 and **Table 5** provide a summary of the estimated distribution for the traffic generated by the proposed development.

The anticipated site traffic generated by the proposed development was assigned to the boundary road network using a logical pattern of primary roads (i.e. along arterials and collectors) and in consideration of the future road network (i.e. the future Realigned Greenbank Road) which can be seen in both tables below.

Table 4 Residential Traffic Distribution from the South Nepean District

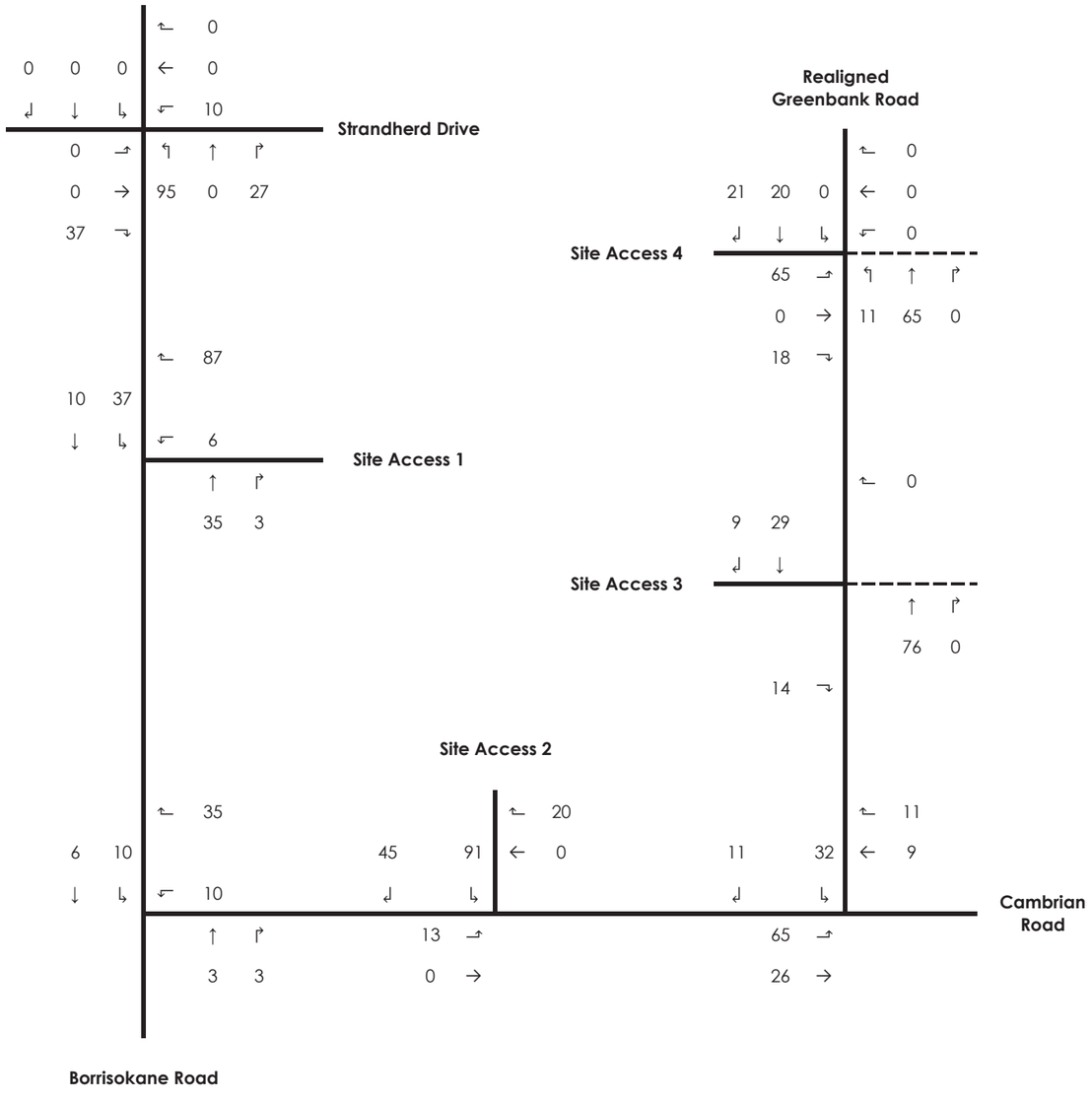
Cardinal Direction	Via (to / from)				
	% Distribution	Borrisokane North	Borrisokane South	Cambrian Road East	Realigned Greenbank North
North	25%	10%			15%
East	25%	12.5%		7.5%	5%
South	5%		5%		
West	5%	4.5%			0.5%
Internal (South Nepean)	40%	10%		10%	20%
Total	100%	37%	5%	17.5%	40.5%

Table 5 Commercial Traffic Distribution from the South Nepean District

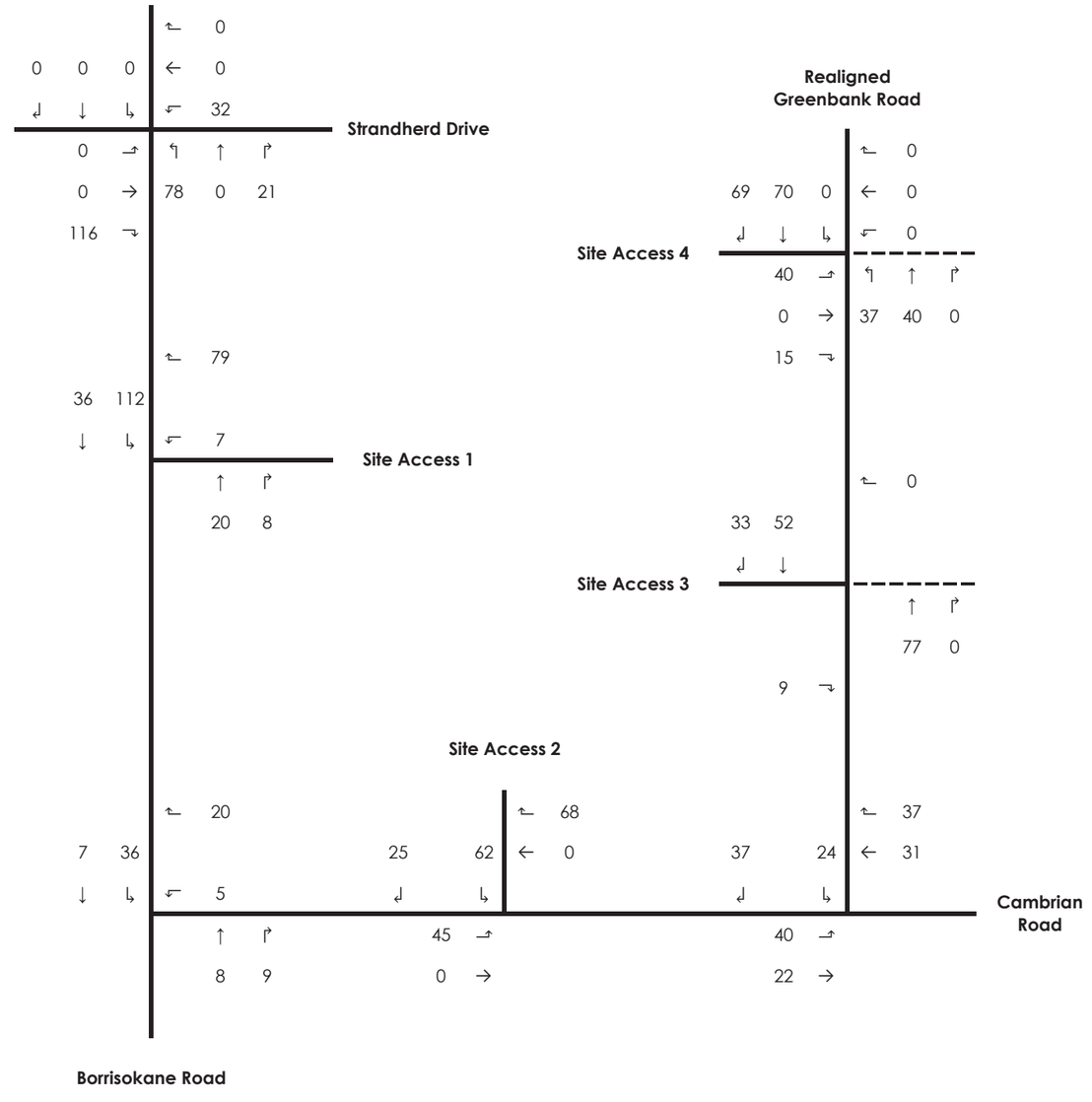
Cardinal Direction	Via (to / from)				
	% Distribution	Borrisokane North	Borrisokane South	Cambrian Road East	Realigned Greenbank North
North	25%	22.5%			2.5%
East	25%	12.5%		7.5%	5%
South	5%		5%		
West	5%	5%			
Internal (South Nepean)	40%	16%		16%	8%
Total	100%	56%	5%	23.5%	15.5%

Figure 9 illustrates the net new site traffic volumes for the proposed development.

AM Peak Hour



PM Peak Hour



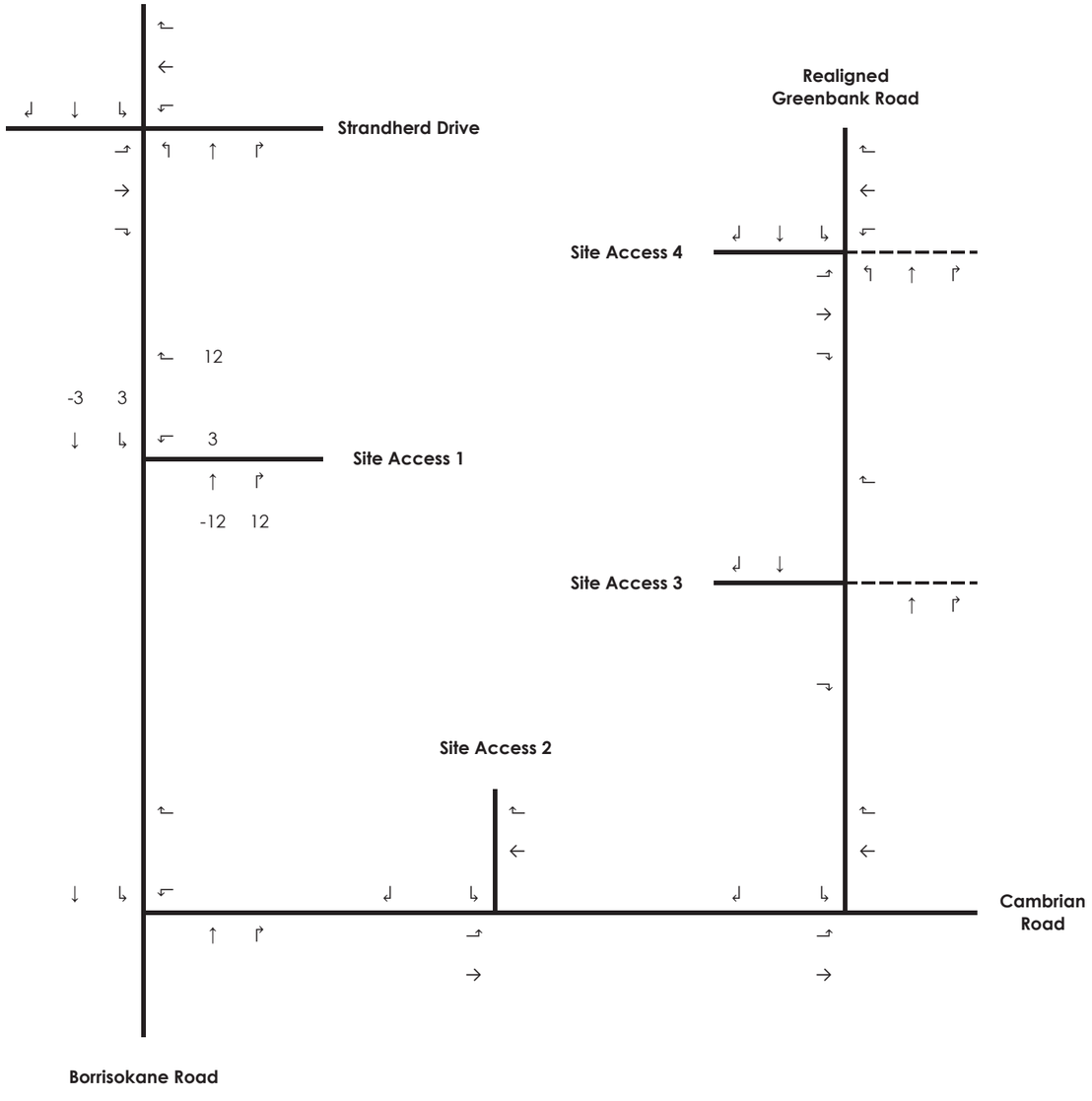
Stantec

Mattamy Homes

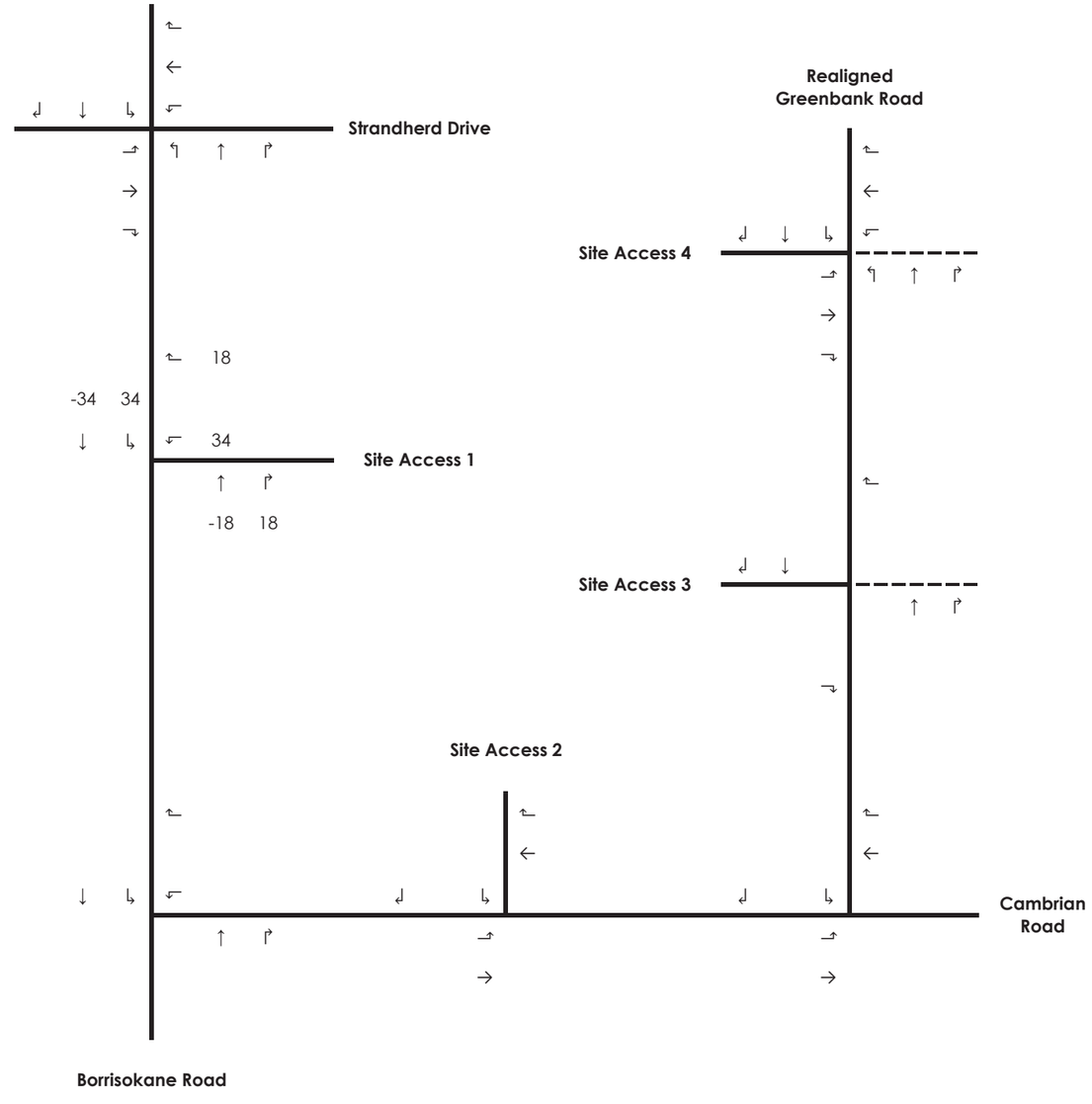
Half Moon Bay West

Figure 7: Site Traffic Volumes

AM Peak Hour



PM Peak Hour



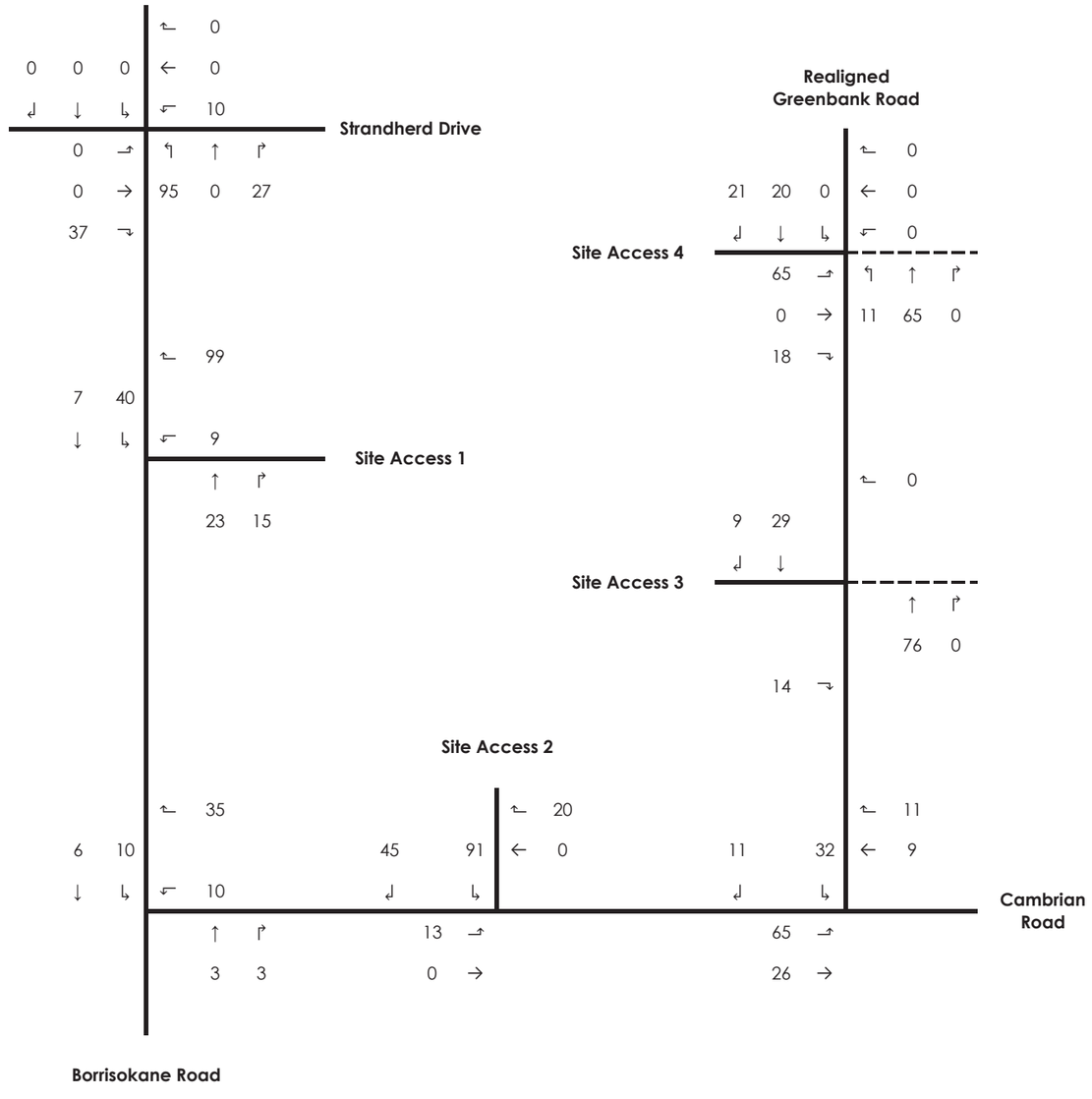
Stantec

Mattamy Homes

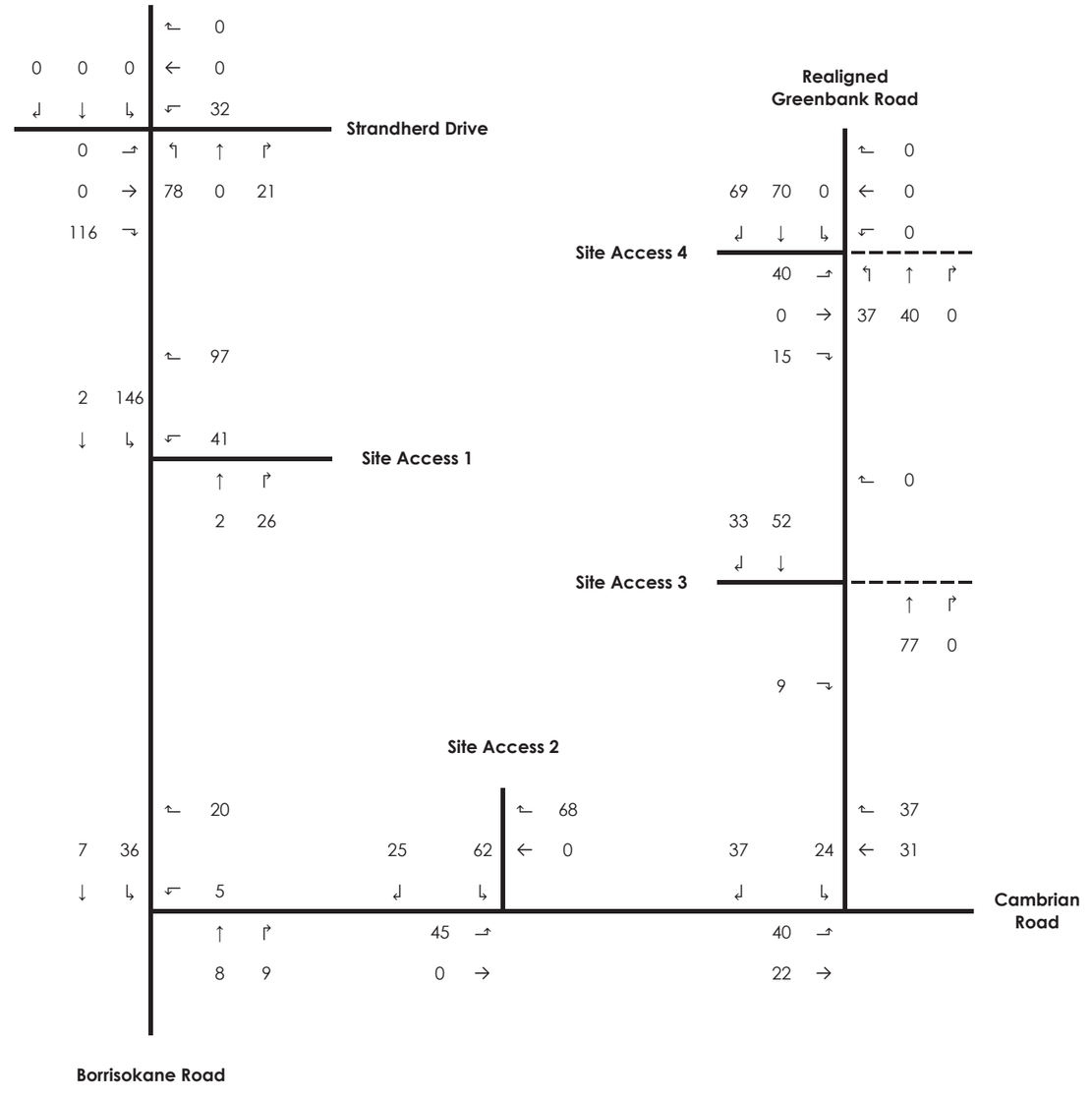
Half Moon Bay West

Figure 8: Pass-By Traffic Volumes

AM Peak Hour



PM Peak Hour

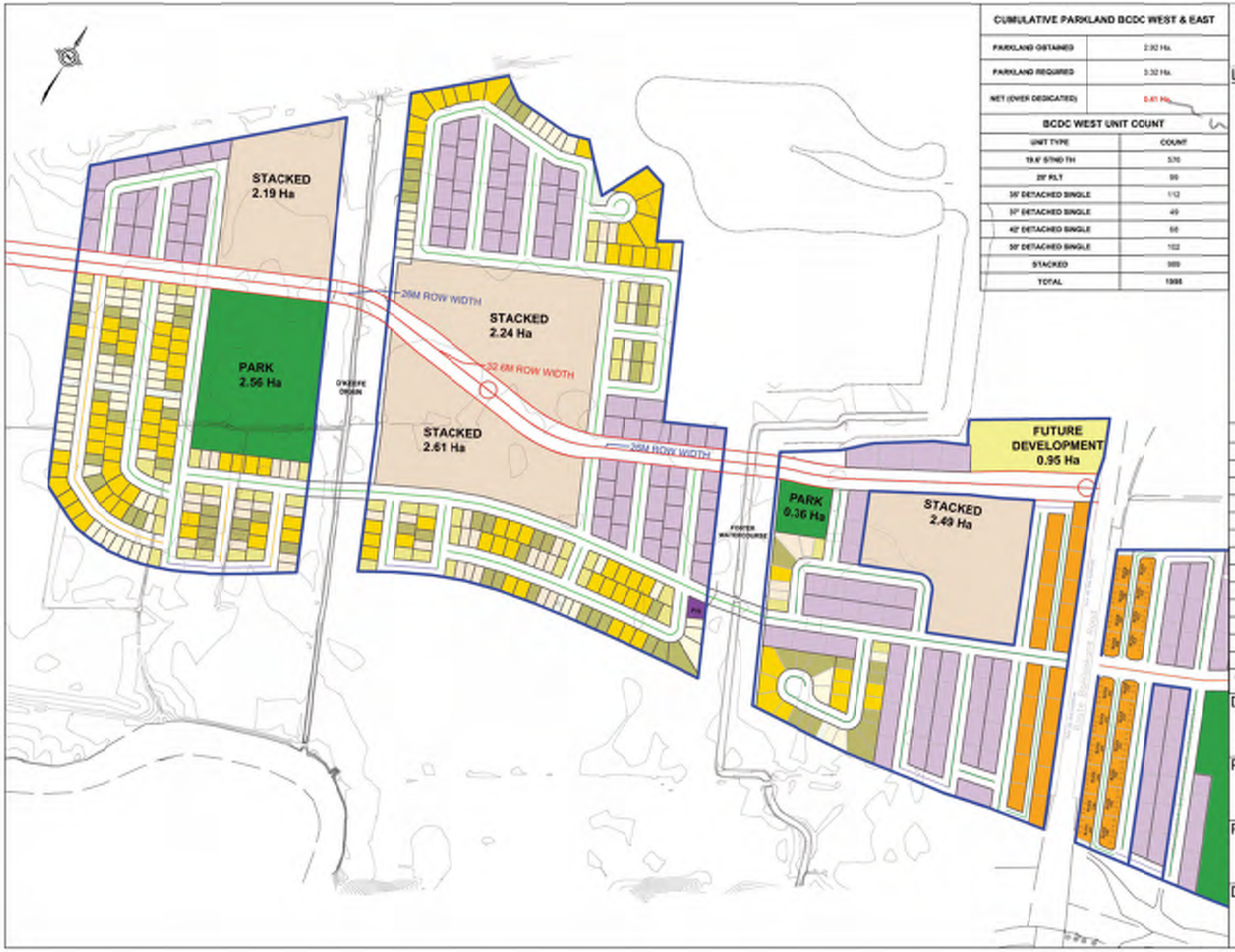


Stantec

Mattamy Homes

Half Moon Bay West

Figure 9: Net New Site Traffic Volumes



CUMULATIVE PARKLAND BCDC WEST & EAST	
PARKLAND OBTAINED	2.92 Ha.
PARKLAND REQUIRED	3.32 Ha.
NET (OVER DEDICATED)	0.41 Ha.

BCDC WEST UNIT COUNT	
UNIT TYPE	COUNT
19.8' STND TH	570
20' RLT	99
35' DETACHED SINGLE	113
37' DETACHED SINGLE	49
42' DETACHED SINGLE	55
50' DETACHED SINGLE	102
STACKED	989
TOTAL	1995

CAIVAN

LEGEND:

- 19.8' STANDARD TOWNHOME
- 20' RLTH
- 35' DETACHED SINGLE
- 37' DETACHED SINGLE
- 42' DETACHED SINGLE
- 50' DETACHED SINGLE
- STACKED CONDO BLOCK
- FUTURE DEVELOPMENT
- PARKS
- PUMP STATION
- WALKWAY/SERVICING BLOCK
- 8.5m LANE
- 14.75m ROW (WINDOW)
- 16.50m ROW
- 18.0m ROW
- PHASE BOUNDARY

LOT COUNT	
UNIT TYPE	COUNT
RLT	99
STND TH	570
DETACHED SINGLE	331
STACKED	989
TOTAL	1995

REV #	DESCRIPTION	DATE
7	Update for pre-con DWG Sk-22 now Sk-22.1	2024-02-21
6	Updated STND TH to new 19.8' TH	2024-01-18
5	Plans updated to incorporate BCDC East	2024-01-12
4	Updated BRT plan w/ Stacked Product	2024-01-10
3	Updated BRT Alignment	2023-12-19
2	1st Rev. OP Comments	2022-07-21
1	Revised Jock River Boundary Line	2022-04-19

DATE: 2024-02-23

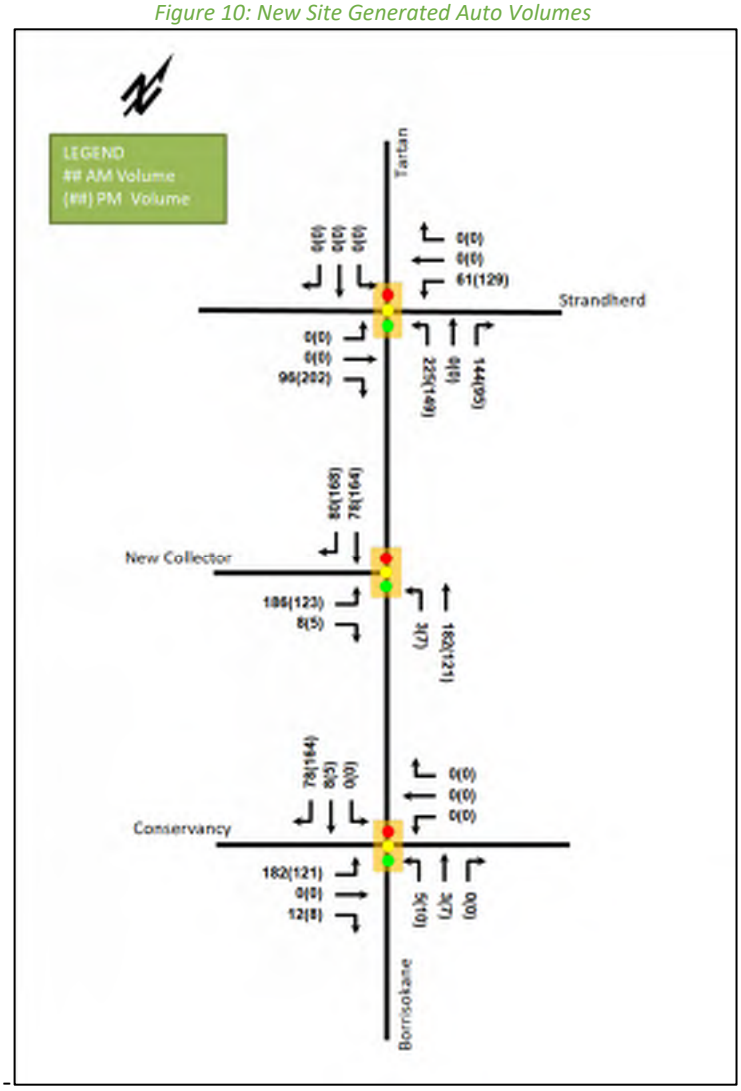
DRAWN BY: LV

PROJECT NO.: OTL400.3

PROJECT NAME: CONSERVANCY WEST

DRAWING #: SK-22.1_SK-8.3

Figure 10: New Site Generated Auto Volumes



5 Exemption Review

Table 14 summarizes the exemptions for this TIA.

Table 14: Exemption Review

Module	Element	Explanation	Exempt/Required
Site Design and TDM			
4.1 Development Design	4.1.2 Circulation and Access	Only required for site plan and zoning by-law applications	Exempt
	4.1.3 New Street Networks	Only required for plans of subdivision	Required
4.2 Parking	4.2.1 Parking Supply	Only required for site plan and zoning by-law applications	Exempt
4.3 Boundary Street Design		All applications	Required
4.5 Transportation Demand Management	All Elements	Only required when the development generates more than 60 person-trips	Required

Figure 2: Concept Plan

Unit Type	Count	Percent
Singles	103	19.5%
Executive Towns	262	49.5%
Avenue Towns	158	29.9%
Units from Land Swap	6	1.1%
Total	529	100.0%

Legend

- 28' Single Family Homes
- 36' Single Family Homes
- 43' Single Family Homes
- Executive Towns
- Avenue Towns
- Storm Water Management (SWM) Pond
- Parkland
- Natural Feature | Area within Floodplain
- Open Space / Pathways
- Property Boundary
- Mattamy to Minto Land Exchange
- Minto to Mattamy Land Exchange

Notes:

Parkland Required = 0.88 ha

MISSING 0.03 ha

No.	Description	Date	By
3	Change in Lotting	6/28/2023	E.H
2	Land Exchange Edits	6/20/2023	E.H
1	Executive Town Depth Adjustment	6/14/2023	E.H
0	Issued for Review	5/3/2023	D.F

Revisions

Title: **Concept Plan 44**

Project: **Kennedy Lands**

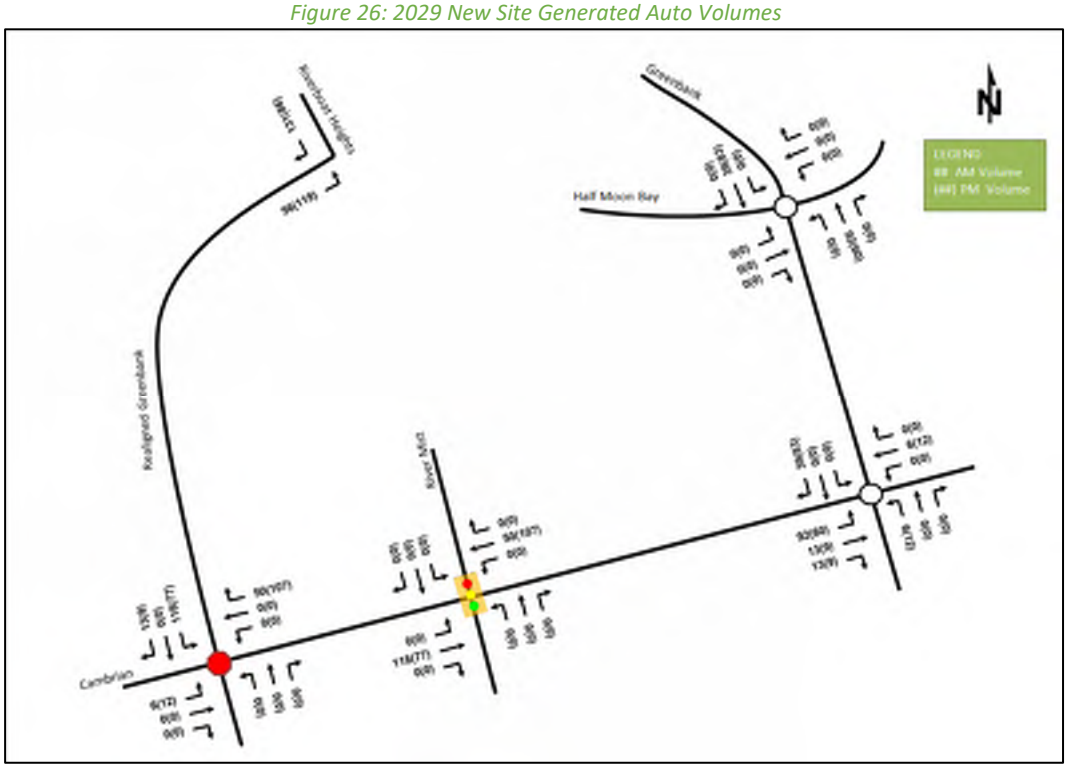
North

Scale: **NTS**

Drawn By: D.F.
Checked By: C.S.

Minto Communities Inc
180 Kent Street,
Ottawa, ON
K1P 0B6

Figure 26: 2029 New Site Generated Auto Volumes



6 Background Network Travel Demands

6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3.1. The additional capacity provided by these plans will improve the level of service in the study area road network, but these changes are not part of the 10-year affordable network. To support the proposed development and minimize the impact on the adjacent developments to the east, a temporary connection from the site access at River Boat Heights will be extended down to Cambrian Road. This road connection will be built along the Realigned Greenbank Road corridor. No access from the east side would be provided in order to prevent traffic from the proposed development cutting through the existing developments. This work should be coordinated with the ongoing Realigned Greenbank Road detail design to minimize throwaway. The 2029 Future background volume at the intersection of realigned Greenbank Road and Cambrian Road were acquired from the adjacent Half Moon Bay West Community development TIA (Stantec, 2016).

6.2 Background Growth and Other Developments

Surrounding development Traffic Impact Assessments have used a 2% traffic growth within the study area of this report. As such, an annual background growth of 2% will be used in order to remain consistent with these studies.

The background developments explicitly considered in the background conditions include:

- Half Moon Bay West Community
- 2444 Watercolours Way
- 3831 Cambrian Road
- 3718 Greenbank Road
- The Meadows Phase 4

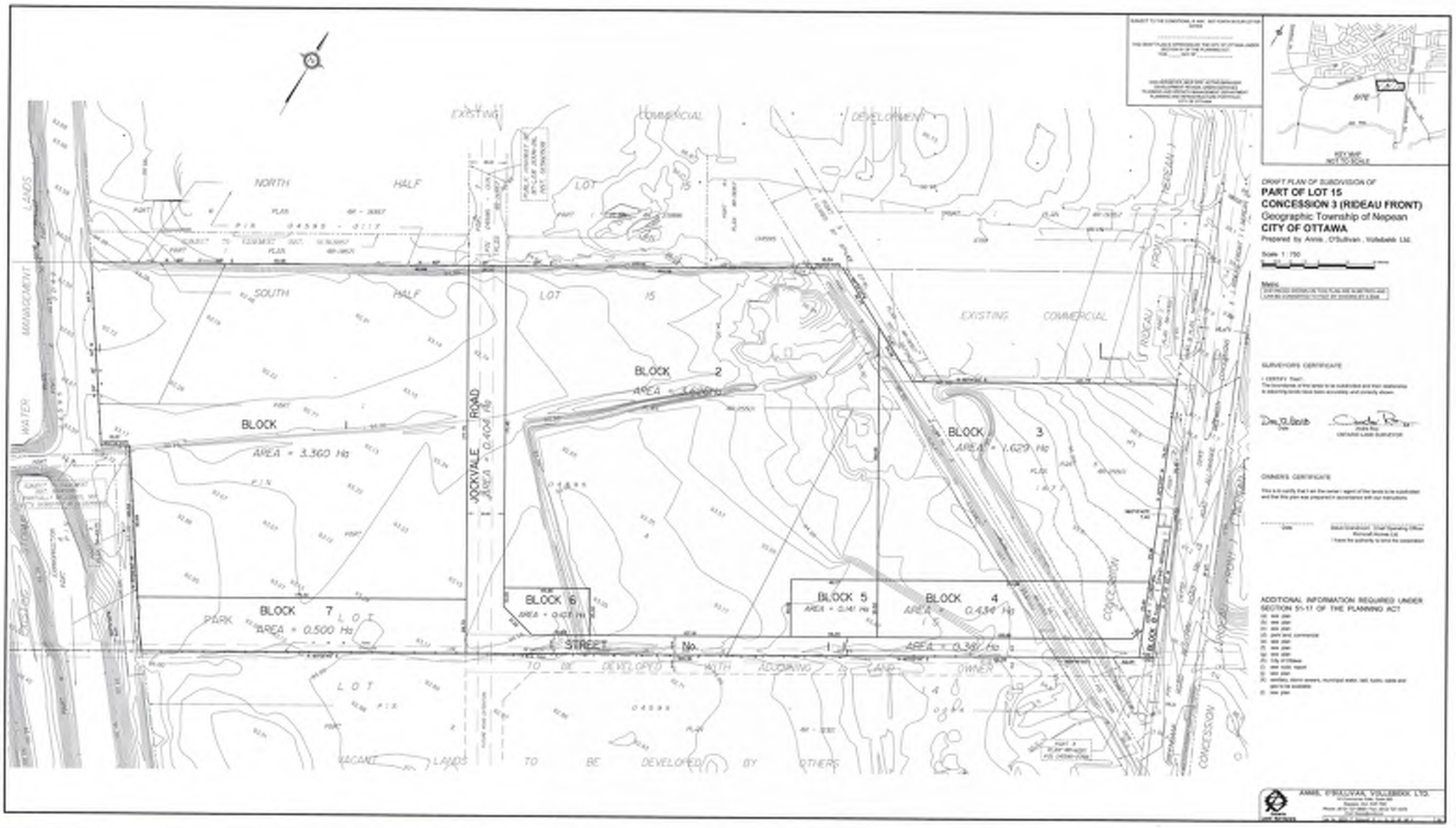

EXISTING COMMERCIAL DEVELOPMENT
NORTH HALF LOT 15
SOUTH HALF LOT 15
EXISTING COMMERCIAL
WATER MANAGEMENT LANDS
JOCKVALE ROAD
BLOCK 1
AREA = 3.360 Ha
BLOCK 2
AREA = 3.440 Ha
BLOCK 3
AREA = 1.629 Ha
BLOCK 4
AREA = 0.434 Ha
BLOCK 5
AREA = 0.141 Ha
BLOCK 6
AREA = 0.021 Ha
BLOCK 7
AREA = 0.500 Ha
PARK
STREET No. 1
AREA = 0.387 Ha
TO BE DEVELOPED WITH ADJOINING LAND OWNER
VACANT LANDS TO BE DEVELOPED BY OTHERS
CONCESSION
FRONT
RIDEAU
KEY MAP
NOT TO SCALE
DRAFT PLAN OF SUBDIVISION OF
PART OF LOT 15
CONCESSION 3 (RIDEAU FRONT)
Geographic Township of Nepean
CITY OF OTTAWA
Prepared by Annis, O'Sullivan, Vollebekk Ltd.
Scale 1 : 750
SURVEYOR'S CERTIFICATE
OWNER'S CERTIFICATE
ADDITIONAL INFORMATION REQUIRED UNDER SECTION 51-17 OF THE PLANNING ACT
ANNIS, O'SULLIVAN, VOLLEBEKK LTD.

Figure 10: New Site Generation Auto Volumes

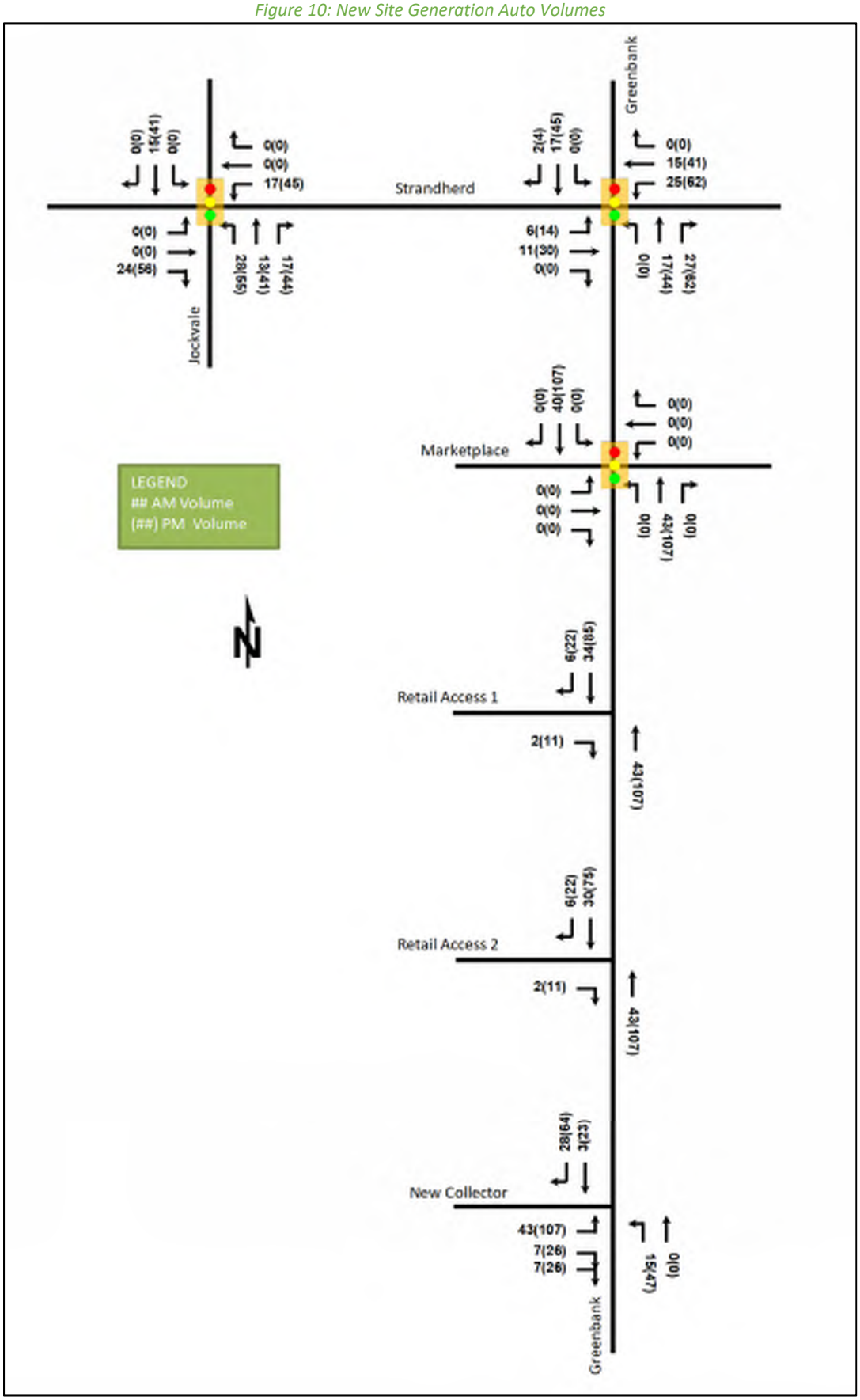
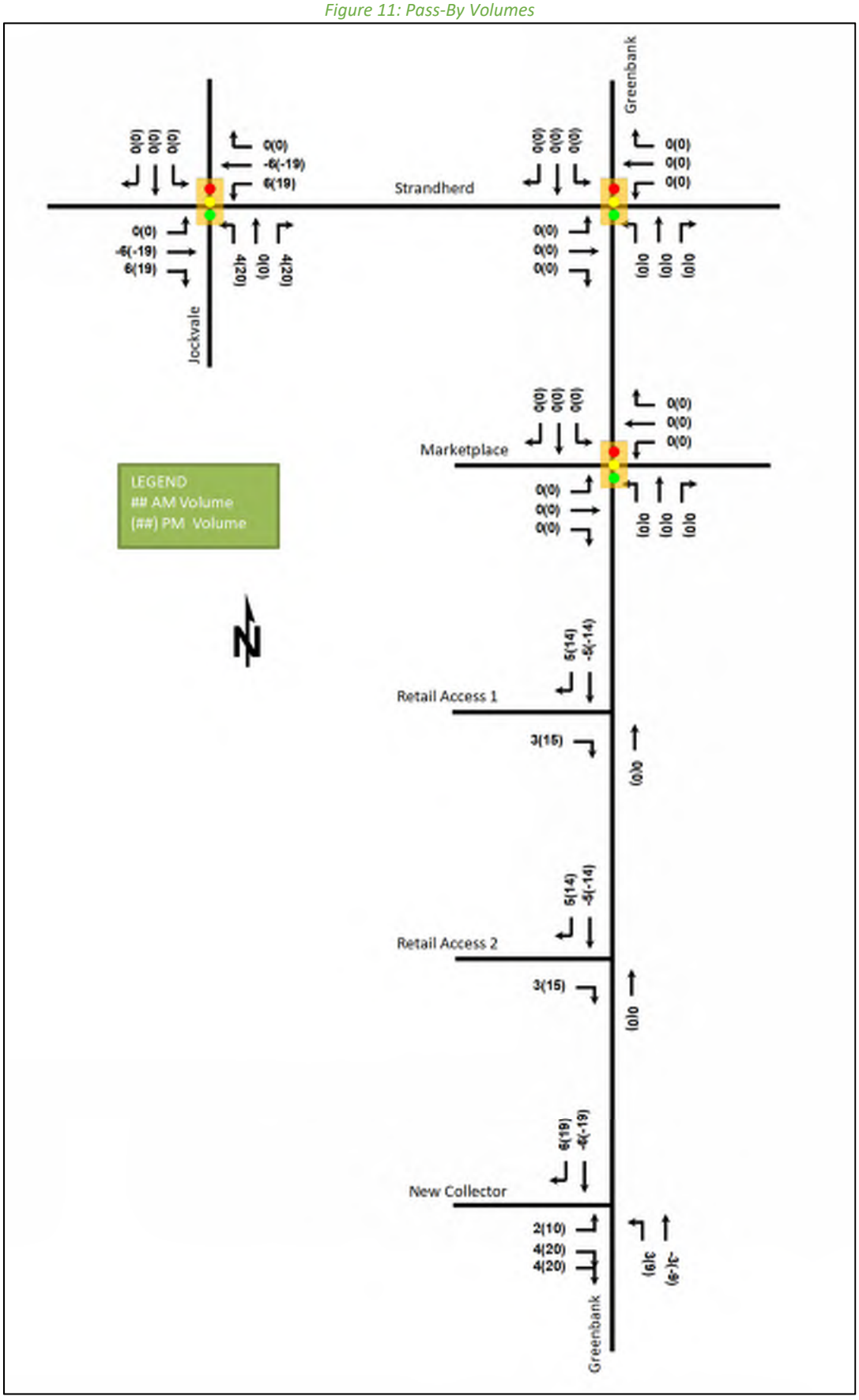
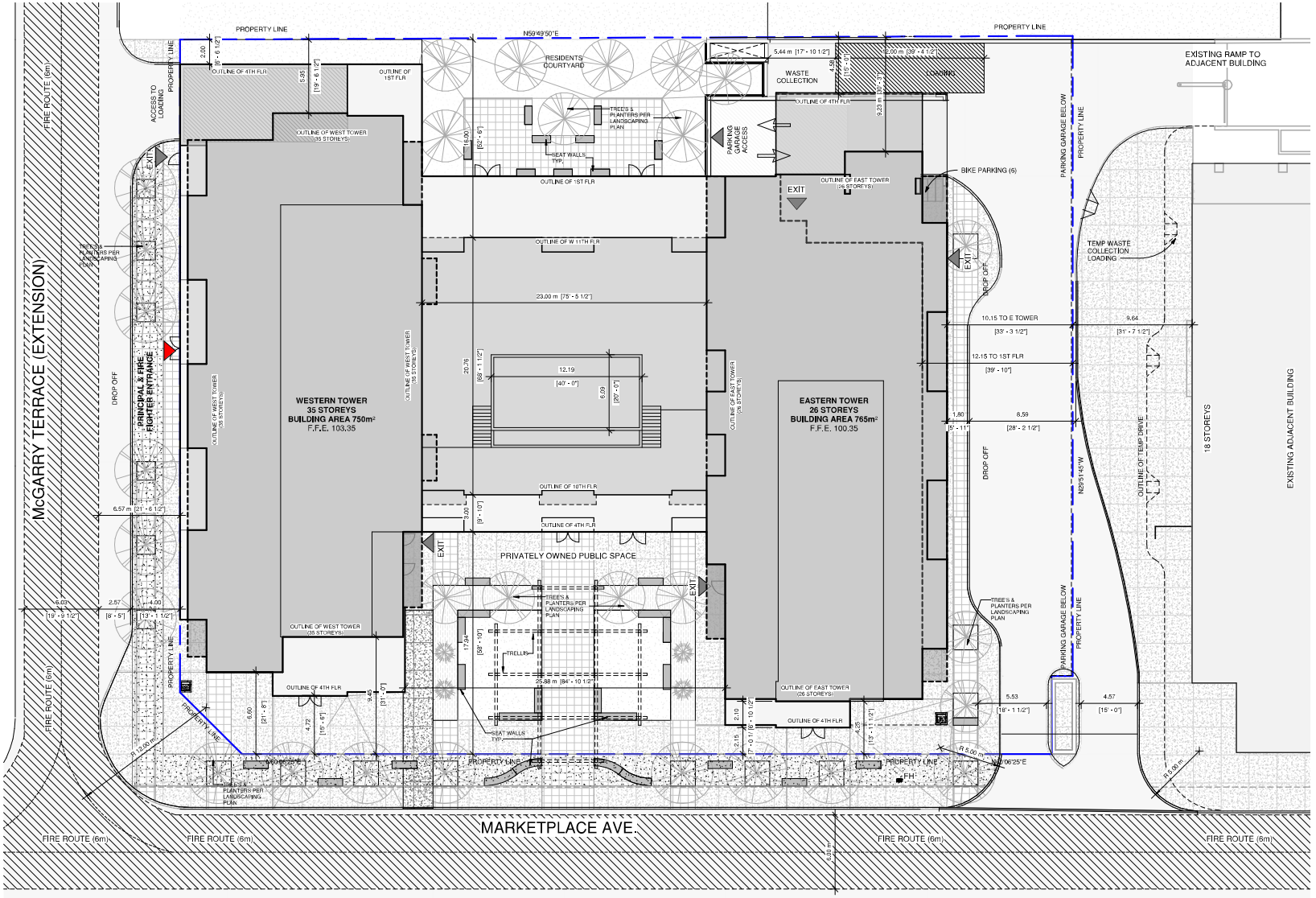
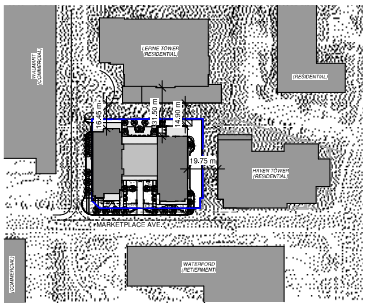


Figure 11: Pass-By Volumes





1 ARCHITECTURAL SITE PLAN
1 : 150



2 KEYPLAN
1 : 1500

PROGRESSIVE ARCHITECTS, LTD.
5255 COUNTY RD. 42, UNIT C, WINDSOR ON, N9C 0E1 TEL: 519-250-1007

rev.	date	issued for	rev.	date	issued for
8			16		
7			15		
6			14		
5			13		
4			12		
3			11		
2			10		
1			9		

project:
MARKET PLACE WEST

address: 1034 MCGARRY TERRACE, OTTAWA ON

sheet name:
ARCHITECTURAL SITE PLAN

project no.:
22-0039

sheet no.:
A001

5.4 Trip Assignment

Using the distribution outlined above, turning movement splits, and access to major transportation infrastructure, the trips generated by the site have been assigned to the study area road network. Table 15 summarizes the proportional assignment to the study area roadways. Figure 15 illustrates the new site-generated volumes, and Figure 16 illustrates the pass-by volumes.

Table 15: Trip Assignment

To/From	Inbound Via
North	35% Strandherd Drive (W) 10% Longfields Drive (N) 20% Strandherd Drive (E)
South	10% Longfields Drive (S)
East	10% Strandherd Drive (E) 5% Chapman Mills Drive (E)
West	10% Strandherd Drive (W)
Total	**100%**

Figure 15: New Site Generation Auto Volumes

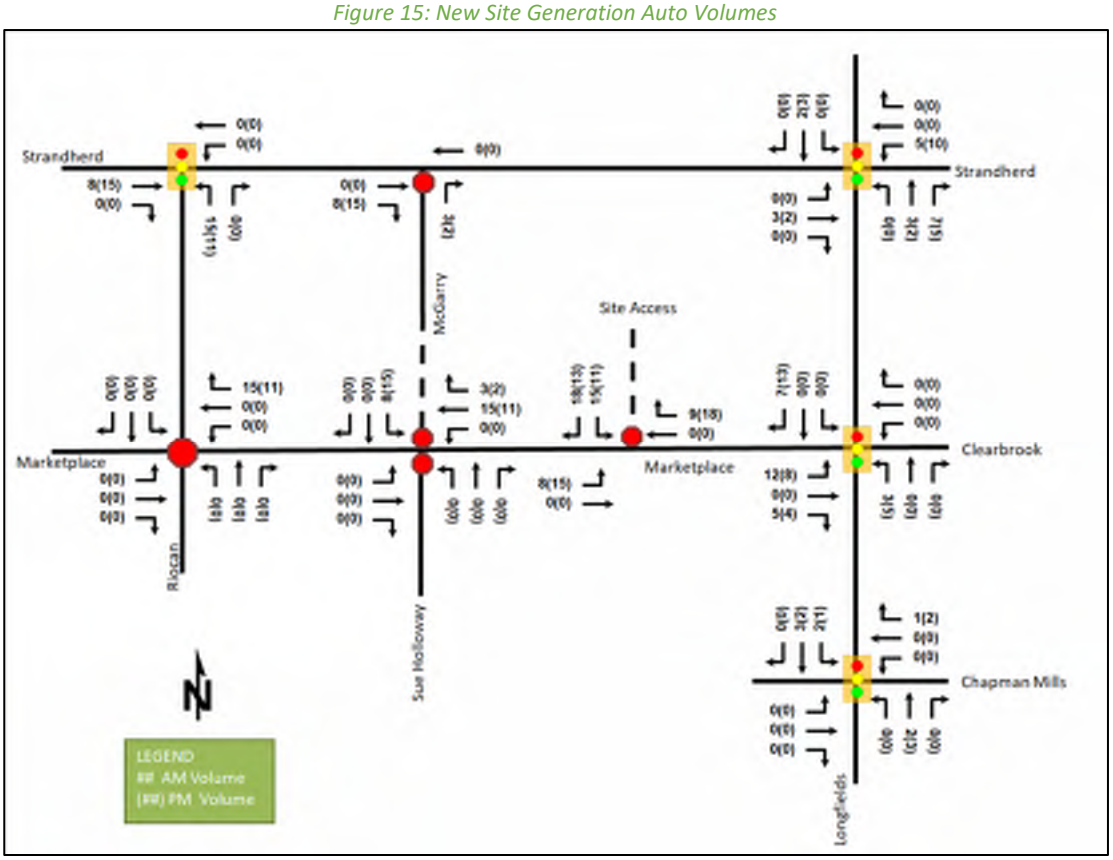
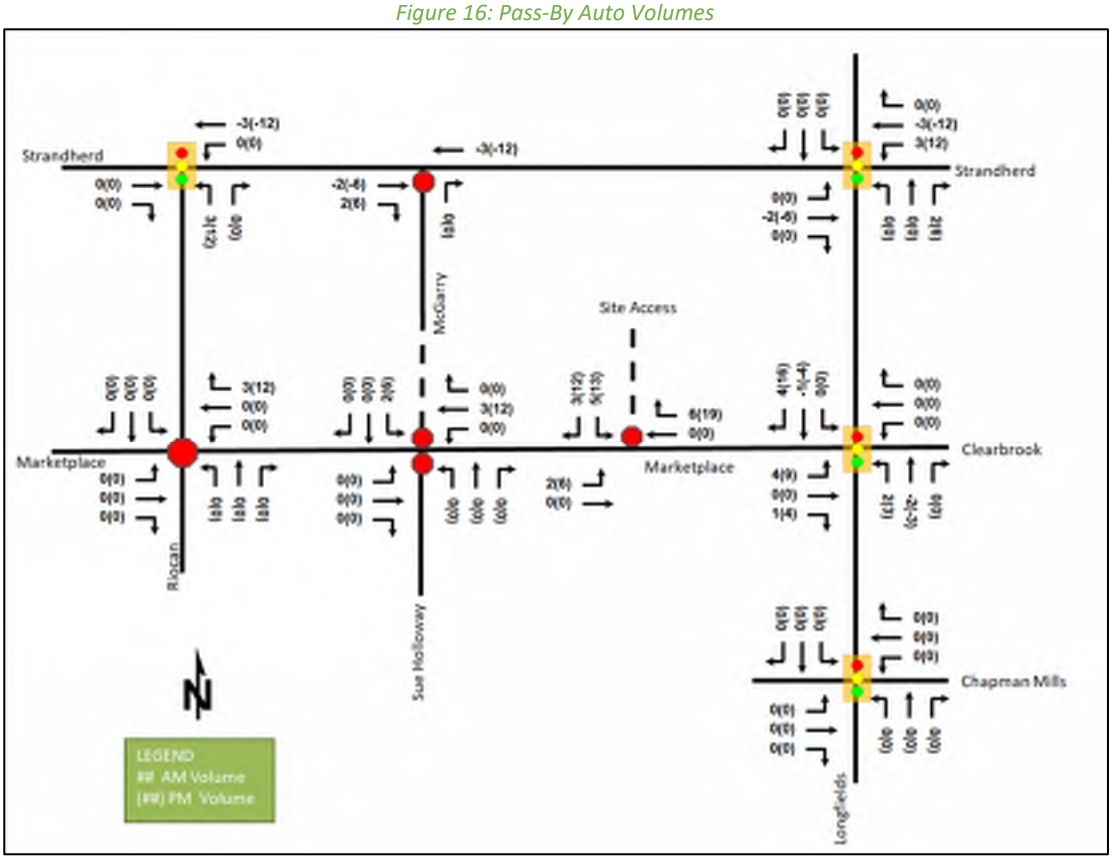


Figure 16: Pass-By Auto Volumes



6 Background Network Travel Demands

6.1 Transportation Network Plans

The transportation network plans were discussed in Section 2.3. The extension of Chapman Mills Drive from Longfields Drive to Greenbank Road is assumed to complete by 2031, although it will not impact the site-generated trips and trips distribution, the background volumes will be redistributed, and background volumes will be consistent with the study area TIAs. The projected associated redistribution of volumes is illustrated in Figure 17.

APPENDIX H

Signal Timing Plans

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

Intersection:	***Main:*** Strandherd	***Side:***	Helene Campbell
Controller:	**ATC3**	**TSD:**	**5319**
Author:	Hamadoun Issabre	**Date:**	27-Aug-2024

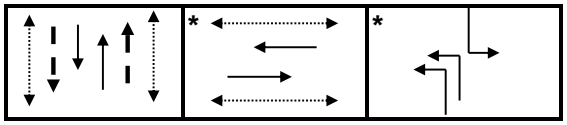
Existing Timing Plans†

	Plan						**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**Off Peak 2** 12	***Walk***	***DW***	***A+R***
Cycle	120	110	120	100	110	105			
Offset	73	108	85	X	108	X			
NB Thru	56	46	56	35	46	35	7	18	4.6+2.2
SB Thru	56	46	56	35	46	35	7	18	4.6+2.2
EB Thru	49	49	49	49	49	49	7	34	3.3+4.4
WB Thru	49	49	49	49	49	49	7	34	3.3+4.4
NB Left (fp)	15	15	15	16	15	21	-	-	4.6+2.3
SB Left (fp)	15	15	15	16	15	21	-	-	4.6+2.3

* Strandherd is considered as the NS corridor

Phasing Sequence‡

Plan: All



Notes: 1) In all plans; if the EW pedestrian phase and the WB Thru movement are not actuated; the EB Thru movement will force off after 10s green time

2) In plans 1, 2 & 4; if only the EW pedestrian phase is not actuated; the EW Thru movement will force off after 30s green time

Schedule

Weekday

Time	Plan
0:15	4
6:00	1
9:30	2
15:00	3
18:30	2
20:00	12
22:30	4

Weekend

Time	Plan
0:15	4
8:30	12
10:00	5
18:00	12
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

– – ► Bike signal

Cost is $62.38 ($55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

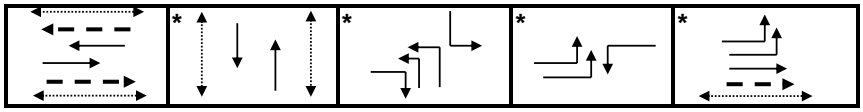
Intersection:	***Main:*** Strandherd	***Side:***	Fallowfield/Citigate
Controller:	**ATC 3**	**TSD:**	**6252**
Author:	Hamadoun Issabre	**Date:**	29-Apr-2024

Existing Timing Plans†

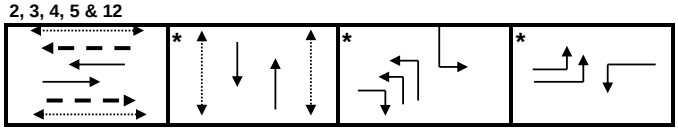
	Plan						**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**Evening** 12	***Walk***	***DW***	***A+R***
Cycle	120	110	120	110	110	120			
Offset	101	15	115	X	15	X			
EB Thru	46	31	34	30	31	30	7	16	4.6+2.3
WB Thru	31	31	34	30	31	30	7	16	4.6+2.3
NB Thru	48	48	48	48	48	48	7	34	3.7+3.3
SB Thru	48	48	48	48	48	48	7	34	3.7+3.3
NB *Left (fp)*	13	12	14	14	12	17	-	-	3.7+2.8
SB Left (fp)	13	12	14	14	12	17	-	-	3.7+2.8
EB Right	13	12	14	14	12	17	-	-	3.7+2.8
EB Left (fp)	28	19	24	18	19	25	-	-	4.6+2.5
WB Left (fp)	13	19	24	18	19	25	-	-	4.6+2.5

Phasing Sequence‡

Plan: 1



Plan: 2, 3, 4, 5 & 12



Note: 1) For all plans; if the NS pedestrian phase is not actuated; the NS Thru movement will force off after 15s

Schedule

Weekday

Time	Plan
0:15	4
6:00	1
9:30	2
15:00	3
18:30	2
20:00	12
22:30	4

Weekend

Time	Plan
0:15	4
8:30	12
10:00	5
18:00	12
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

Pedestrian signal

Bike signal

Cost is $62.38 ($55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

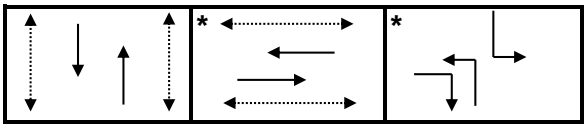
Intersection:	***Main:*** Strandherd	***Side:***	Kennevale
Controller:	**ATC 3**	**TSD:**	**6715**
Author:	Hamadoun Issabre	**Date:**	13-Mar-2024

Existing Timing Plans†

	Plan							**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**Evening** 12	**Heavy PM** 13	***Walk***	***DW***	***A+R***
Cycle	120	110	120	100	110	100	140			
Offset	29	93	57	X	93	X	57			
NB Thru	62	54	60	43	60	43	80	7	18	4.2+2.9
SB Thru	62	54	60	43	60	43	80	7	18	4.2+2.9
EB Thru	37	37	37	37	38	37	37	7	22	3.3+3.9
WB Thru	37	37	37	37	38	37	37	7	22	3.3+3.9
NB Left (fp)	21	19	23	20	12	20	23	-	-	4.2+3.2
SB Left (fp)	21	19	23	20	12	20	23	-	-	4.2+3.2
EB Right	21	19	23	20	12	20	23	-	-	4.2+3.2

Phasing Sequence‡

Plan: All



Schedule

Weekday

Time	Plan
0:15	4
6:00	1
9:30	2
15:00	3
15:30	13
18:00	3
18:30	2
20:00	12
22:30	4

Weekend

Time	Plan
0:15	4
8:30	12
10:00	5
18:00	12
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

Cost is $62.38 ($55.20 + HST)

Traffic Signal Timing

City of Ottawa, Public Works Department

Traffic Signal Operations Unit

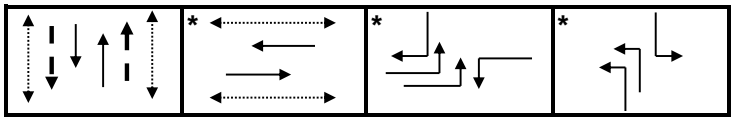
Intersection:	***Main:*** Strandherd	***Side:***	Maravista/Systemhouse
Controller:	**ATC3**	**TSD:**	**6728**
Author:	Hamadoun Issabre	**Date:**	13-Mar-2024

Existing Timing Plans†

	Plan						**Ped Minimum Time**		
	AM Peak 1	**Off Peak** 2	**PM Peak** 3	**Night** 4	**Weekend** 5	**Evening** 12	***Walk***	***DW***	***A+R***
Cycle	120	110	120	110	110	120			
Offset	83	0	82	X	0	X			
NB Thru	38	35	40	33	32	33	7	17	4.2+2.4
SB Thru	38	35	40	33	32	33	7	17	4.2+2.4
EB Thru	47	47	47	47	47	47	7	32	3.3+4.2
WB Thru	47	47	47	47	47	47	7	32	3.3+4.2
EB Left (fp)	20	13	15	15	13	20	-	-	3.3+3.9
WB Left (fp)	20	13	15	15	13	20	-	-	3.3+3.9
SB Right	20	13	15	15	13	20	-	-	3.3+3.9
NB Left (fp)	15	15	18	15	18	20	-	-	4.2+2.5
SB Left (fp)	15	15	18	15	18	20	-	-	4.2+2.5

Phasing Sequence‡

Plan: **All**



Notes: 1) In plan 1; if the EW pedestrian phase is not actuated; the EW Thru phase will force off after 20s
2) In plan 3; if the EW pedestrian phase is not actuated, the EW Thru phase will force off after 30s

Schedule

Weekday

Time	Plan
0:15	4
6:30	1
9:30	2
15:00	3
18:30	2
20:00	12
22:30	4

Weekend

Time	Plan
0:15	4
8:30	12
10:00	5
18:00	12
22:30	4

Notes

†: Time for each direction includes amber and all red intervals

‡: Start of first phase should be used as reference point for offset

Asterisk (*) Indicates actuated phase

(fp): Fully Protected Left Turn

◄·····► Pedestrian signal

▬ ▬ ► Bike signal

Cost is $62.38 ($55.20 + HST)

APPENDIX I

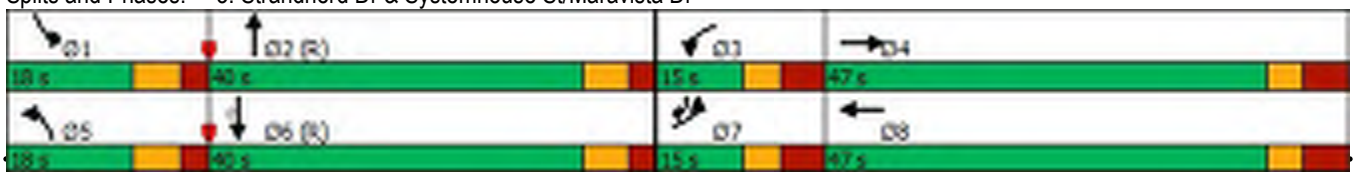
Detailed Analysis Reports

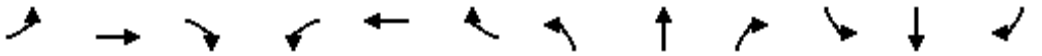
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	56	292	17	59	42	367	806	27	121	982	14
Future Volume (vph)	59	56	292	17	59	42	367	806	27	121	982	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.99		1.00	0.99		1.00	1.00		0.99		0.98
Frt		0.874			0.938			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1538	0	1695	1635	0	3257	3336	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3215	1538	0	1691	1635	0	3249	3336	0	1685	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		234			32			3				102
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	17		5	5		17	4		9	9		4
Confl. Bikes (#/hr)									2			2
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 (%)	2%	2%	2%	2%	2%	5%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	66	62	324	19	66	47	408	896	30	134	1091	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	386	0	19	113	0	408	926	0	134	1091	16
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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												

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	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	15.0	47.0		15.0	47.0		18.0	40.0		18.0	40.0	15.0
Total Split (%)	12.5%	39.2%		12.5%	39.2%		15.0%	33.3%		15.0%	33.3%	12.5%
Maximum Green (s)	7.8	39.5		7.8	39.5		11.3	33.4		11.3	33.4	7.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		5			15			9			4	
Act Effct Green (s)	7.2	27.7		6.7	21.9		22.1	52.6		12.9	43.4	50.0
Actuated g/C Ratio	0.06	0.23		0.06	0.18		0.18	0.44		0.11	0.36	0.42
v/c Ratio	0.33	0.72		0.20	0.35		0.68	0.63		0.74	0.89	0.02
Control Delay	58.5	22.7		58.6	29.7		53.9	32.7		89.5	30.6	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	58.5	22.7		58.6	29.7		53.9	32.7		89.5	30.6	0.1
LOS	E	C		E	C		D	C		F	C	A
Approach Delay		27.9			33.8			39.2			36.5	
Approach LOS		C			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 36.3		Intersection LOS: D	
Intersection Capacity Utilization 81.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr



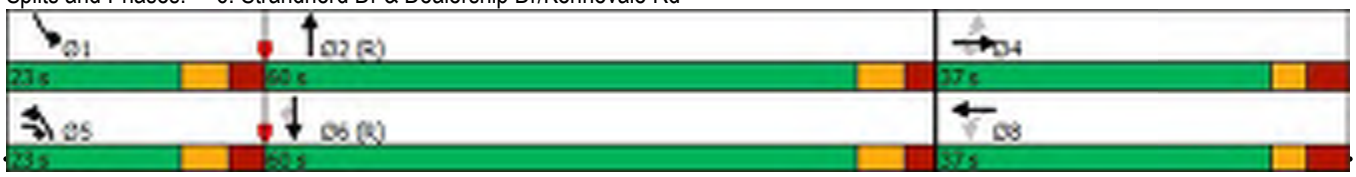


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	19	66	144	9	53	38	1017	107	54	1236	47
Future Volume (vph)	104	19	66	144	9	53	38	1017	107	54	1236	47
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00	0.99			1.00		1.00		
Frt			0.850		0.872			0.986				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1662	1509	0	3288	3335	0	1695	3390	1517
Flt Permitted	0.712			0.744			0.950			0.950		
Satd. Flow (perm)	1269	1784	1496	1300	1509	0	3288	3335	0	1694	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			37		59			12				105
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			181.9	
Travel Time (s)		11.5			39.6			48.0			9.4	
Confl. Peds. (#/hr)	1		1	1		1			2	2		
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 (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	116	21	73	160	10	59	42	1130	119	60	1373	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	21	73	160	69	0	42	1249	0	60	1373	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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	37.0	37.0	23.0	37.0	37.0		23.0	60.0		23.0	60.0	60.0
Total Split (%)	30.8%	30.8%	19.2%	30.8%	30.8%		19.2%	50.0%		19.2%	50.0%	50.0%
Maximum Green (s)	29.8	29.8	15.6	29.8	29.8		15.6	52.9		15.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		1	1			2			0	0
Act Effct Green (s)	20.2	20.2	27.0	20.2	20.2		7.0	71.2		9.6	73.7	73.7
Actuated g/C Ratio	0.17	0.17	0.22	0.17	0.17		0.06	0.59		0.08	0.61	0.61
v/c Ratio	0.54	0.07	0.20	0.73	0.23		0.22	0.63		0.44	0.66	0.05
Control Delay	53.9	39.0	17.0	65.6	14.0		56.2	20.2		62.1	19.2	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	53.9	39.0	17.0	65.6	14.0		56.2	20.2		62.1	19.2	0.1
LOS	D	D	B	E	B		E	C		E	B	A
Approach Delay		39.6			50.1			21.3			20.3	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 24.1		Intersection LOS: C	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd

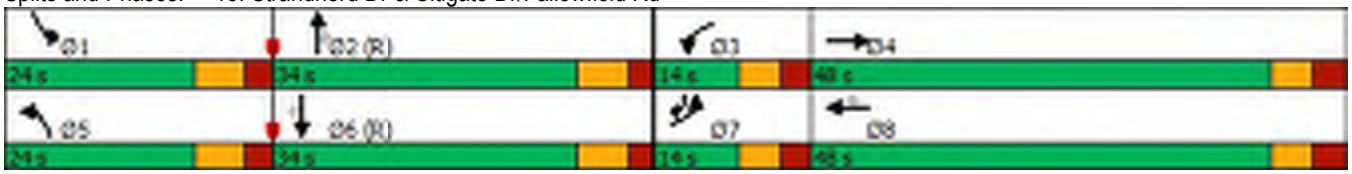


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	50	9	122	60	479	5	1046	98	421	1150	186
Future Volume (vph)	192	50	9	122	60	479	5	1046	98	421	1150	186
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.977				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3195	1662	0	1695	1701	1488	1235	3293	1517	3288	3390	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3195	1662	0	1692	1701	1488	1235	3293	1517	3288	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				360			160			163
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)			2	2								
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 (%)	5%	6%	11%	2%	7%	4%	40%	5%	2%	2%	2%	4%
Adj. Flow (vph)	213	56	10	136	67	532	6	1162	109	468	1278	207
Shared Lane Traffic (%)												
Lane Group Flow (vph)	213	66	0	136	67	532	6	1162	109	468	1278	207
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	14.0	48.0		14.0	48.0	48.0	24.0	34.0	34.0	24.0	34.0	14.0
Total Split (%)	11.7%	40.0%		11.7%	40.0%	40.0%	20.0%	28.3%	28.3%	20.0%	28.3%	11.7%
Maximum Green (s)	7.5	41.0		7.5	41.0	41.0	16.9	27.1	27.1	16.9	27.1	7.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	7.5	24.6		10.9	24.6	24.6	6.3	37.6	37.6	22.8	64.5	78.9
Actuated g/C Ratio	0.06	0.20		0.09	0.20	0.20	0.05	0.31	0.31	0.19	0.54	0.66
v/c Ratio	1.07	0.19		0.89	0.19	0.90	0.09	1.13	0.19	0.75	0.70	0.20
Control Delay	136.6	31.3		103.8	36.3	32.6	76.8	99.3	1.3	54.7	26.4	4.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	136.6	31.3		103.8	36.3	32.6	76.8	99.3	1.3	54.7	26.4	4.6
LOS	F	C		F	D	C	E	F	A	D	C	A
Approach Delay		111.7			46.1			90.8			30.9	
Approach LOS		F			D			F			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 115 (96%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.13			
Intersection Signal Delay: 56.9		Intersection LOS: E	
Intersection Capacity Utilization 84.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

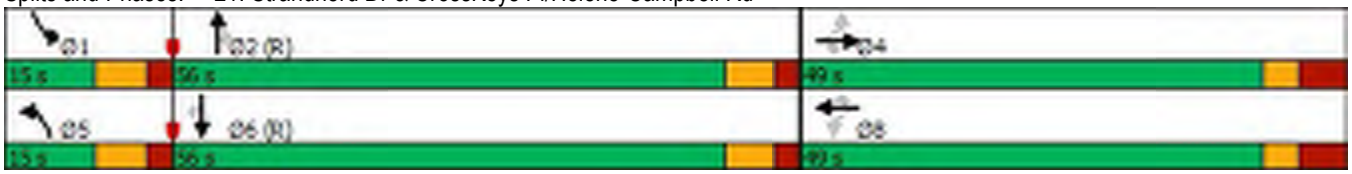


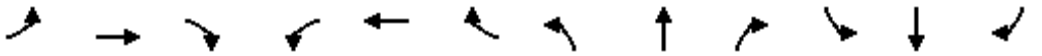
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	117	29	37	114	126	40	853	23	122	955	194
Future Volume (vph)	210	117	29	37	114	126	40	853	23	122	955	194
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	60.0		60.0	30.0		70.0	150.0		90.0	80.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	20.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1502	1679	1784	1517	3288	3202	1517	1695	3357	1517
Flt Permitted	0.676			0.674			0.950			0.950		
Satd. Flow (perm)	1204	1784	1468	1180	1784	1495	3285	3202	1479	1693	3357	1494
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			140			105			201
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.3			212.4			445.2			253.1	
Travel Time (s)		18.5			15.3			32.1			18.2	
Confl. Peds. (#/hr)	3		12	12		3	2		2	2		2
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 (%)	2%	2%	3%	3%	2%	2%	2%	8%	2%	2%	3%	2%
Adj. Flow (vph)	233	130	32	41	127	140	44	948	26	136	1061	216
Shared Lane Traffic (%)												
Lane Group Flow (vph)	233	130	32	41	127	140	44	948	26	136	1061	216
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
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	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	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	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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	48.7	48.7	48.7	48.7	48.7	48.7	11.9	31.8	31.8	11.9	31.8	31.8
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	15.0	56.0	56.0	15.0	56.0	56.0
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	12.5%	46.7%	46.7%	12.5%	46.7%	46.7%
Maximum Green (s)	41.3	41.3	41.3	41.3	41.3	41.3	8.1	49.2	49.2	8.1	49.2	49.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.2	2.2	2.3	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	7.7	7.7	6.9	6.8	6.8	6.9	6.8	6.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							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	3.0
Recall Mode	None	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		7.0	7.0
Flash Dont Walk (s)	34.0	34.0	34.0	34.0	34.0	34.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	28.7	28.7	28.7	28.7	28.7	28.7	7.0	52.9	52.9	17.1	65.4	65.4
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.06	0.44	0.44	0.14	0.54	0.54
v/c Ratio	0.81	0.31	0.08	0.15	0.30	0.30	0.23	0.67	0.04	0.57	0.58	0.24
Control Delay	63.5	37.4	0.3	33.9	37.3	6.7	30.6	46.2	7.0	62.6	23.7	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.5	37.4	0.3	33.9	37.3	6.7	30.6	46.2	7.0	62.6	23.7	9.9
LOS	E	D	A	C	D	A	C	D	A	E	C	A
Approach Delay		49.8			22.9			44.5			25.3	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 85 (71%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 34.4		Intersection LOS: C	
Intersection Capacity Utilization 73.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 21: Strandherd Dr & CrossKeys Pl/Helene-Campbell Rd

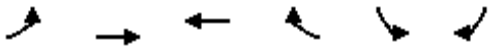




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	87	0	0	88	346	0	0	0	320	0	15
Future Volume (Veh/h)	15	87	0	0	88	346	0	0	0	320	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	97	0	0	98	384	0	0	0	356	0	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	482			97			246	613	97	229	229	98
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	482			97			246	613	97	229	229	98
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 %	98			100			100	100	100	50	100	98
cM capacity (veh/h)	1081			1496			687	401	959	717	660	958

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	114	98	384	0	373
Volume Left	17	0	0	0	356
Volume Right	0	0	384	0	17
cSH	1081	1496	1700	1700	726
Volume to Capacity	0.02	0.00	0.23	0.00	0.51
Queue Length 95th (m)	0.4	0.0	0.0	0.0	22.6
Control Delay (s)	1.4	0.0	0.0	0.0	15.1
Lane LOS	A			A	C
Approach Delay (s)	1.4	0.0		0.0	15.1
Approach LOS				A	C

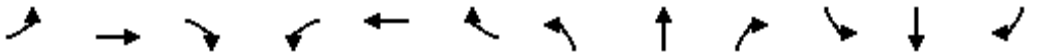
Intersection Summary				
Average Delay	6.0			
Intersection Capacity Utilization	38.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	25	26	77	77	1
Future Volume (Veh/h)	3	25	26	77	77	1
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	28	29	86	86	1
Pedestrians		1	1			
Lane Width (m)		3.7	3.7			
Walking Speed (m/s)		1.1	1.1			
Percent Blockage		0	0			
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	274	174	175	1	1	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	274	174	175	1	1	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	99	96	96	92	95	
cM capacity (veh/h)	577	678	678	1074	1569	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	31	115	87
Volume Left	3	0	86
Volume Right	0	86	1
cSH	667	936	1569
Volume to Capacity	0.05	0.12	0.05
Queue Length 95th (m)	1.1	3.2	1.3
Control Delay (s)	10.7	9.4	7.3
Lane LOS	B	A	A
Approach Delay (s)	10.7	9.4	7.3
Approach LOS	B	A	

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		



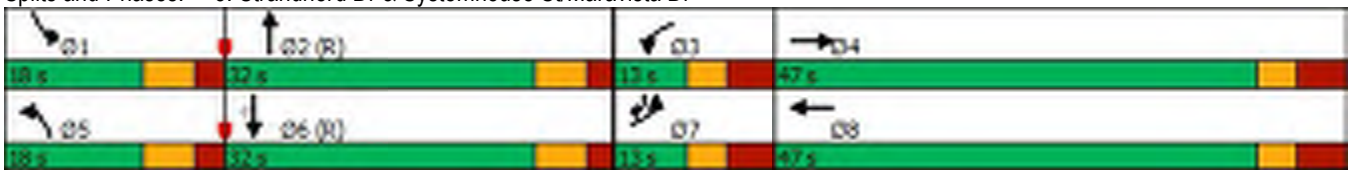
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	54	330	17	70	52	465	708	25	120	961	12
Future Volume (vph)	72	54	330	17	70	52	465	708	25	120	961	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.97	0.98		1.00	0.98		1.00	1.00		0.99		0.98
Frt		0.871			0.936			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1529	0	1695	1624	0	3288	3369	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3177	1529	0	1689	1624	0	3282	3369	0	1684	3390	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		312			38			3				111
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	29		8	8		29	4		9	9		4
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 (%)	2%	2%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	80	60	367	19	78	58	517	787	28	133	1068	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	427	0	19	136	0	517	815	0	133	1068	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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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	

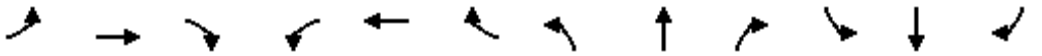
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	13.0	47.0		13.0	47.0		18.0	32.0		18.0	32.0	13.0
Total Split (%)	11.8%	42.7%		11.8%	42.7%		16.4%	29.1%		16.4%	29.1%	11.8%
Maximum Green (s)	5.8	39.5		5.8	39.5		11.3	25.4		11.3	25.4	5.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		8			20			9			4	
Act Effct Green (s)	5.8	32.6		5.7	27.4		22.8	40.0		11.4	28.6	33.8
Actuated g/C Ratio	0.05	0.30		0.05	0.25		0.21	0.36		0.10	0.26	0.31
v/c Ratio	0.46	0.64		0.22	0.31		0.76	0.67		0.76	1.21	0.02
Control Delay	59.6	12.2		56.0	22.5		53.1	37.5		78.6	141.2	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	59.6	12.2		56.0	22.5		53.1	37.5		78.6	141.2	0.1
LOS	E	B		E	C		D	D		E	F	A
Approach Delay		19.7			26.6			43.6			132.8	
Approach LOS		B			C			D			F	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.21
Intersection Signal Delay: 72.7 Intersection LOS: E
Intersection Capacity Utilization 91.9% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr



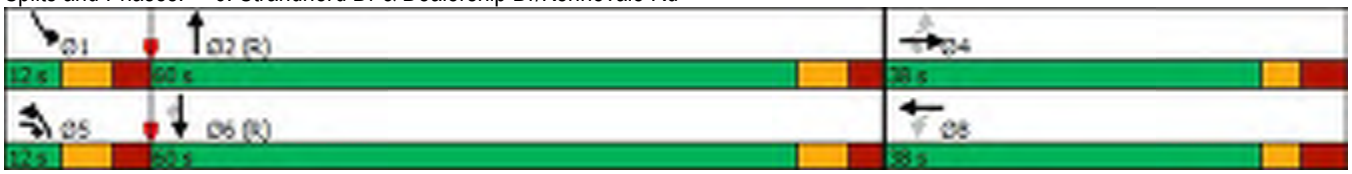


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	66	8	31	95	13	76	40	1033	106	46	987	32
Future Volume (vph)	66	8	31	95	13	76	40	1033	106	46	987	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.99	1.00			1.00	1.00		1.00		0.99
Frt			0.850		0.871			0.986				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1554	0	3288	3336	0	1695	3390	1517
Flt Permitted	0.694			0.752			0.950			0.950		
Satd. Flow (perm)	1238	1784	1497	1340	1554	0	3285	3336	0	1694	3390	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			41		84			14				115
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			181.9	
Travel Time (s)		11.5			39.6			48.0			9.4	
Confl. Peds. (#/hr)			1	1			2		1	1		2
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
Adj. Flow (vph)	73	9	34	106	14	84	44	1148	118	51	1097	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	9	34	106	98	0	44	1266	0	51	1097	36
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	38.0	38.0	12.0	38.0	38.0		12.0	60.0		12.0	60.0	60.0
Total Split (%)	34.5%	34.5%	10.9%	34.5%	34.5%		10.9%	54.5%		10.9%	54.5%	54.5%
Maximum Green (s)	30.8	30.8	4.6	30.8	30.8		4.6	52.9		4.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		0	0			1			0	0
Act Effct Green (s)	16.2	16.2	22.5	16.2	16.2		6.5	66.7		8.1	68.2	68.2
Actuated g/C Ratio	0.15	0.15	0.20	0.15	0.15		0.06	0.61		0.07	0.62	0.62
v/c Ratio	0.40	0.03	0.10	0.54	0.33		0.23	0.62		0.41	0.52	0.04
Control Delay	46.7	35.4	6.6	51.7	13.4		52.1	17.6		59.0	14.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	46.7	35.4	6.6	51.7	13.4		52.1	17.6		59.0	14.9	0.1
LOS	D	D	A	D	B		D	B		E	B	A
Approach Delay		34.1			33.3			18.7			16.4	
Approach LOS		C			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 33 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 64.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd

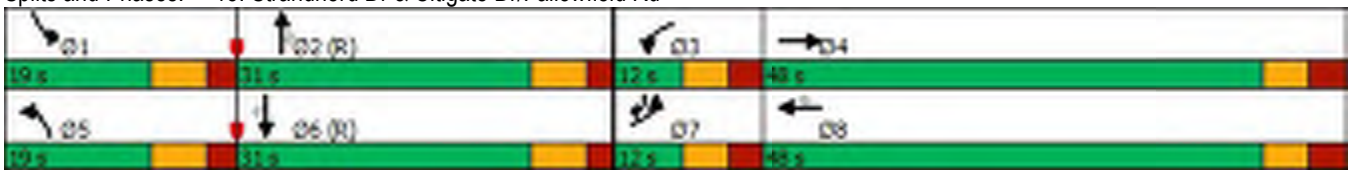


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	45	7	52	49	148	4	1148	76	178	1084	125
Future Volume (vph)	104	45	7	52	49	148	4	1148	76	178	1084	125
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99					0.98	1.00					0.97
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2819	1567	0	1662	1717	1459	1383	3390	1473	3225	3293	1446
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2798	1567	0	1662	1717	1435	1381	3390	1473	3225	3293	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8				174			175			114
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)	6					6	4					4
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 (%)	19%	9%	43%	4%	6%	6%	25%	2%	5%	4%	5%	7%
Adj. Flow (vph)	116	50	8	58	54	164	4	1276	84	198	1204	139
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	58	0	58	54	164	4	1276	84	198	1204	139
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	12.0	48.0		12.0	48.0	48.0	19.0	31.0	31.0	19.0	31.0	12.0
Total Split (%)	10.9%	43.6%		10.9%	43.6%	43.6%	17.3%	28.2%	28.2%	17.3%	28.2%	10.9%
Maximum Green (s)	5.5	41.0		5.5	41.0	41.0	11.9	24.1	24.1	11.9	24.1	5.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	5.5	13.1		5.5	10.7	10.7	6.0	54.3	54.3	12.0	70.6	76.5
Actuated g/C Ratio	0.05	0.12		0.05	0.10	0.10	0.05	0.49	0.49	0.11	0.64	0.70
v/c Ratio	0.83	0.30		0.70	0.33	0.55	0.05	0.76	0.10	0.56	0.57	0.14
Control Delay	93.4	45.0		91.7	51.5	13.6	44.8	21.9	1.1	52.5	13.5	2.0
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	93.4	45.0		91.7	51.5	13.6	44.8	21.9	1.1	52.5	13.5	2.0
LOS	F	D		F	D	B	D	C	A	D	B	A
Approach Delay		77.3			37.4			20.7			17.5	
Approach LOS		E			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

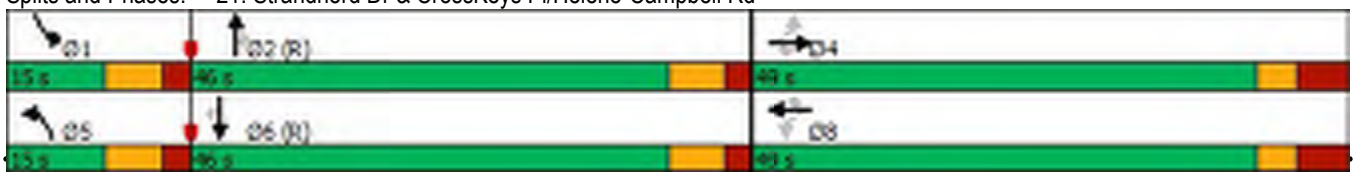


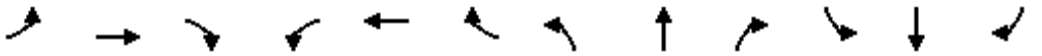
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	147	78	43	137	139	89	822	16	72	824	247
Future Volume (vph)	259	147	78	43	137	139	89	822	16	72	824	247
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	60.0		60.0	30.0		70.0	150.0		90.0	80.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	20.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00		0.96	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1784	1517	3288	3232	1517	1695	3390	1517
Flt Permitted	0.660			0.652			0.950			0.950		
Satd. Flow (perm)	1177	1784	1488	1158	1784	1497	3286	3232	1463	1688	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			154			115			274
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.3			212.4			445.2			253.1	
Travel Time (s)		18.5			15.3			32.1			18.2	
Confl. Peds. (#/hr)	1		7	7		1	1		7	7		1
Confl. Bikes (#/hr)			2									
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 (%)	2%	2%	2%	2%	2%	2%	2%	7%	2%	2%	2%	2%
Adj. Flow (vph)	288	163	87	48	152	154	99	913	18	80	916	274
Shared Lane Traffic (%)												
Lane Group Flow (vph)	288	163	87	48	152	154	99	913	18	80	916	274
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
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	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	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	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	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	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	
Detector 2 Channel												

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	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	48.7	48.7	48.7	48.7	48.7	48.7	11.9	31.8	31.8	11.9	31.8	31.8
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	15.0	46.0	46.0	15.0	46.0	46.0
Total Split (%)	44.5%	44.5%	44.5%	44.5%	44.5%	44.5%	13.6%	41.8%	41.8%	13.6%	41.8%	41.8%
Maximum Green (s)	41.3	41.3	41.3	41.3	41.3	41.3	8.1	39.2	39.2	8.1	39.2	39.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.2	2.2	2.3	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	7.7	7.7	6.9	6.8	6.8	6.9	6.8	6.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							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	3.0
Recall Mode	None	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		7.0	7.0
Flash Dont Walk (s)	34.0	34.0	34.0	34.0	34.0	34.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	32.0	32.0	32.0	32.0	32.0	32.0	8.1	49.9	49.9	9.4	48.5	48.5
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.29	0.07	0.45	0.45	0.09	0.44	0.44
v/c Ratio	0.84	0.31	0.17	0.14	0.29	0.28	0.41	0.62	0.02	0.55	0.61	0.34
Control Delay	57.4	30.4	3.7	26.8	30.0	5.2	49.1	44.8	1.9	77.9	18.1	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.4	30.4	3.7	26.8	30.0	5.2	49.1	44.8	1.9	77.9	18.1	2.3
LOS	E	C	A	C	C	A	D	D	A	E	B	A
Approach Delay		40.5			18.8			44.5			18.5	
Approach LOS		D			B			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 108 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 30.6		Intersection LOS: C	
Intersection Capacity Utilization 76.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 21: Strandherd Dr & CrossKeys Pl/Helene-Campbell Rd

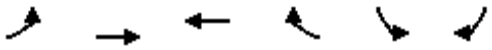




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	68	0	0	89	448	0	0	0	388	0	15
Future Volume (Veh/h)	15	68	0	0	89	448	0	0	0	388	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	76	0	0	99	498	0	0	0	431	0	17
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	597			76			226	707	76	209	209	99
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	597			76			226	707	76	209	209	99
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 %	98			100			100	100	100	42	100	98
cM capacity (veh/h)	980			1523			707	354	985	738	676	957

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	93	99	498	0	448
Volume Left	17	0	0	0	431
Volume Right	0	0	498	0	17
cSH	980	1523	1700	1700	745
Volume to Capacity	0.02	0.00	0.29	0.00	0.60
Queue Length 95th (m)	0.4	0.0	0.0	0.0	31.0
Control Delay (s)	1.7	0.0	0.0	0.0	16.9
Lane LOS	A			A	C
Approach Delay (s)	1.7	0.0		0.0	16.9
Approach LOS				A	C

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	41.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	22	46	58	61	0
Future Volume (Veh/h)	2	22	46	58	61	0
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	24	51	64	68	0
Pedestrians		2			3	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	230	138	138	3	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	230	138	138	3	0	
tC, single (s)	7.1	6.5	6.5	6.3	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.4	2.3	
p0 queue free %	100	97	93	94	96	
cM capacity (veh/h)	619	719	719	1063	1572	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	26	115	68
Volume Left	2	0	68
Volume Right	0	64	0
cSH	710	877	1572
Volume to Capacity	0.04	0.13	0.04
Queue Length 95th (m)	0.9	3.4	1.0
Control Delay (s)	10.3	9.7	7.4
Lane LOS	B	A	A
Approach Delay (s)	10.3	9.7	7.4
Approach LOS	B	A	

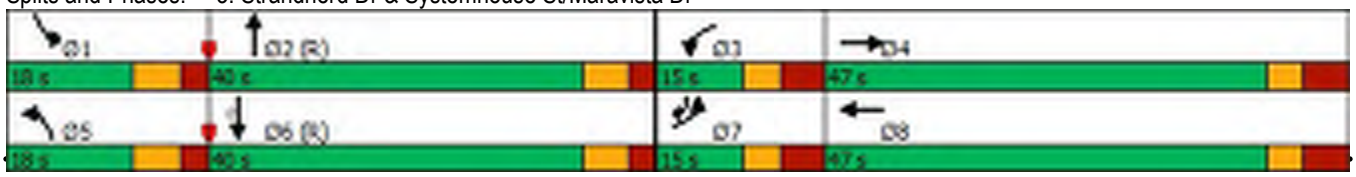
Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	56	295	19	59	42	367	946	27	121	1176	14
Future Volume (vph)	59	56	295	19	59	42	367	946	27	121	1176	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.99		1.00	0.99		1.00	1.00		0.99		0.98
Frt		0.874			0.938			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1538	0	1695	1635	0	3257	3340	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3214	1538	0	1690	1635	0	3250	3340	0	1685	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		236			32			2				102
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	17		5	5		17	4		9	9		4
Confl. Bikes (#/hr)									2			2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	59	56	295	19	59	42	367	946	27	121	1176	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	351	0	19	101	0	367	973	0	121	1176	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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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												

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	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	15.0	47.0		15.0	47.0		18.0	40.0		18.0	40.0	15.0
Total Split (%)	12.5%	39.2%		12.5%	39.2%		15.0%	33.3%		15.0%	33.3%	12.5%
Maximum Green (s)	7.8	39.5		7.8	39.5		11.3	33.4		11.3	33.4	7.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		5			15			9			4	
Act Effct Green (s)	7.1	27.5		6.7	21.7		19.4	53.8		12.0	46.3	52.9
Actuated g/C Ratio	0.06	0.23		0.06	0.18		0.16	0.45		0.10	0.39	0.44
v/c Ratio	0.30	0.66		0.20	0.31		0.70	0.65		0.72	0.90	0.02
Control Delay	57.9	18.1		58.6	27.7		56.7	32.6		89.5	30.3	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	57.9	18.1		58.6	27.7		56.7	32.6		89.5	30.3	0.1
LOS	E	B		E	C		E	C		F	C	A
Approach Delay		23.8			32.6			39.2			35.4	
Approach LOS		C			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 35.4		Intersection LOS: D	
Intersection Capacity Utilization 87.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr

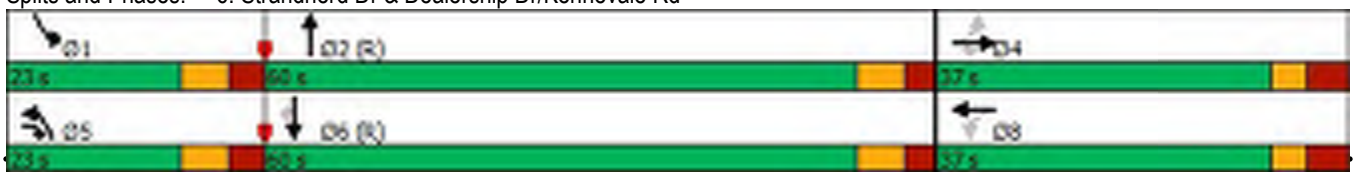


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	19	67	144	12	53	47	1158	107	56	1457	47
Future Volume (vph)	106	19	67	144	12	53	47	1158	107	56	1457	47
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00	0.99			1.00		1.00		
Frt			0.850		0.878			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1662	1520	0	3288	3339	0	1695	3390	1517
Flt Permitted	0.715			0.745			0.950			0.950		
Satd. Flow (perm)	1274	1784	1496	1302	1520	0	3288	3339	0	1694	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			37		53			10				105
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			181.9	
Travel Time (s)		11.5			39.6			48.0			9.4	
Confl. Peds. (#/hr)	1		1	1		1			2	2		
Confl. Bikes (#/hr)			1									
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	106	19	67	144	12	53	47	1158	107	56	1457	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	19	67	144	65	0	47	1265	0	56	1457	47
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	37.0	37.0	23.0	37.0	37.0		23.0	60.0		23.0	60.0	60.0
Total Split (%)	30.8%	30.8%	19.2%	30.8%	30.8%		19.2%	50.0%		19.2%	50.0%	50.0%
Maximum Green (s)	29.8	29.8	15.6	29.8	29.8		15.6	52.9		15.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		1	1			2			0	0
Act Effct Green (s)	19.1	19.1	26.1	19.1	19.1		7.1	72.5		9.3	74.6	74.6
Actuated g/C Ratio	0.16	0.16	0.22	0.16	0.16		0.06	0.60		0.08	0.62	0.62
v/c Ratio	0.52	0.07	0.19	0.70	0.23		0.24	0.63		0.43	0.69	0.05
Control Delay	53.9	39.5	16.1	63.9	15.5		56.4	19.5		61.8	19.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	53.9	39.5	16.1	63.9	15.5		56.4	19.5		61.8	19.7	0.1
LOS	D	D	B	E	B		E	B		E	B	A
Approach Delay		39.3			48.8			20.8			20.7	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 23.6		Intersection LOS: C	
Intersection Capacity Utilization 76.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd



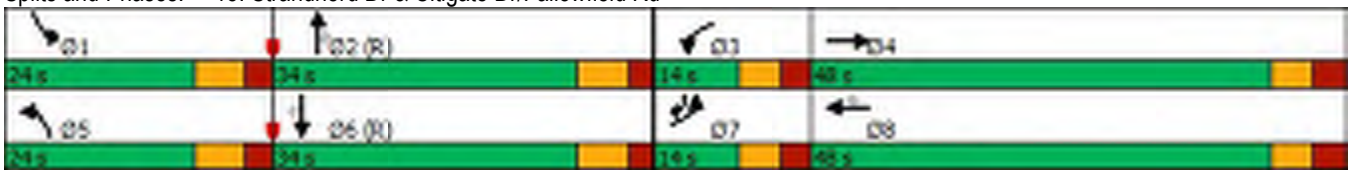
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	212	53	12	138	63	496	8	1166	116	440	1326	206
Future Volume (vph)	212	53	12	138	63	496	8	1166	116	440	1326	206
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.972				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3195	1650	0	1695	1701	1488	1235	3293	1517	3288	3390	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3195	1650	0	1692	1701	1488	1235	3293	1517	3288	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				360			160			156
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour 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
Heavy Vehicles (%)	5%	6%	11%	2%	7%	4%	40%	5%	2%	2%	2%	4%
Adj. Flow (vph)	212	53	12	138	63	496	8	1166	116	440	1326	206
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	65	0	138	63	496	8	1166	116	440	1326	206
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	14.0	48.0		14.0	48.0	48.0	24.0	34.0	34.0	24.0	34.0	14.0
Total Split (%)	11.7%	40.0%		11.7%	40.0%	40.0%	20.0%	28.3%	28.3%	20.0%	28.3%	11.7%
Maximum Green (s)	7.5	41.0		7.5	41.0	41.0	16.9	27.1	27.1	16.9	27.1	7.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	7.5	20.5		10.1	20.6	20.6	6.5	42.9	42.9	21.5	68.5	82.9
Actuated g/C Ratio	0.06	0.17		0.08	0.17	0.17	0.05	0.36	0.36	0.18	0.57	0.69
v/c Ratio	1.07	0.22		0.97	0.22	0.90	0.12	0.99	0.18	0.75	0.69	0.19
Control Delay	135.3	33.6		125.4	39.8	32.0	72.4	54.4	1.3	55.2	23.9	4.3
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	135.3	33.6		125.4	39.8	32.0	72.4	54.4	1.3	55.2	23.9	4.3
LOS	F	C		F	D	C	E	D	A	E	C	A
Approach Delay		111.4			51.2			49.8			28.8	
Approach LOS		F			D			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 115 (96%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 44.3 Intersection LOS: D
Intersection Capacity Utilization 89.8% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

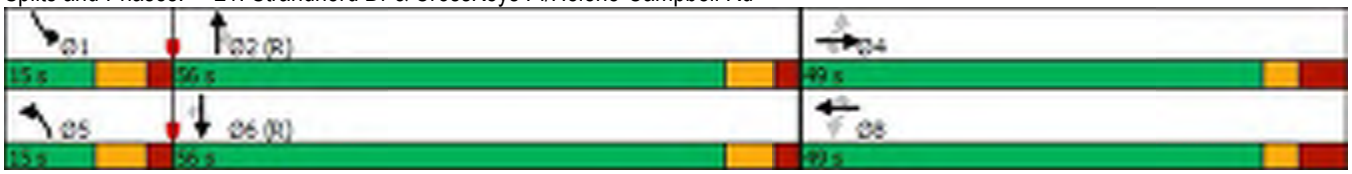


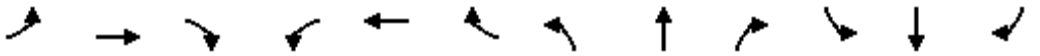
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	117	30	37	114	126	41	993	23	122	1148	194
Future Volume (vph)	210	117	30	37	114	126	41	993	23	122	1148	194
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	60.0		60.0	30.0		70.0	150.0		90.0	80.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	20.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1502	1679	1784	1517	3288	3202	1517	1695	3357	1517
Flt Permitted	0.684			0.682			0.950			0.950		
Satd. Flow (perm)	1218	1784	1468	1194	1784	1495	3285	3202	1479	1693	3357	1494
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			126			105			167
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.3			212.4			445.2			253.1	
Travel Time (s)		18.5			15.3			32.1			18.2	
Confl. Peds. (#/hr)	3		12	12		3	2		2	2		2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	8%	2%	2%	3%	2%
Adj. Flow (vph)	210	117	30	37	114	126	41	993	23	122	1148	194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	210	117	30	37	114	126	41	993	23	122	1148	194
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
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	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	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	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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	48.7	48.7	48.7	48.7	48.7	48.7	11.9	31.8	31.8	11.9	31.8	31.8
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	15.0	56.0	56.0	15.0	56.0	56.0
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	12.5%	46.7%	46.7%	12.5%	46.7%	46.7%
Maximum Green (s)	41.3	41.3	41.3	41.3	41.3	41.3	8.1	49.2	49.2	8.1	49.2	49.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.2	2.2	2.3	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	7.7	7.7	6.9	6.8	6.8	6.9	6.8	6.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							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	3.0
Recall Mode	None	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		7.0	7.0
Flash Dont Walk (s)	34.0	34.0	34.0	34.0	34.0	34.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	26.2	26.2	26.2	26.2	26.2	26.2	7.0	56.3	56.3	16.1	67.9	67.9
Actuated g/C Ratio	0.22	0.22	0.22	0.22	0.22	0.22	0.06	0.47	0.47	0.13	0.57	0.57
v/c Ratio	0.79	0.30	0.08	0.14	0.29	0.30	0.22	0.66	0.03	0.54	0.60	0.21
Control Delay	64.1	39.2	0.4	35.7	39.1	7.4	29.8	43.3	6.1	61.1	20.8	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	39.2	0.4	35.7	39.1	7.4	29.8	43.3	6.1	61.1	20.8	8.5
LOS	E	D	A	D	D	A	C	D	A	E	C	A
Approach Delay		50.6			24.2			42.0			22.5	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 85 (71%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 32.4		Intersection LOS: C	
Intersection Capacity Utilization 79.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 21: Strandherd Dr & CrossKeys Pl/Helene-Campbell Rd

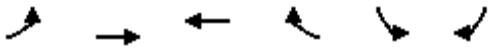




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	87	0	0	88	346	0	0	0	320	0	15
Future Volume (Veh/h)	15	87	0	0	88	346	0	0	0	320	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	87	0	0	88	346	0	0	0	320	0	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	434			87			220	551	87	205	205	88
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	434			87			220	551	87	205	205	88
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			100			100	100	100	57	100	98
cM capacity (veh/h)	1126			1509			717	436	971	745	682	970

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	102	88	346	0	335
Volume Left	15	0	0	0	320
Volume Right	0	0	346	0	15
cSH	1126	1509	1700	1700	753
Volume to Capacity	0.01	0.00	0.20	0.00	0.44
Queue Length 95th (m)	0.3	0.0	0.0	0.0	17.5
Control Delay (s)	1.3	0.0	0.0	0.0	13.6
Lane LOS	A			A	B
Approach Delay (s)	1.3	0.0		0.0	13.6
Approach LOS				A	B

Intersection Summary				
Average Delay	5.4			
Intersection Capacity Utilization	38.7%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	25	26	77	77	1
Future Volume (Veh/h)	3	25	26	77	77	1
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	25	26	77	77	1
Pedestrians		1	1			
Lane Width (m)		3.7	3.7			
Walking Speed (m/s)		1.1	1.1			
Percent Blockage		0	0			
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	246	156	157	1	1	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	246	156	157	1	1	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	100	96	96	93	95	
cM capacity (veh/h)	614	698	698	1074	1569	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	28	103	78
Volume Left	3	0	77
Volume Right	0	77	1
cSH	688	945	1569
Volume to Capacity	0.04	0.11	0.05
Queue Length 95th (m)	1.0	2.8	1.2
Control Delay (s)	10.5	9.3	7.3
Lane LOS	B	A	A
Approach Delay (s)	10.5	9.3	7.3
Approach LOS	B	A	

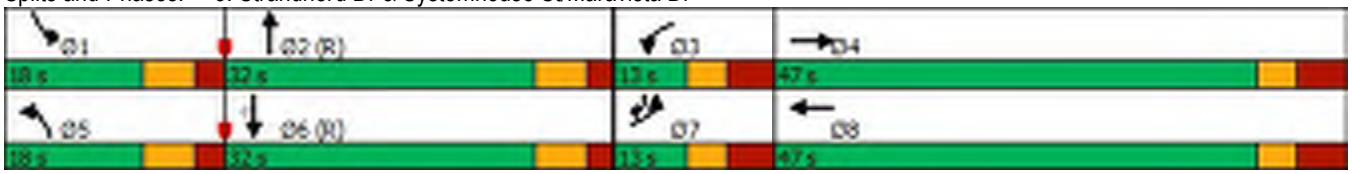
Intersection Summary			
Average Delay	8.7		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	54	335	19	70	52	465	773	25	120	1051	12
Future Volume (vph)	72	54	335	19	70	52	465	773	25	120	1051	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.97	0.98		1.00	0.98		1.00	1.00		0.99		0.98
Frt		0.871			0.936			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1529	0	1695	1624	0	3288	3369	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3175	1529	0	1688	1624	0	3281	3369	0	1684	3390	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		317			38			3				111
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	29		8	8		29	4		9	9		4
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	72	54	335	19	70	52	465	773	25	120	1051	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	389	0	19	122	0	465	798	0	120	1051	12
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	13.0	47.0		13.0	47.0		18.0	32.0		18.0	32.0	13.0
Total Split (%)	11.8%	42.7%		11.8%	42.7%		16.4%	29.1%		16.4%	29.1%	11.8%
Maximum Green (s)	5.8	39.5		5.8	39.5		11.3	25.4		11.3	25.4	5.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		8			20			9			4	
Act Effct Green (s)	5.8	32.6		5.7	27.4		20.3	40.4		11.0	31.1	36.3
Actuated g/C Ratio	0.05	0.30		0.05	0.25		0.18	0.37		0.10	0.28	0.33
v/c Ratio	0.42	0.58		0.22	0.28		0.77	0.64		0.71	1.10	0.02
Control Delay	58.1	9.2		56.0	20.8		55.3	36.9		77.1	95.3	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	58.1	9.2		56.0	20.8		55.3	36.9		77.1	95.3	0.1
LOS	E	A		E	C		E	D		E	F	A
Approach Delay		16.9			25.5			43.6			92.5	
Approach LOS		B			C			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 57.7		Intersection LOS: E	
Intersection Capacity Utilization 94.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr

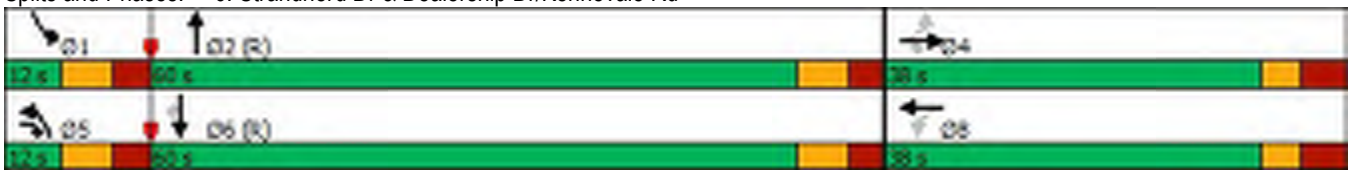


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	8	33	95	18	76	55	1099	106	49	1118	32
Future Volume (vph)	69	8	33	95	18	76	55	1099	106	49	1118	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.99	1.00			1.00	1.00		1.00		0.99
Frt			0.850		0.879			0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1568	0	3288	3340	0	1695	3390	1517
Flt Permitted	0.696			0.752			0.950			0.950		
Satd. Flow (perm)	1242	1784	1497	1340	1568	0	3285	3340	0	1694	3390	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			41		76			13				115
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			181.9	
Travel Time (s)		11.5			39.6			48.0			9.4	
Confl. Peds. (#/hr)			1	1			2		1	1		2
Peak Hour 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
Adj. Flow (vph)	69	8	33	95	18	76	55	1099	106	49	1118	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	8	33	95	94	0	55	1205	0	49	1118	32
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	38.0	38.0	12.0	38.0	38.0		12.0	60.0		12.0	60.0	60.0
Total Split (%)	34.5%	34.5%	10.9%	34.5%	34.5%		10.9%	54.5%		10.9%	54.5%	54.5%
Maximum Green (s)	30.8	30.8	4.6	30.8	30.8		4.6	52.9		4.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		0	0			1			0	0
Act Effct Green (s)	15.7	15.7	22.2	15.7	15.7		6.7	67.3		8.0	68.5	68.5
Actuated g/C Ratio	0.14	0.14	0.20	0.14	0.14		0.06	0.61		0.07	0.62	0.62
v/c Ratio	0.39	0.03	0.10	0.50	0.33		0.27	0.59		0.40	0.53	0.03
Control Delay	46.9	35.6	6.3	50.7	14.8		52.7	16.4		58.8	14.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	46.9	35.6	6.3	50.7	14.8		52.7	16.4		58.8	14.9	0.1
LOS	D	D	A	D	B		D	B		E	B	A
Approach Delay		33.9			32.8			18.0			16.3	
Approach LOS		C			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 33 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd

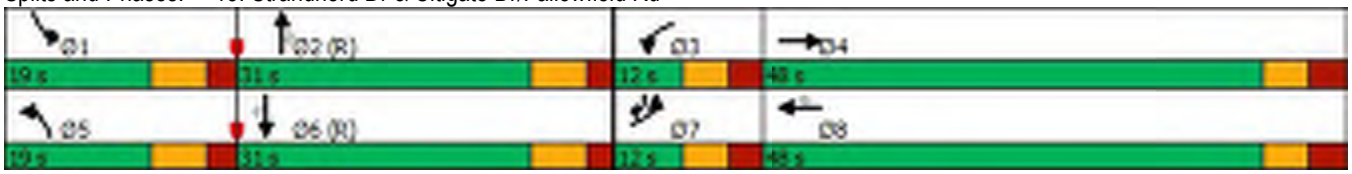


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	48	10	72	53	170	8	1188	99	202	1150	157
Future Volume (vph)	130	48	10	72	53	170	8	1188	99	202	1150	157
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99					0.98	1.00					0.97
Frt		0.974				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2819	1543	0	1662	1717	1459	1383	3390	1473	3225	3293	1446
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2798	1543	0	1662	1717	1435	1381	3390	1473	3225	3293	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				174			175			135
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)	6					6	4					4
Peak Hour 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
Heavy Vehicles (%)	19%	9%	43%	4%	6%	6%	25%	2%	5%	4%	5%	7%
Adj. Flow (vph)	130	48	10	72	53	170	8	1188	99	202	1150	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	58	0	72	53	170	8	1188	99	202	1150	157
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	12.0	48.0		12.0	48.0	48.0	19.0	31.0	31.0	19.0	31.0	12.0
Total Split (%)	10.9%	43.6%		10.9%	43.6%	43.6%	17.3%	28.2%	28.2%	17.3%	28.2%	10.9%
Maximum Green (s)	5.5	41.0		5.5	41.0	41.0	11.9	24.1	24.1	11.9	24.1	5.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	5.5	10.8		8.9	10.8	10.8	6.3	54.1	54.1	12.2	70.4	76.3
Actuated g/C Ratio	0.05	0.10		0.08	0.10	0.10	0.06	0.49	0.49	0.11	0.64	0.69
v/c Ratio	0.93	0.36		0.54	0.32	0.57	0.10	0.71	0.12	0.57	0.55	0.15
Control Delay	112.1	45.9		67.4	51.1	14.7	46.1	19.4	1.6	52.4	13.4	1.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.1	45.9		67.4	51.1	14.7	46.1	19.4	1.6	52.4	13.4	1.9
LOS	F	D		E	D	B	D	B	A	D	B	A
Approach Delay		91.7			34.1			18.2			17.4	
Approach LOS		F			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 23.5		Intersection LOS: C	
Intersection Capacity Utilization 73.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

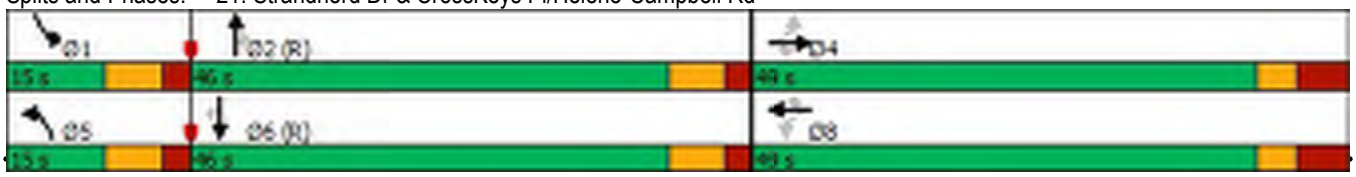


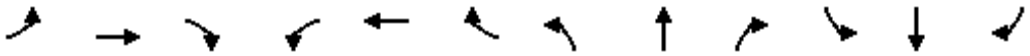
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	147	80	43	137	139	91	886	16	72	910	247
Future Volume (vph)	259	147	80	43	137	139	91	886	16	72	910	247
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	60.0		60.0	30.0		70.0	150.0		90.0	80.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	20.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00		0.96	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1784	1517	3288	3232	1517	1695	3390	1517
Flt Permitted	0.669			0.663			0.950			0.950		
Satd. Flow (perm)	1193	1784	1488	1178	1784	1497	3286	3232	1463	1687	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			139			115			247
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.3			212.4			445.2			253.1	
Travel Time (s)		18.5			15.3			32.1			18.2	
Confl. Peds. (#/hr)	1		7	7		1	1		7	7		1
Confl. Bikes (#/hr)			2									
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	7%	2%	2%	2%	2%
Adj. Flow (vph)	259	147	80	43	137	139	91	886	16	72	910	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	259	147	80	43	137	139	91	886	16	72	910	247
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
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	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	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	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	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	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	
Detector 2 Channel												

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	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	48.7	48.7	48.7	48.7	48.7	48.7	11.9	31.8	31.8	11.9	31.8	31.8
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	15.0	46.0	46.0	15.0	46.0	46.0
Total Split (%)	44.5%	44.5%	44.5%	44.5%	44.5%	44.5%	13.6%	41.8%	41.8%	13.6%	41.8%	41.8%
Maximum Green (s)	41.3	41.3	41.3	41.3	41.3	41.3	8.1	39.2	39.2	8.1	39.2	39.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.2	2.2	2.3	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	7.7	7.7	6.9	6.8	6.8	6.9	6.8	6.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							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	3.0
Recall Mode	None	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		7.0	7.0
Flash Dont Walk (s)	34.0	34.0	34.0	34.0	34.0	34.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	29.5	29.5	29.5	29.5	29.5	29.5	8.1	52.5	52.5	9.2	53.6	53.6
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.07	0.48	0.48	0.08	0.49	0.49
v/c Ratio	0.81	0.31	0.17	0.14	0.29	0.28	0.38	0.57	0.02	0.51	0.55	0.29
Control Delay	55.9	31.9	3.1	28.1	31.4	5.6	46.8	42.6	1.5	77.8	15.9	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	31.9	3.1	28.1	31.4	5.6	46.8	42.6	1.5	77.8	15.9	1.8
LOS	E	C	A	C	C	A	D	D	A	E	B	A
Approach Delay		39.9			19.7			42.4			16.7	
Approach LOS		D			B			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 108 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 29.2		Intersection LOS: C	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 21: Strandherd Dr & CrossKeys Pl/Helene-Campbell Rd

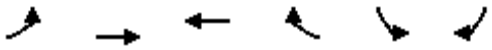




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	68	0	0	89	448	0	0	0	388	0	15
Future Volume (Veh/h)	15	68	0	0	89	448	0	0	0	388	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	68	0	0	89	448	0	0	0	388	0	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	537			68			202	635	68	187	187	89
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	537			68			202	635	68	187	187	89
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			100			100	100	100	49	100	98
cM capacity (veh/h)	1031			1533			736	390	995	765	697	969

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	83	89	448	0	403
Volume Left	15	0	0	0	388
Volume Right	0	0	448	0	15
cSH	1031	1533	1700	1700	771
Volume to Capacity	0.01	0.00	0.26	0.00	0.52
Queue Length 95th (m)	0.3	0.0	0.0	0.0	23.4
Control Delay (s)	1.6	0.0	0.0	0.0	14.7
Lane LOS	A			A	B
Approach Delay (s)	1.6	0.0		0.0	14.7
Approach LOS				A	B

Intersection Summary				
Average Delay	5.9			
Intersection Capacity Utilization	41.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	22	46	58	61	0
Future Volume (Veh/h)	2	22	46	58	61	0
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	2	22	46	58	61	0
Pedestrians		2			3	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	208	124	124	3	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	208	124	124	3	0	
tC, single (s)	7.1	6.5	6.5	6.3	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.4	2.3	
p0 queue free %	100	97	94	95	96	
cM capacity (veh/h)	651	735	735	1063	1572	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	24	104	61
Volume Left	2	0	61
Volume Right	0	58	0
cSH	727	888	1572
Volume to Capacity	0.03	0.12	0.04
Queue Length 95th (m)	0.8	3.0	0.9
Control Delay (s)	10.1	9.6	7.4
Lane LOS	B	A	A
Approach Delay (s)	10.1	9.6	7.4
Approach LOS	B	A	

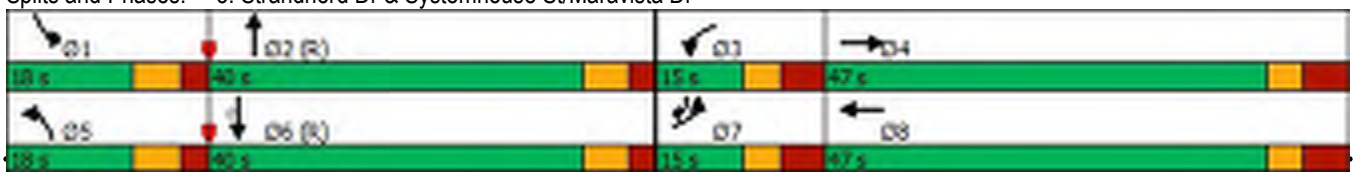
Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

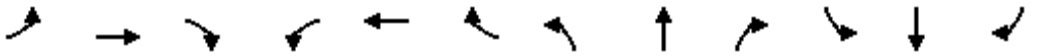
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	68	327	18	61	42	372	1186	27	121	1407	20
Future Volume (vph)	95	68	327	18	61	42	372	1186	27	121	1407	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.99		1.00	0.99		1.00	1.00		1.00		0.98
Frt		0.876			0.939			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1542	0	1695	1637	0	3257	3344	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3214	1542	0	1691	1637	0	3252	3344	0	1688	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		215			31			2				102
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	17		5	5		17	4		9	9		4
Confl. Bikes (#/hr)									2			2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	95	68	327	18	61	42	372	1186	27	121	1407	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	395	0	18	103	0	372	1213	0	121	1407	20
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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												

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	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	15.0	47.0		15.0	47.0		18.0	40.0		18.0	40.0	15.0
Total Split (%)	12.5%	39.2%		12.5%	39.2%		15.0%	33.3%		15.0%	33.3%	12.5%
Maximum Green (s)	7.8	39.5		7.8	39.5		11.3	33.4		11.3	33.4	7.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		5			15			9			4	
Act Effct Green (s)	7.5	30.5		6.7	21.7		19.7	50.8		12.0	43.0	49.9
Actuated g/C Ratio	0.06	0.25		0.06	0.18		0.16	0.42		0.10	0.36	0.42
v/c Ratio	0.46	0.72		0.19	0.32		0.70	0.86		0.72	1.16	0.03
Control Delay	61.8	24.8		58.4	28.4		56.4	40.6		87.5	100.1	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	61.8	24.8		58.4	28.4		56.4	40.6		87.5	100.1	0.1
LOS	E	C		E	C		E	D		F	F	A
Approach Delay		32.0			32.9			44.3			97.8	
Approach LOS		C			C			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 64.4		Intersection LOS: E	
Intersection Capacity Utilization 96.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr



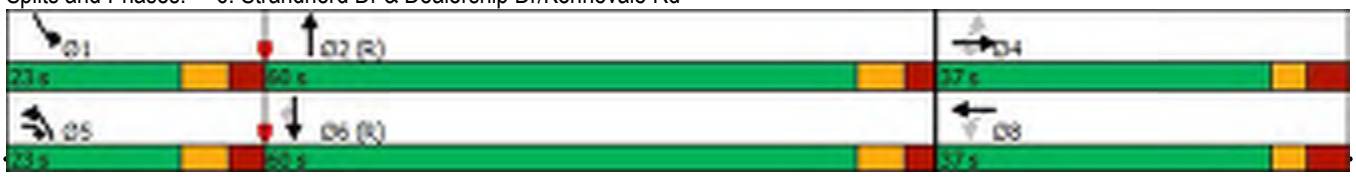


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	41	133	144	16	53	58	1355	107	56	1723	57
Future Volume (vph)	165	41	133	144	16	53	58	1355	107	56	1723	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00	0.99			1.00		1.00		
Frt			0.850		0.885			0.989				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1662	1533	0	3288	3347	0	1695	3390	1517
Flt Permitted	0.712			0.730			0.950			0.950		
Satd. Flow (perm)	1269	1784	1496	1276	1533	0	3288	3347	0	1694	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			37		53			9				105
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			181.9	
Travel Time (s)		11.5			39.6			48.0			9.4	
Confl. Peds. (#/hr)	1		1	1		1			2	2		
Confl. Bikes (#/hr)			1									
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	165	41	133	144	16	53	58	1355	107	56	1723	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	165	41	133	144	69	0	58	1462	0	56	1723	57
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	37.0	37.0	23.0	37.0	37.0		23.0	60.0		23.0	60.0	60.0
Total Split (%)	30.8%	30.8%	19.2%	30.8%	30.8%		19.2%	50.0%		19.2%	50.0%	50.0%
Maximum Green (s)	29.8	29.8	15.6	29.8	29.8		15.6	52.9		15.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		1	1			2			0	0
Act Effct Green (s)	20.8	20.8	28.1	20.8	20.8		7.5	70.8		9.3	70.0	70.0
Actuated g/C Ratio	0.17	0.17	0.23	0.17	0.17		0.06	0.59		0.08	0.58	0.58
v/c Ratio	0.75	0.13	0.35	0.65	0.22		0.28	0.74		0.43	0.87	0.06
Control Delay	67.0	40.0	24.1	59.0	15.9		56.7	23.5		61.8	28.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	67.0	40.0	24.1	59.0	15.9		56.7	23.5		61.8	28.7	0.4
LOS	E	D	C	E	B		E	C		E	C	A
Approach Delay		46.9			45.1			24.8			28.9	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 29.7		Intersection LOS: C	
Intersection Capacity Utilization 85.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd

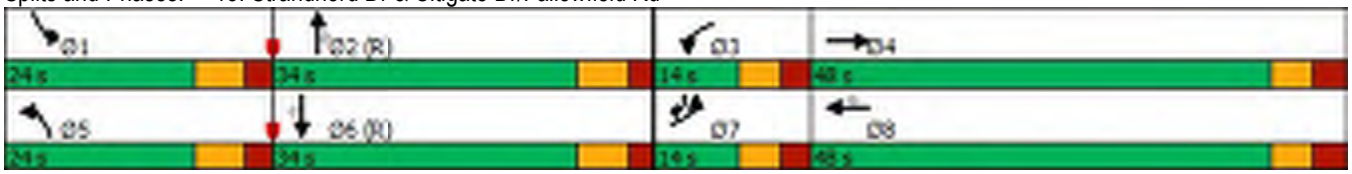


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	318	79	12	142	67	496	8	1455	140	440	1571	224
Future Volume (vph)	318	79	12	142	67	496	8	1455	140	440	1571	224
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3195	1669	0	1695	1701	1488	1235	3293	1517	3288	3390	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3195	1669	0	1692	1701	1488	1235	3293	1517	3288	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				358			160			143
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour 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
Heavy Vehicles (%)	5%	6%	11%	2%	7%	4%	40%	5%	2%	2%	2%	4%
Adj. Flow (vph)	318	79	12	142	67	496	8	1455	140	440	1571	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	318	91	0	142	67	496	8	1455	140	440	1571	224
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	14.0	48.0		14.0	48.0	48.0	24.0	34.0	34.0	24.0	34.0	14.0
Total Split (%)	11.7%	40.0%		11.7%	40.0%	40.0%	20.0%	28.3%	28.3%	20.0%	28.3%	11.7%
Maximum Green (s)	7.5	41.0		7.5	41.0	41.0	16.9	27.1	27.1	16.9	27.1	7.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	7.5	20.9		7.5	20.9	20.9	6.5	42.6	42.6	21.5	68.2	82.6
Actuated g/C Ratio	0.06	0.17		0.06	0.17	0.17	0.05	0.36	0.36	0.18	0.57	0.69
v/c Ratio	1.60	0.31		1.35	0.23	0.90	0.12	1.24	0.22	0.75	0.82	0.21
Control Delay	327.5	38.7		251.0	40.0	31.8	71.1	144.8	2.5	55.3	27.8	5.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	327.5	38.7		251.0	40.0	31.8	71.1	144.8	2.5	55.3	27.8	5.2
LOS	F	D		F	D	C	E	F	A	E	C	A
Approach Delay		263.2			76.7			132.0			31.0	
Approach LOS		F			E			F			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 115 (96%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.60			
Intersection Signal Delay: 89.4		Intersection LOS: F	
Intersection Capacity Utilization 101.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

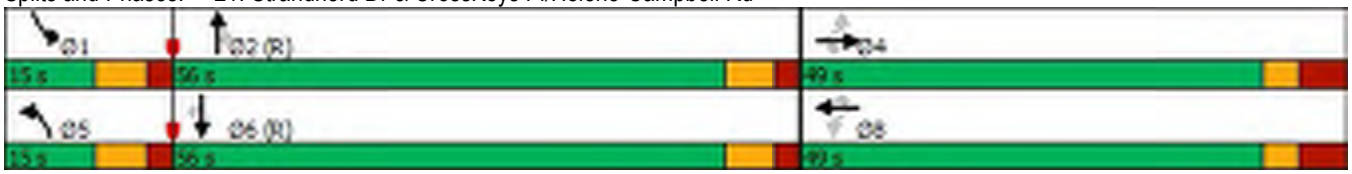


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	162	30	37	121	126	41	1271	23	122	1383	198
Future Volume (vph)	234	162	30	37	121	126	41	1271	23	122	1383	198
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	60.0		60.0	30.0		70.0	150.0		90.0	80.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	20.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1502	1679	1784	1517	3288	3202	1517	1695	3357	1517
Flt Permitted	0.679			0.624			0.950			0.950		
Satd. Flow (perm)	1209	1784	1468	1093	1784	1495	3286	3202	1479	1694	3357	1494
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			126			105			141
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.3			212.4			445.2			253.1	
Travel Time (s)		18.5			15.3			32.1			18.2	
Confl. Peds. (#/hr)	3		12	12		3	2		2	2		2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	8%	2%	2%	3%	2%
Adj. Flow (vph)	234	162	30	37	121	126	41	1271	23	122	1383	198
Shared Lane Traffic (%)												
Lane Group Flow (vph)	234	162	30	37	121	126	41	1271	23	122	1383	198
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
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	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	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	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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	48.7	48.7	48.7	48.7	48.7	48.7	11.9	31.8	31.8	11.9	31.8	31.8
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	15.0	56.0	56.0	15.0	56.0	56.0
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	12.5%	46.7%	46.7%	12.5%	46.7%	46.7%
Maximum Green (s)	41.3	41.3	41.3	41.3	41.3	41.3	8.1	49.2	49.2	8.1	49.2	49.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.2	2.2	2.3	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	7.7	7.7	6.9	6.8	6.8	6.9	6.8	6.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							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	3.0
Recall Mode	None	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		7.0	7.0
Flash Dont Walk (s)	34.0	34.0	34.0	34.0	34.0	34.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	28.7	28.7	28.7	28.7	28.7	28.7	7.0	54.6	54.6	15.2	65.4	65.4
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.06	0.46	0.46	0.13	0.54	0.54
v/c Ratio	0.81	0.38	0.07	0.14	0.28	0.28	0.22	0.87	0.03	0.57	0.76	0.23
Control Delay	63.2	39.1	0.3	33.8	37.0	6.8	29.4	52.8	6.0	61.9	24.7	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	39.1	0.3	33.8	37.0	6.8	29.4	52.8	6.0	61.9	24.7	11.4
LOS	E	D	A	C	D	A	C	D	A	E	C	B
Approach Delay		49.6			23.2			51.3			25.9	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 85 (71%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 37.4		Intersection LOS: D	
Intersection Capacity Utilization 94.4%		ICU Level of Service F	
Analysis Period (min) 15			

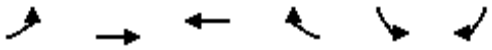
Splits and Phases: 21: Strandherd Dr & CrossKeys Pl/Helene-Campbell Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	168	0	0	101	346	0	0	0	320	0	15
Future Volume (Veh/h)	15	168	0	0	101	346	0	0	0	320	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	15	168	0	0	101	346	0	0	0	320	0	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	447			168			314	645	168	299	299	101
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	447			168			314	645	168	299	299	101
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			100			100	100	100	51	100	98
cM capacity (veh/h)	1113			1410			622	386	876	647	605	954

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	183	101	346	0	335
Volume Left	15	0	0	0	320
Volume Right	0	0	346	0	15
cSH	1113	1410	1700	1700	656
Volume to Capacity	0.01	0.00	0.20	0.00	0.51
Queue Length 95th (m)	0.3	0.0	0.0	0.0	22.2
Control Delay (s)	0.8	0.0	0.0	0.0	16.1
Lane LOS	A			A	C
Approach Delay (s)	0.8	0.0		0.0	16.1
Approach LOS				A	C

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	43.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	25	26	77	77	1
Future Volume (Veh/h)	3	25	26	77	77	1
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	25	26	77	77	1
Pedestrians		1	1			
Lane Width (m)		3.7	3.7			
Walking Speed (m/s)		1.1	1.1			
Percent Blockage		0	0			
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	246	156	157	1	1	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	246	156	157	1	1	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	100	96	96	93	95	
cM capacity (veh/h)	614	698	698	1074	1569	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	28	103	78
Volume Left	3	0	77
Volume Right	0	77	1
cSH	688	945	1569
Volume to Capacity	0.04	0.11	0.05
Queue Length 95th (m)	1.0	2.8	1.2
Control Delay (s)	10.5	9.3	7.3
Lane LOS	B	A	A
Approach Delay (s)	10.5	9.3	7.3
Approach LOS	B	A	

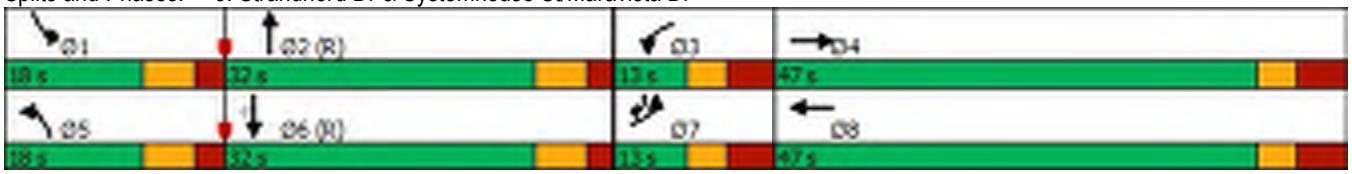
Intersection Summary			
Average Delay	8.7		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	54	335	19	70	52	465	843	25	120	1143	12
Future Volume (vph)	72	54	335	19	70	52	465	843	25	120	1143	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.97	0.98		1.00	0.98		1.00	1.00		0.99		0.98
Frt		0.871			0.936			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1529	0	1695	1624	0	3288	3373	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3175	1529	0	1688	1624	0	3282	3373	0	1685	3390	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		317			38			2				111
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	29		8	8		29	4		9	9		4
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	72	54	335	19	70	52	465	843	25	120	1143	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	389	0	19	122	0	465	868	0	120	1143	12
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	13.0	47.0		13.0	47.0		18.0	32.0		18.0	32.0	13.0
Total Split (%)	11.8%	42.7%		11.8%	42.7%		16.4%	29.1%		16.4%	29.1%	11.8%
Maximum Green (s)	5.8	39.5		5.8	39.5		11.3	25.4		11.3	25.4	5.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		8			20			9			4	
Act Effct Green (s)	5.8	32.6		5.7	27.4		20.3	40.4		11.0	31.1	36.3
Actuated g/C Ratio	0.05	0.30		0.05	0.25		0.18	0.37		0.10	0.28	0.33
v/c Ratio	0.42	0.58		0.22	0.28		0.77	0.70		0.71	1.19	0.02
Control Delay	58.1	9.2		56.0	20.8		55.3	38.4		76.2	131.2	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	58.1	9.2		56.0	20.8		55.3	38.4		76.2	131.2	0.1
LOS	E	A		E	C		E	D		E	F	A
Approach Delay		16.9			25.5			44.3			124.8	
Approach LOS		B			C			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 71.5		Intersection LOS: E	
Intersection Capacity Utilization 97.2%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr

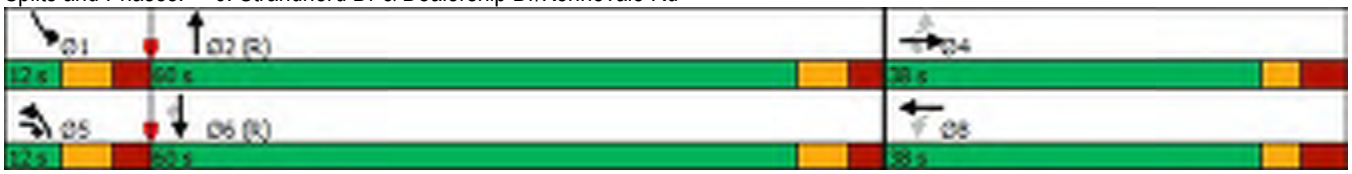


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	8	33	95	18	76	55	1186	106	49	1211	32
Future Volume (vph)	69	8	33	95	18	76	55	1186	106	49	1211	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.99	1.00			1.00	1.00		1.00		0.99
Frt			0.850		0.879			0.988				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1568	0	3288	3343	0	1695	3390	1517
Flt Permitted	0.696			0.752			0.950			0.950		
Satd. Flow (perm)	1242	1784	1497	1340	1568	0	3286	3343	0	1694	3390	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			41		76			12				115
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			181.9	
Travel Time (s)		11.5			39.6			48.0			9.4	
Confl. Peds. (#/hr)			1	1			2		1	1		2
Peak Hour 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
Adj. Flow (vph)	69	8	33	95	18	76	55	1186	106	49	1211	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	8	33	95	94	0	55	1292	0	49	1211	32
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	38.0	38.0	12.0	38.0	38.0		12.0	60.0		12.0	60.0	60.0
Total Split (%)	34.5%	34.5%	10.9%	34.5%	34.5%		10.9%	54.5%		10.9%	54.5%	54.5%
Maximum Green (s)	30.8	30.8	4.6	30.8	30.8		4.6	52.9		4.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		0	0			1			0	0
Act Effct Green (s)	15.7	15.7	22.2	15.7	15.7		6.7	67.3		8.0	68.5	68.5
Actuated g/C Ratio	0.14	0.14	0.20	0.14	0.14		0.06	0.61		0.07	0.62	0.62
v/c Ratio	0.39	0.03	0.10	0.50	0.33		0.27	0.63		0.40	0.57	0.03
Control Delay	46.9	35.6	6.3	50.7	14.8		52.7	17.4		58.8	15.7	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	46.9	35.6	6.3	50.7	14.8		52.7	17.4		58.8	15.7	0.1
LOS	D	D	A	D	B		D	B		E	B	A
Approach Delay		33.9			32.8			18.8			17.0	
Approach LOS		C			C			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 33 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 19.5		Intersection LOS: B	
Intersection Capacity Utilization 67.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd

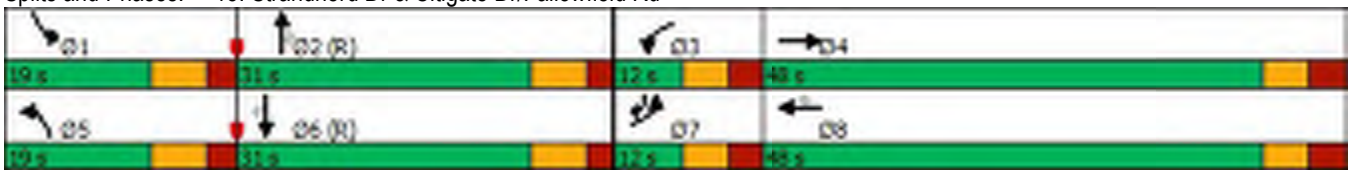


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	48	10	72	53	170	8	1281	99	202	1248	157
Future Volume (vph)	130	48	10	72	53	170	8	1281	99	202	1248	157
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99					0.98	1.00					0.97
Frt		0.974				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2819	1543	0	1662	1717	1459	1383	3390	1473	3225	3293	1446
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2798	1543	0	1662	1717	1435	1381	3390	1473	3225	3293	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				174			175			124
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)	6					6	4					4
Peak Hour 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
Heavy Vehicles (%)	19%	9%	43%	4%	6%	6%	25%	2%	5%	4%	5%	7%
Adj. Flow (vph)	130	48	10	72	53	170	8	1281	99	202	1248	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	58	0	72	53	170	8	1281	99	202	1248	157
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	12.0	48.0		12.0	48.0	48.0	19.0	31.0	31.0	19.0	31.0	12.0
Total Split (%)	10.9%	43.6%		10.9%	43.6%	43.6%	17.3%	28.2%	28.2%	17.3%	28.2%	10.9%
Maximum Green (s)	5.5	41.0		5.5	41.0	41.0	11.9	24.1	24.1	11.9	24.1	5.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	5.5	10.8		8.9	10.8	10.8	6.3	54.1	54.1	12.2	70.4	76.3
Actuated g/C Ratio	0.05	0.10		0.08	0.10	0.10	0.06	0.49	0.49	0.11	0.64	0.69
v/c Ratio	0.93	0.36		0.54	0.32	0.57	0.10	0.77	0.12	0.57	0.59	0.15
Control Delay	112.1	45.9		67.4	51.1	14.7	45.6	21.4	1.9	52.4	14.2	2.1
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	112.1	45.9		67.4	51.1	14.7	45.6	21.4	1.9	52.4	14.2	2.1
LOS	F	D		E	D	B	D	C	A	D	B	A
Approach Delay		91.7			34.1			20.2			17.8	
Approach LOS		F			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 24.1		Intersection LOS: C	
Intersection Capacity Utilization 76.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

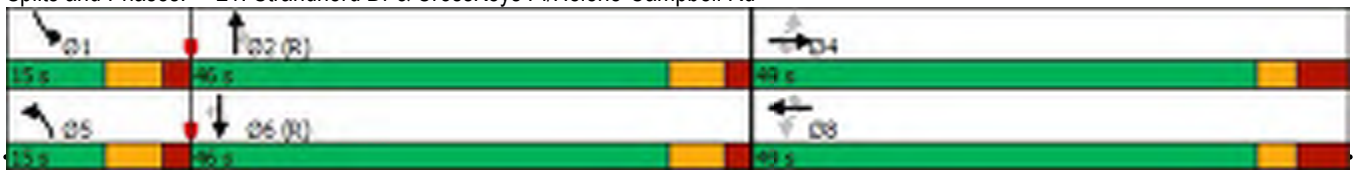


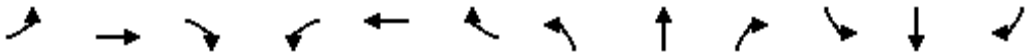
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	147	80	43	137	139	91	962	16	72	995	247
Future Volume (vph)	259	147	80	43	137	139	91	962	16	72	995	247
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	60.0		60.0	30.0		70.0	150.0		90.0	80.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	20.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00		0.96	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1784	1517	3288	3232	1517	1695	3390	1517
Flt Permitted	0.669			0.663			0.950			0.950		
Satd. Flow (perm)	1193	1784	1488	1178	1784	1497	3287	3232	1463	1688	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			139			115			245
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.3			212.4			445.2			253.1	
Travel Time (s)		18.5			15.3			32.1			18.2	
Confl. Peds. (#/hr)	1		7	7		1	1		7	7		1
Confl. Bikes (#/hr)			2									
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	7%	2%	2%	2%	2%
Adj. Flow (vph)	259	147	80	43	137	139	91	962	16	72	995	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	259	147	80	43	137	139	91	962	16	72	995	247
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
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	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	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	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	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	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	
Detector 2 Channel												

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	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	48.7	48.7	48.7	48.7	48.7	48.7	11.9	31.8	31.8	11.9	31.8	31.8
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	15.0	46.0	46.0	15.0	46.0	46.0
Total Split (%)	44.5%	44.5%	44.5%	44.5%	44.5%	44.5%	13.6%	41.8%	41.8%	13.6%	41.8%	41.8%
Maximum Green (s)	41.3	41.3	41.3	41.3	41.3	41.3	8.1	39.2	39.2	8.1	39.2	39.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.2	2.2	2.3	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	7.7	7.7	6.9	6.8	6.8	6.9	6.8	6.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							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	3.0
Recall Mode	None	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		7.0	7.0
Flash Dont Walk (s)	34.0	34.0	34.0	34.0	34.0	34.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	29.5	29.5	29.5	29.5	29.5	29.5	8.1	52.5	52.5	9.2	53.6	53.6
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.07	0.48	0.48	0.08	0.49	0.49
v/c Ratio	0.81	0.31	0.17	0.14	0.29	0.28	0.38	0.62	0.02	0.51	0.60	0.29
Control Delay	55.9	31.9	3.1	28.1	31.4	5.6	46.7	43.8	1.6	77.1	17.7	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	31.9	3.1	28.1	31.4	5.6	46.7	43.8	1.6	77.1	17.7	2.4
LOS	E	C	A	C	C	A	D	D	A	E	B	A
Approach Delay		39.9			19.7			43.4			18.0	
Approach LOS		D			B			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 108 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 30.1		Intersection LOS: C	
Intersection Capacity Utilization 81.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 21: Strandherd Dr & CrossKeys Pl/Helene-Campbell Rd

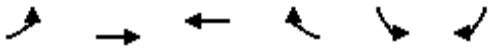




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	68	0	0	89	448	0	0	0	388	0	15
Future Volume (Veh/h)	15	68	0	0	89	448	0	0	0	388	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	68	0	0	89	448	0	0	0	388	0	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	537			68			202	635	68	187	187	89
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	537			68			202	635	68	187	187	89
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			100			100	100	100	49	100	98
cM capacity (veh/h)	1031			1533			736	390	995	765	697	969

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	83	89	448	0	403
Volume Left	15	0	0	0	388
Volume Right	0	0	448	0	15
cSH	1031	1533	1700	1700	771
Volume to Capacity	0.01	0.00	0.26	0.00	0.52
Queue Length 95th (m)	0.3	0.0	0.0	0.0	23.4
Control Delay (s)	1.6	0.0	0.0	0.0	14.7
Lane LOS	A			A	B
Approach Delay (s)	1.6	0.0		0.0	14.7
Approach LOS				A	B

Intersection Summary				
Average Delay	5.9			
Intersection Capacity Utilization	41.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	22	46	58	61	0
Future Volume (Veh/h)	2	22	46	58	61	0
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	2	22	46	58	61	0
Pedestrians		2			3	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	208	124	124	3	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	208	124	124	3	0	
tC, single (s)	7.1	6.5	6.5	6.3	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.4	2.3	
p0 queue free %	100	97	94	95	96	
cM capacity (veh/h)	651	735	735	1063	1572	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	24	104	61
Volume Left	2	0	61
Volume Right	0	58	0
cSH	727	888	1572
Volume to Capacity	0.03	0.12	0.04
Queue Length 95th (m)	0.8	3.0	0.9
Control Delay (s)	10.1	9.6	7.4
Lane LOS	B	A	A
Approach Delay (s)	10.1	9.6	7.4
Approach LOS	B	A	

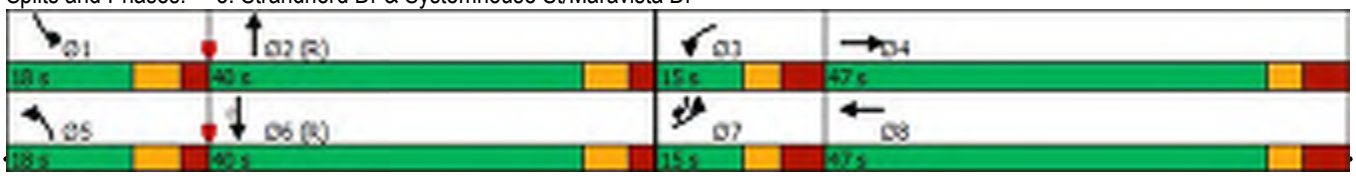
Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	68	327	18	61	42	372	1186	27	121	1220	20
Future Volume (vph)	95	68	327	18	61	42	372	1186	27	121	1220	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.99		1.00	0.99		1.00	1.00		1.00		0.98
Frt		0.876			0.939			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1542	0	1695	1637	0	3257	3344	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3214	1542	0	1691	1637	0	3251	3344	0	1688	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		215			31			2				102
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	17		5	5		17	4		9	9		4
Confl. Bikes (#/hr)									2			2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	95	68	327	18	61	42	372	1186	27	121	1220	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	395	0	18	103	0	372	1213	0	121	1220	20
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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												

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	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	15.0	47.0		15.0	47.0		18.0	40.0		18.0	40.0	15.0
Total Split (%)	12.5%	39.2%		12.5%	39.2%		15.0%	33.3%		15.0%	33.3%	12.5%
Maximum Green (s)	7.8	39.5		7.8	39.5		11.3	33.4		11.3	33.4	7.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		5			15			9			4	
Act Effct Green (s)	7.5	30.5		6.7	21.7		19.7	50.8		12.0	43.0	49.9
Actuated g/C Ratio	0.06	0.25		0.06	0.18		0.16	0.42		0.10	0.36	0.42
v/c Ratio	0.46	0.72		0.19	0.32		0.70	0.86		0.72	1.00	0.03
Control Delay	61.8	24.8		58.4	28.4		56.4	40.6		87.4	43.2	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	61.8	24.8		58.4	28.4		56.4	40.6		87.4	43.2	0.1
LOS	E	C		E	C		E	D		F	D	A
Approach Delay		32.0			32.9			44.3			46.5	
Approach LOS		C			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 43.0		Intersection LOS: D	
Intersection Capacity Utilization 90.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr

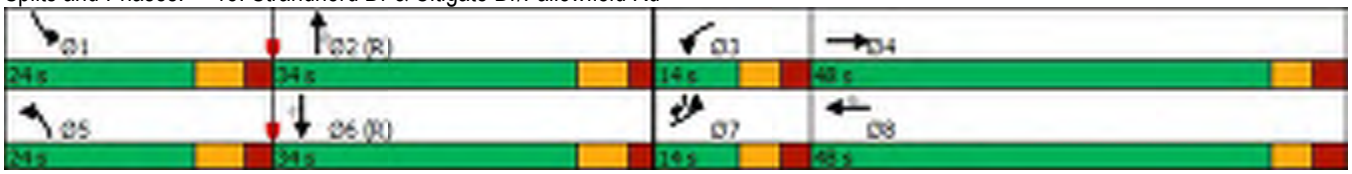


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	79	12	105	67	496	8	1177	140	440	1571	224
Future Volume (vph)	199	79	12	105	67	496	8	1177	140	440	1571	224
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.980				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3195	1669	0	1695	1701	1488	1235	3293	1517	3288	3390	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3195	1669	0	1692	1701	1488	1235	3293	1517	3288	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				360			160			143
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour 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
Heavy Vehicles (%)	5%	6%	11%	2%	7%	4%	40%	5%	2%	2%	2%	4%
Adj. Flow (vph)	199	79	12	105	67	496	8	1177	140	440	1571	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	91	0	105	67	496	8	1177	140	440	1571	224
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	14.0	48.0		14.0	48.0	48.0	24.0	34.0	34.0	24.0	34.0	14.0
Total Split (%)	11.7%	40.0%		11.7%	40.0%	40.0%	20.0%	28.3%	28.3%	20.0%	28.3%	11.7%
Maximum Green (s)	7.5	41.0		7.5	41.0	41.0	16.9	27.1	27.1	16.9	27.1	7.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	7.5	20.7		7.5	20.7	20.7	6.5	42.7	42.7	21.5	68.3	82.7
Actuated g/C Ratio	0.06	0.17		0.06	0.17	0.17	0.05	0.36	0.36	0.18	0.57	0.69
v/c Ratio	1.00	0.31		1.00	0.23	0.90	0.12	1.00	0.22	0.75	0.81	0.21
Control Delay	120.2	38.9		144.5	40.2	31.7	71.0	54.8	2.5	55.2	27.7	5.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	120.2	38.9		144.5	40.2	31.7	71.0	54.8	2.5	55.2	27.7	5.2
LOS	F	D		F	D	C	E	D	A	E	C	A
Approach Delay		94.7			50.3			49.4			30.8	
Approach LOS		F			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 115 (96%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 43.2		Intersection LOS: D	
Intersection Capacity Utilization 89.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

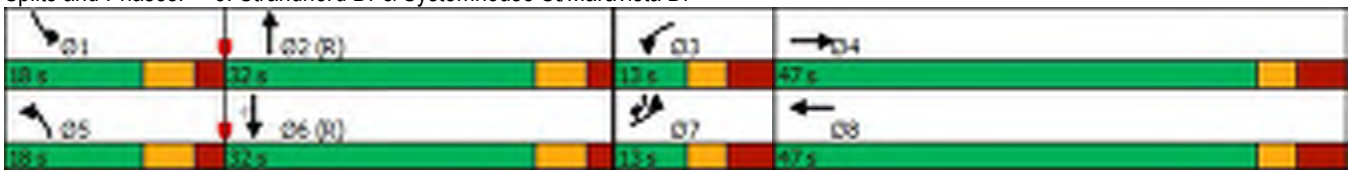


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	54	335	19	70	52	465	843	25	120	963	12
Future Volume (vph)	72	54	335	19	70	52	465	843	25	120	963	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.97	0.98		1.00	0.98		1.00	1.00		0.99		0.98
Frt		0.871			0.936			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1529	0	1695	1624	0	3288	3373	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3175	1529	0	1688	1624	0	3281	3373	0	1685	3390	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		317			38			2				111
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	29		8	8		29	4		9	9		4
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	72	54	335	19	70	52	465	843	25	120	963	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	72	389	0	19	122	0	465	868	0	120	963	12
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	13.0	47.0		13.0	47.0		18.0	32.0		18.0	32.0	13.0
Total Split (%)	11.8%	42.7%		11.8%	42.7%		16.4%	29.1%		16.4%	29.1%	11.8%
Maximum Green (s)	5.8	39.5		5.8	39.5		11.3	25.4		11.3	25.4	5.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		8			20			9			4	
Act Effct Green (s)	5.8	32.6		5.7	27.4		20.3	40.4		11.0	31.1	36.3
Actuated g/C Ratio	0.05	0.30		0.05	0.25		0.18	0.37		0.10	0.28	0.33
v/c Ratio	0.42	0.58		0.22	0.28		0.77	0.70		0.71	1.00	0.02
Control Delay	58.1	9.2		56.0	20.8		55.3	38.4		76.3	69.3	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	58.1	9.2		56.0	20.8		55.3	38.4		76.3	69.3	0.1
LOS	E	A		E	C		E	D		E	E	A
Approach Delay		16.9			25.5			44.3			69.3	
Approach LOS		B			C			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 48.3		Intersection LOS: D	
Intersection Capacity Utilization 92.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr

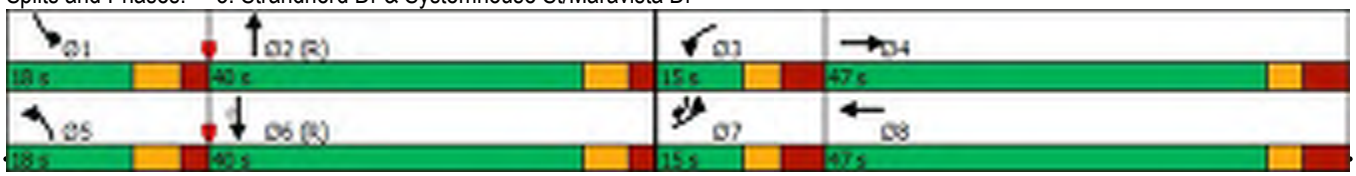


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	67	295	18	69	42	502	930	27	121	1206	64
Future Volume (vph)	171	67	295	18	69	42	502	930	27	121	1206	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.99		1.00	0.99		1.00	1.00		0.99		0.98
Frt		0.878			0.943			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1546	0	1695	1647	0	3257	3340	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3215	1546	0	1690	1647	0	3250	3340	0	1685	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		197			27			2				102
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	17		5	5		17	4		9	9		4
Confl. Bikes (#/hr)									2			2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	171	67	295	18	69	42	502	930	27	121	1206	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	362	0	18	111	0	502	957	0	121	1206	64
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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												

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	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	15.0	47.0		15.0	47.0		18.0	40.0		18.0	40.0	15.0
Total Split (%)	12.5%	39.2%		12.5%	39.2%		15.0%	33.3%		15.0%	33.3%	12.5%
Maximum Green (s)	7.8	39.5		7.8	39.5		11.3	33.4		11.3	33.4	7.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		5			15			9			4	
Act Effct Green (s)	7.8	31.0		6.7	21.9		26.1	50.3		12.0	36.2	43.4
Actuated g/C Ratio	0.06	0.26		0.06	0.18		0.22	0.42		0.10	0.30	0.36
v/c Ratio	0.80	0.66		0.19	0.34		0.71	0.68		0.72	1.18	0.11
Control Delay	82.2	22.9		58.4	31.4		47.6	46.6		87.4	114.3	1.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	82.2	22.9		58.4	31.4		47.6	46.6		87.4	114.3	1.9
LOS	F	C		E	C		D	D		F	F	A
Approach Delay		41.9			35.1			47.0			106.8	
Approach LOS		D			D			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay: 69.5		Intersection LOS: E	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr

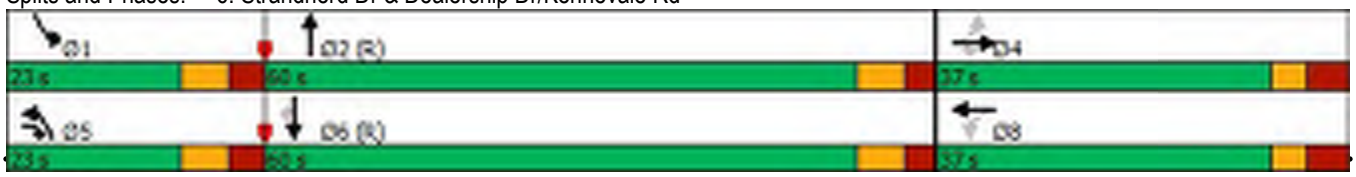


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	19	67	144	14	53	56	1248	107	58	1572	47
Future Volume (vph)	135	19	67	144	14	53	56	1248	107	58	1572	47
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00	0.99			1.00		1.00		
Frt			0.850		0.881			0.988				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1662	1526	0	3288	3343	0	1695	3390	1517
Flt Permitted	0.713			0.745			0.950			0.950		
Satd. Flow (perm)	1271	1784	1496	1302	1526	0	3288	3343	0	1694	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			37		53			9				105
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			181.9	
Travel Time (s)		11.5			39.6			48.0			9.4	
Confl. Peds. (#/hr)	1		1	1		1			2	2		
Confl. Bikes (#/hr)			1									
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	135	19	67	144	14	53	56	1248	107	58	1572	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	19	67	144	67	0	56	1355	0	58	1572	47
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	37.0	37.0	23.0	37.0	37.0		23.0	60.0		23.0	60.0	60.0
Total Split (%)	30.8%	30.8%	19.2%	30.8%	30.8%		19.2%	50.0%		19.2%	50.0%	50.0%
Maximum Green (s)	29.8	29.8	15.6	29.8	29.8		15.6	52.9		15.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		1	1			2			0	0
Act Effct Green (s)	19.1	19.1	26.4	19.1	19.1		7.4	72.3		9.5	74.3	74.3
Actuated g/C Ratio	0.16	0.16	0.22	0.16	0.16		0.06	0.60		0.08	0.62	0.62
v/c Ratio	0.67	0.07	0.19	0.70	0.23		0.28	0.67		0.44	0.75	0.05
Control Delay	62.1	39.5	15.9	63.9	16.1		56.6	20.8		59.7	13.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	62.1	39.5	15.9	63.9	16.1		56.6	20.8		59.7	13.9	0.0
LOS	E	D	B	E	B		E	C		E	B	A
Approach Delay		46.2			48.7			22.2			15.1	
Approach LOS		D			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 21.9		Intersection LOS: C	
Intersection Capacity Utilization 78.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd

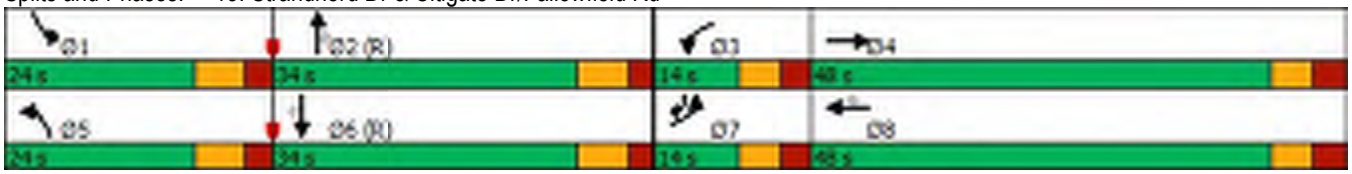


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	223	75	12	171	83	496	8	1225	155	440	1373	216
Future Volume (vph)	223	75	12	171	83	496	8	1225	155	440	1373	216
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.979				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3195	1667	0	1695	1701	1488	1235	3293	1517	3288	3390	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3195	1667	0	1692	1701	1488	1235	3293	1517	3288	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				359			160			158
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour 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
Heavy Vehicles (%)	5%	6%	11%	2%	7%	4%	40%	5%	2%	2%	2%	4%
Adj. Flow (vph)	223	75	12	171	83	496	8	1225	155	440	1373	216
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	87	0	171	83	496	8	1225	155	440	1373	216
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	14.0	48.0		14.0	48.0	48.0	24.0	34.0	34.0	24.0	34.0	14.0
Total Split (%)	11.7%	40.0%		11.7%	40.0%	40.0%	20.0%	28.3%	28.3%	20.0%	28.3%	11.7%
Maximum Green (s)	7.5	41.0		7.5	41.0	41.0	16.9	27.1	27.1	16.9	27.1	7.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	7.5	20.8		7.5	20.8	20.8	6.5	42.6	42.6	21.5	68.2	82.6
Actuated g/C Ratio	0.06	0.17		0.06	0.17	0.17	0.05	0.36	0.36	0.18	0.57	0.69
v/c Ratio	1.12	0.29		1.63	0.28	0.89	0.12	1.05	0.24	0.75	0.71	0.20
Control Delay	150.6	38.3		357.3	41.5	31.7	72.0	70.6	3.1	55.2	24.6	4.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	150.6	38.3		357.3	41.5	31.7	72.0	70.6	3.1	55.2	24.6	4.5
LOS	F	D		F	D	C	E	E	A	E	C	A
Approach Delay		119.1			107.0			63.0			29.1	
Approach LOS		F			F			E			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 115 (96%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.63			
Intersection Signal Delay: 58.9		Intersection LOS: E	
Intersection Capacity Utilization 91.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

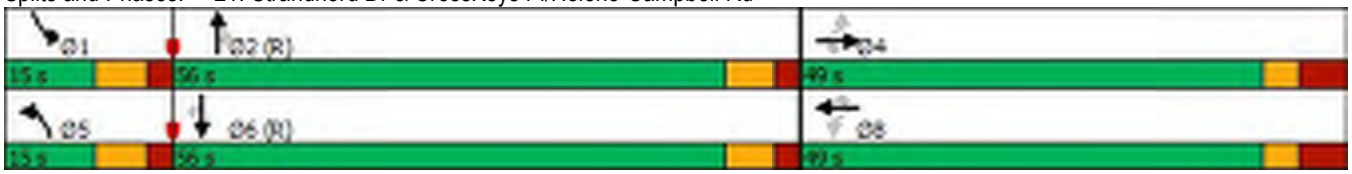


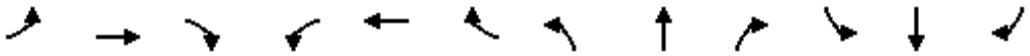
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	117	30	37	114	126	41	1089	23	122	1228	194
Future Volume (vph)	210	117	30	37	114	126	41	1089	23	122	1228	194
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	60.0		60.0	30.0		70.0	150.0		90.0	80.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	20.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1502	1679	1784	1517	3288	3202	1517	1695	3357	1517
Flt Permitted	0.684			0.682			0.950			0.950		
Satd. Flow (perm)	1218	1784	1468	1194	1784	1495	3286	3202	1479	1693	3357	1494
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			126			105			156
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.3			212.4			445.2			253.1	
Travel Time (s)		18.5			15.3			32.1			18.2	
Confl. Peds. (#/hr)	3		12	12		3	2		2	2		2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	8%	2%	2%	3%	2%
Adj. Flow (vph)	210	117	30	37	114	126	41	1089	23	122	1228	194
Shared Lane Traffic (%)												
Lane Group Flow (vph)	210	117	30	37	114	126	41	1089	23	122	1228	194
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
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	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	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	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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	48.7	48.7	48.7	48.7	48.7	48.7	11.9	31.8	31.8	11.9	31.8	31.8
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	15.0	56.0	56.0	15.0	56.0	56.0
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	12.5%	46.7%	46.7%	12.5%	46.7%	46.7%
Maximum Green (s)	41.3	41.3	41.3	41.3	41.3	41.3	8.1	49.2	49.2	8.1	49.2	49.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.2	2.2	2.3	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	7.7	7.7	6.9	6.8	6.8	6.9	6.8	6.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							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	3.0
Recall Mode	None	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		7.0	7.0
Flash Dont Walk (s)	34.0	34.0	34.0	34.0	34.0	34.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	26.2	26.2	26.2	26.2	26.2	26.2	7.0	56.3	56.3	16.1	67.9	67.9
Actuated g/C Ratio	0.22	0.22	0.22	0.22	0.22	0.22	0.06	0.47	0.47	0.13	0.57	0.57
v/c Ratio	0.79	0.30	0.08	0.14	0.29	0.30	0.22	0.73	0.03	0.54	0.65	0.21
Control Delay	64.1	39.2	0.4	35.7	39.1	7.4	38.2	44.0	4.3	58.9	21.9	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.1	39.2	0.4	35.7	39.1	7.4	38.2	44.0	4.3	58.9	21.9	9.3
LOS	E	D	A	D	D	A	D	D	A	E	C	A
Approach Delay		50.6			24.2			43.0			23.3	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 85 (71%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 33.1		Intersection LOS: C	
Intersection Capacity Utilization 81.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 21: Strandherd Dr & CrossKeys Pl/Helene-Campbell Rd

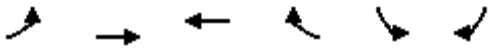




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	87	30	193	88	346	34	11	123	320	10	15
Future Volume (Veh/h)	15	87	30	193	88	346	34	11	123	320	10	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	87	30	193	88	346	34	11	123	320	10	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	434			117			626	952	102	734	621	88
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	434			117			626	952	102	734	621	88
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			87			90	95	87	0	97	98
cM capacity (veh/h)	1126			1471			340	222	953	251	346	970

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	132	281	346	168	345
Volume Left	15	193	0	34	320
Volume Right	30	0	346	123	15
cSH	1126	1471	1700	603	261
Volume to Capacity	0.01	0.13	0.20	0.28	1.32
Queue Length 95th (m)	0.3	3.4	0.0	8.6	135.0
Control Delay (s)	1.0	5.7	0.0	13.3	206.9
Lane LOS	A	A		B	F
Approach Delay (s)	1.0	2.6		13.3	206.9
Approach LOS				B	F

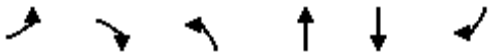
Intersection Summary				
Average Delay	59.2			
Intersection Capacity Utilization	63.7%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	25	26	111	107	1
Future Volume (Veh/h)	3	25	26	111	107	1
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	25	26	111	107	1
Pedestrians		1	1			
Lane Width (m)		3.7	3.7			
Walking Speed (m/s)		1.1	1.1			
Percent Blockage		0	0			
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	340	216	217	1	1	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	340	216	217	1	1	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	99	96	96	90	93	
cM capacity (veh/h)	505	634	633	1074	1569	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	28	137	108
Volume Left	3	0	107
Volume Right	0	111	1
cSH	617	949	1569
Volume to Capacity	0.05	0.14	0.07
Queue Length 95th (m)	1.1	3.8	1.7
Control Delay (s)	11.1	9.4	7.4
Lane LOS	B	A	A
Approach Delay (s)	11.1	9.4	7.4
Approach LOS	B	A	

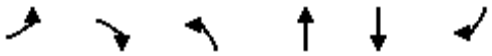
Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	155	0	1457	1458	65
Future Volume (Veh/h)	0	155	0	1457	1458	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	155	0	1457	1458	65
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				269	258	
pX, platoon unblocked	0.85	0.75	0.75			
vC, conflicting volume	2219	762	1523			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	753	3	1022			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	81	100			
cM capacity (veh/h)	295	807	504			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	155	728	728	972	551
Volume Left	0	0	0	0	0
Volume Right	155	0	0	0	65
cSH	807	1700	1700	1700	1700
Volume to Capacity	0.19	0.43	0.43	0.57	0.32
Queue Length 95th (m)	5.4	0.0	0.0	0.0	0.0
Control Delay (s)	10.5	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.5	0.0		0.0	
Approach LOS	B				

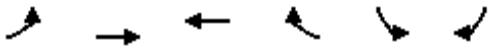
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	16	0	1457	1593	20
Future Volume (Veh/h)	0	16	0	1457	1593	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	16	0	1457	1593	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				182	344	
pX, platoon unblocked	0.85	0.75	0.75			
vC, conflicting volume	2332	806	1613			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	901	83	1155			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	236	722	452			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	16	728	728	1062	551
Volume Left	0	0	0	0	0
Volume Right	16	0	0	0	20
cSH	722	1700	1700	1700	1700
Volume to Capacity	0.02	0.43	0.43	0.62	0.32
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0
Control Delay (s)	10.1	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.1	0.0		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	57.2%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	193	94	15	29	0
Future Volume (Veh/h)	0	193	94	15	29	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	193	94	15	29	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			160			
pX, platoon unblocked						
vC, conflicting volume	109				287	94
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	109				287	94
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	1481				703	963

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	193	94	15	29
Volume Left	0	0	0	29
Volume Right	0	0	15	0
cSH	1481	1700	1700	703
Volume to Capacity	0.00	0.06	0.01	0.04
Queue Length 95th (m)	0.0	0.0	0.0	1.0
Control Delay (s)	0.0	0.0	0.0	10.3
Lane LOS				B
Approach Delay (s)	0.0	0.0		10.3
Approach LOS				B

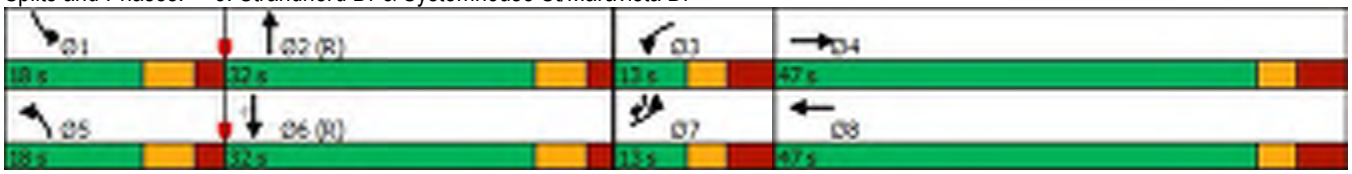
Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	65	335	19	82	52	616	769	25	120	1119	56
Future Volume (vph)	183	65	335	19	82	52	616	769	25	120	1119	56
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.97	0.98		1.00	0.99		1.00	1.00		0.99		0.98
Frt		0.874			0.942			0.995				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1535	0	1695	1639	0	3288	3369	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3177	1535	0	1689	1639	0	3282	3369	0	1683	3390	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		263			32			3				111
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	29		8	8		29	4		9	9		4
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	183	65	335	19	82	52	616	769	25	120	1119	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	400	0	19	134	0	616	794	0	120	1119	56
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	13.0	47.0		13.0	47.0		18.0	32.0		18.0	32.0	13.0
Total Split (%)	11.8%	42.7%		11.8%	42.7%		16.4%	29.1%		16.4%	29.1%	11.8%
Maximum Green (s)	5.8	39.5		5.8	39.5		11.3	25.4		11.3	25.4	5.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		8			20			9			4	
Act Effct Green (s)	5.8	29.9		5.7	22.1		27.7	42.8		11.4	26.4	31.6
Actuated g/C Ratio	0.05	0.27		0.05	0.20		0.25	0.39		0.10	0.24	0.29
v/c Ratio	1.06	0.66		0.22	0.38		0.74	0.61		0.69	1.38	0.11
Control Delay	135.0	16.3		56.0	28.4		39.2	33.5		70.3	209.7	4.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	135.0	16.3		56.0	28.4		39.2	33.5		70.3	209.7	4.1
LOS	F	B		E	C		D	C		E	F	A
Approach Delay		53.5			31.8			36.0			187.9	
Approach LOS		D			C			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.38			
Intersection Signal Delay: 95.9		Intersection LOS: F	
Intersection Capacity Utilization 106.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr

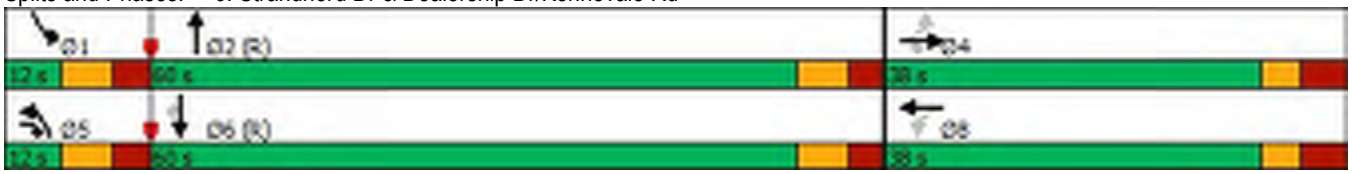


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	8	33	95	21	76	73	1207	106	52	1238	32
Future Volume (vph)	108	8	33	95	21	76	73	1207	106	52	1238	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.99	1.00			1.00	1.00		1.00		0.99
Frt			0.850		0.882			0.988				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1574	0	3288	3344	0	1695	3390	1517
Flt Permitted	0.694			0.752			0.950			0.950		
Satd. Flow (perm)	1238	1784	1497	1340	1574	0	3286	3344	0	1694	3390	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			41		76			11				115
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			181.9	
Travel Time (s)		11.5			39.6			48.0			9.4	
Confl. Peds. (#/hr)			1	1			2		1	1		2
Peak Hour 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
Adj. Flow (vph)	108	8	33	95	21	76	73	1207	106	52	1238	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	8	33	95	97	0	73	1313	0	52	1238	32
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	38.0	38.0	12.0	38.0	38.0		12.0	60.0		12.0	60.0	60.0
Total Split (%)	34.5%	34.5%	10.9%	34.5%	34.5%		10.9%	54.5%		10.9%	54.5%	54.5%
Maximum Green (s)	30.8	30.8	4.6	30.8	30.8		4.6	52.9		4.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		0	0			1			0	0
Act Effct Green (s)	16.8	16.8	23.7	16.8	16.8		7.1	66.0		8.2	67.0	67.0
Actuated g/C Ratio	0.15	0.15	0.22	0.15	0.15		0.06	0.60		0.07	0.61	0.61
v/c Ratio	0.57	0.03	0.09	0.47	0.32		0.34	0.65		0.41	0.60	0.03
Control Delay	53.6	34.8	6.1	48.1	14.9		53.7	18.6		72.6	7.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	53.6	34.8	6.1	48.1	14.9		53.7	18.6		72.6	7.3	0.1
LOS	D	C	A	D	B		D	B		E	A	A
Approach Delay		42.1			31.3			20.5			9.7	
Approach LOS		D			C			C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 33 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 17.5		Intersection LOS: B	
Intersection Capacity Utilization 70.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd

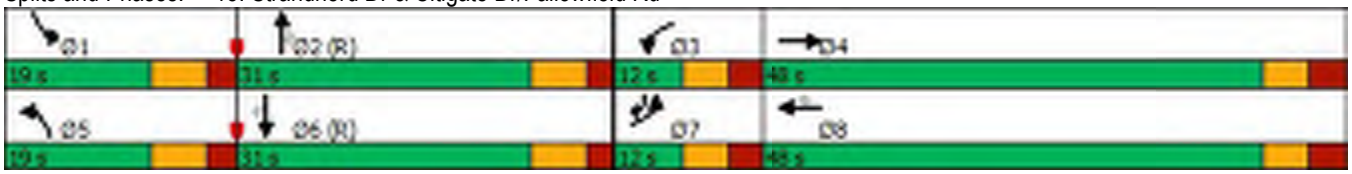


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	71	10	114	77	170	8	1255	139	202	1220	169
Future Volume (vph)	141	71	10	114	77	170	8	1255	139	202	1220	169
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99					0.98	1.00					0.97
Frt		0.981				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2819	1577	0	1662	1717	1459	1383	3390	1473	3225	3293	1446
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2798	1577	0	1662	1717	1435	1381	3390	1473	3225	3293	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				174			175			137
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)	6					6	4					4
Peak Hour 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
Heavy Vehicles (%)	19%	9%	43%	4%	6%	6%	25%	2%	5%	4%	5%	7%
Adj. Flow (vph)	141	71	10	114	77	170	8	1255	139	202	1220	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	81	0	114	77	170	8	1255	139	202	1220	169
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	12.0	48.0		12.0	48.0	48.0	19.0	31.0	31.0	19.0	31.0	12.0
Total Split (%)	10.9%	43.6%		10.9%	43.6%	43.6%	17.3%	28.2%	28.2%	17.3%	28.2%	10.9%
Maximum Green (s)	5.5	41.0		5.5	41.0	41.0	11.9	24.1	24.1	11.9	24.1	5.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	5.5	11.6		8.9	11.6	11.6	6.3	53.2	53.2	12.2	69.5	75.4
Actuated g/C Ratio	0.05	0.11		0.08	0.11	0.11	0.06	0.48	0.48	0.11	0.63	0.69
v/c Ratio	1.01	0.47		0.85	0.43	0.55	0.10	0.77	0.17	0.57	0.59	0.17
Control Delay	131.0	50.9		99.3	52.9	13.6	44.4	24.1	3.8	52.4	14.7	2.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.0	50.9		99.3	52.9	13.6	44.4	24.1	3.8	52.4	14.7	2.2
LOS	F	D		F	D	B	D	C	A	D	B	A
Approach Delay		101.7			49.0			22.2			18.2	
Approach LOS		F			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 28.0		Intersection LOS: C	
Intersection Capacity Utilization 77.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

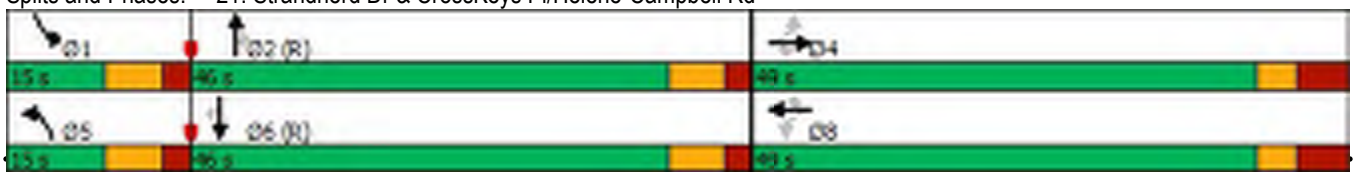


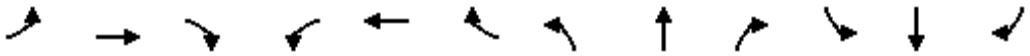
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	147	80	43	137	139	91	993	16	72	1022	247
Future Volume (vph)	259	147	80	43	137	139	91	993	16	72	1022	247
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	60.0		60.0	30.0		70.0	150.0		90.0	80.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	20.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00		0.96	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1784	1517	3288	3232	1517	1695	3390	1517
Flt Permitted	0.669			0.663			0.950			0.950		
Satd. Flow (perm)	1193	1784	1488	1178	1784	1497	3287	3232	1463	1689	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			139			115			238
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.3			212.4			445.2			253.1	
Travel Time (s)		18.5			15.3			32.1			18.2	
Confl. Peds. (#/hr)	1		7	7		1	1		7	7		1
Confl. Bikes (#/hr)			2									
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	7%	2%	2%	2%	2%
Adj. Flow (vph)	259	147	80	43	137	139	91	993	16	72	1022	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	259	147	80	43	137	139	91	993	16	72	1022	247
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
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	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	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	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	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	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	
Detector 2 Channel												

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	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	48.7	48.7	48.7	48.7	48.7	48.7	11.9	31.8	31.8	11.9	31.8	31.8
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	15.0	46.0	46.0	15.0	46.0	46.0
Total Split (%)	44.5%	44.5%	44.5%	44.5%	44.5%	44.5%	13.6%	41.8%	41.8%	13.6%	41.8%	41.8%
Maximum Green (s)	41.3	41.3	41.3	41.3	41.3	41.3	8.1	39.2	39.2	8.1	39.2	39.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.2	2.2	2.3	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	7.7	7.7	6.9	6.8	6.8	6.9	6.8	6.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							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	3.0
Recall Mode	None	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		7.0	7.0
Flash Dont Walk (s)	34.0	34.0	34.0	34.0	34.0	34.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	29.5	29.5	29.5	29.5	29.5	29.5	8.1	52.5	52.5	9.2	53.6	53.6
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.07	0.48	0.48	0.08	0.49	0.49
v/c Ratio	0.81	0.31	0.17	0.14	0.29	0.28	0.38	0.64	0.02	0.51	0.62	0.29
Control Delay	55.9	31.9	3.1	28.1	31.4	5.6	47.3	34.7	0.9	75.9	19.0	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	31.9	3.1	28.1	31.4	5.6	47.3	34.7	0.9	75.9	19.0	2.9
LOS	E	C	A	C	C	A	D	C	A	E	B	A
Approach Delay		39.9			19.7			35.2			19.1	
Approach LOS		D			B			D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 108 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 27.8		Intersection LOS: C	
Intersection Capacity Utilization 82.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 21: Strandherd Dr & CrossKeys Pl/Helene-Campbell Rd

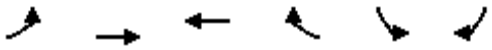




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	68	36	206	89	448	34	11	122	388	12	15
Future Volume (Veh/h)	15	68	36	206	89	448	34	11	122	388	12	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	68	36	206	89	448	34	11	122	388	12	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	537			104			638	1065	86	744	635	89
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	537			104			638	1065	86	744	635	89
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			86			90	94	87	0	96	98
cM capacity (veh/h)	1031			1488			330	189	973	244	336	969

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	119	295	448	167	415
Volume Left	15	206	0	34	388
Volume Right	36	0	448	122	15
cSH	1031	1488	1700	583	253
Volume to Capacity	0.01	0.14	0.26	0.29	1.64
Queue Length 95th (m)	0.3	3.7	0.0	9.0	198.9
Control Delay (s)	1.2	5.8	0.0	13.6	339.5
Lane LOS	A	A		B	F
Approach Delay (s)	1.2	2.3		13.6	339.5
Approach LOS				B	F

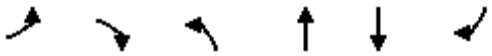
Intersection Summary				
Average Delay	100.4			
Intersection Capacity Utilization	68.5%	ICU Level of Service	C	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	22	46	92	97	0
Future Volume (Veh/h)	2	22	46	92	97	0
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	2	22	46	92	97	0
Pedestrians		2			3	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	314	196	196	3	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	314	196	196	3	0	
tC, single (s)	7.1	6.5	6.5	6.3	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.4	2.3	
p0 queue free %	100	97	93	91	94	
cM capacity (veh/h)	523	655	655	1063	1572	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	24	138	97
Volume Left	2	0	97
Volume Right	0	92	0
cSH	642	880	1572
Volume to Capacity	0.04	0.16	0.06
Queue Length 95th (m)	0.9	4.2	1.5
Control Delay (s)	10.8	9.8	7.4
Lane LOS	B	A	A
Approach Delay (s)	10.8	9.8	7.4
Approach LOS	B	A	

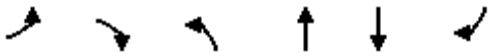
Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	137	0	1405	1412	64
Future Volume (Veh/h)	0	137	0	1405	1412	64
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	137	0	1405	1412	64
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				269	258	
pX, platoon unblocked	0.83	0.81	0.81			
vC, conflicting volume	2146	738	1476			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	962	215	1123			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	79	100			
cM capacity (veh/h)	211	642	502			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	137	702	702	941	535
Volume Left	0	0	0	0	0
Volume Right	137	0	0	0	64
cSH	642	1700	1700	1700	1700
Volume to Capacity	0.21	0.41	0.41	0.55	0.31
Queue Length 95th (m)	6.1	0.0	0.0	0.0	0.0
Control Delay (s)	12.1	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.1	0.0		0.0	
Approach LOS	B				

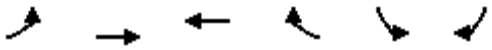
Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	59.0%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	21	0	1405	1509	40
Future Volume (Veh/h)	0	21	0	1405	1509	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	21	0	1405	1509	40
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				182	344	
pX, platoon unblocked	0.83	0.82	0.82			
vC, conflicting volume	2232	774	1549			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1078	274	1223			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	177	591	462			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	21	702	702	1006	543
Volume Left	0	0	0	0	0
Volume Right	21	0	0	0	40
cSH	591	1700	1700	1700	1700
Volume to Capacity	0.04	0.41	0.41	0.59	0.32
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0
Control Delay (s)	11.3	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	11.3	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	112	85	28	39	0
Future Volume (Veh/h)	0	112	85	28	39	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	112	85	28	39	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			160			
pX, platoon unblocked						
vC, conflicting volume	113				197	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	113				197	85
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	100
cM capacity (veh/h)	1476				792	974

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	112	85	28	39
Volume Left	0	0	0	39
Volume Right	0	0	28	0
cSH	1476	1700	1700	792
Volume to Capacity	0.00	0.05	0.02	0.05
Queue Length 95th (m)	0.0	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	0.0	9.8
Lane LOS				A
Approach Delay (s)	0.0	0.0		9.8
Approach LOS				A

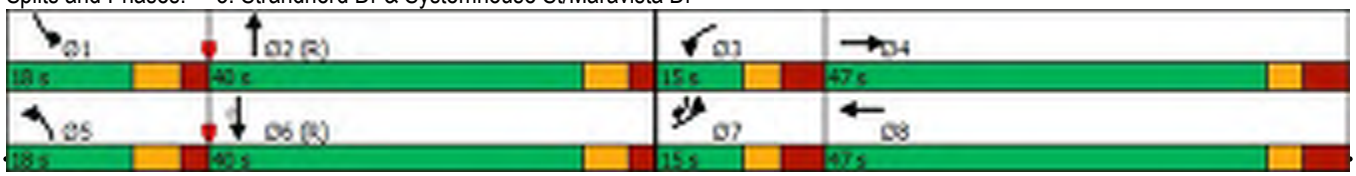
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		

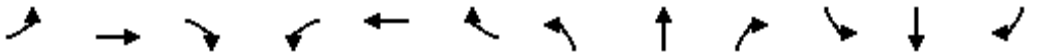
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	79	327	18	71	42	507	1170	27	121	1437	70
Future Volume (vph)	207	79	327	18	71	42	507	1170	27	121	1437	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.99		1.00	0.99		1.00	1.00		1.00		0.98
Frt		0.879			0.944			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1548	0	1695	1649	0	3257	3344	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3215	1548	0	1691	1649	0	3252	3344	0	1688	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		185			26			2				102
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	17		5	5		17	4		9	9		4
Confl. Bikes (#/hr)									2			2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	207	79	327	18	71	42	507	1170	27	121	1437	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	207	406	0	18	113	0	507	1197	0	121	1437	70
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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												

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	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	15.0	47.0		15.0	47.0		18.0	40.0		18.0	40.0	15.0
Total Split (%)	12.5%	39.2%		12.5%	39.2%		15.0%	33.3%		15.0%	33.3%	12.5%
Maximum Green (s)	7.8	39.5		7.8	39.5		11.3	33.4		11.3	33.4	7.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		5			15			9			4	
Act Effct Green (s)	7.8	31.0		6.7	22.0		26.2	50.3		12.0	36.0	43.2
Actuated g/C Ratio	0.06	0.26		0.06	0.18		0.22	0.42		0.10	0.30	0.36
v/c Ratio	0.97	0.76		0.19	0.35		0.71	0.85		0.72	1.41	0.12
Control Delay	111.0	30.6		58.4	32.0		45.1	50.9		86.7	212.9	1.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	111.0	30.6		58.4	32.0		45.1	50.9		86.7	212.9	1.5
LOS	F	C		E	C		D	D		F	F	A
Approach Delay		57.8			35.6			49.2			194.4	
Approach LOS		E			D			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.41			
Intersection Signal Delay: 108.0		Intersection LOS: F	
Intersection Capacity Utilization 101.6%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr



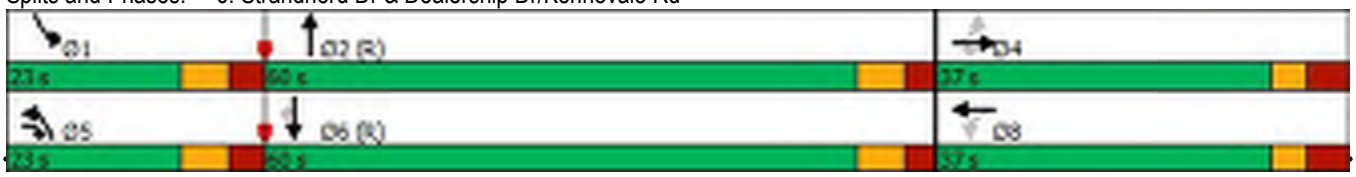


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	41	133	144	18	53	67	1445	107	58	1838	57
Future Volume (vph)	194	41	133	144	18	53	67	1445	107	58	1838	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00	0.99			1.00		1.00		
Frt			0.850		0.888			0.990				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1662	1539	0	3288	3351	0	1695	3390	1517
Flt Permitted	0.711			0.730			0.950			0.950		
Satd. Flow (perm)	1267	1784	1496	1276	1539	0	3288	3351	0	1694	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			37		53			8				105
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			181.9	
Travel Time (s)		11.5			39.6			48.0			9.4	
Confl. Peds. (#/hr)	1		1	1		1			2	2		
Confl. Bikes (#/hr)			1									
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	194	41	133	144	18	53	67	1445	107	58	1838	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	41	133	144	71	0	67	1552	0	58	1838	57
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	37.0	37.0	23.0	37.0	37.0		23.0	60.0		23.0	60.0	60.0
Total Split (%)	30.8%	30.8%	19.2%	30.8%	30.8%		19.2%	50.0%		19.2%	50.0%	50.0%
Maximum Green (s)	29.8	29.8	15.6	29.8	29.8		15.6	52.9		15.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		1	1			2			0	0
Act Effct Green (s)	23.0	23.0	30.6	23.0	23.0		7.8	68.5		9.5	67.5	67.5
Actuated g/C Ratio	0.19	0.19	0.26	0.19	0.19		0.06	0.57		0.08	0.56	0.56
v/c Ratio	0.80	0.12	0.32	0.59	0.21		0.31	0.81		0.44	0.96	0.06
Control Delay	69.1	38.3	22.4	53.2	15.5		56.9	27.5		58.8	23.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	69.1	38.3	22.4	53.2	15.5		56.9	27.5		58.8	23.8	0.0
LOS	E	D	C	D	B		E	C		E	C	A
Approach Delay		48.8			40.8			28.8			24.1	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 29.0		Intersection LOS: C	
Intersection Capacity Utilization 88.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd

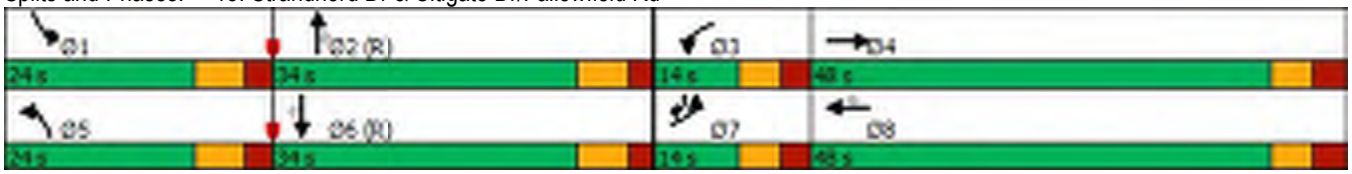


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	329	101	12	175	87	496	8	1514	179	440	1618	234
Future Volume (vph)	329	101	12	175	87	496	8	1514	179	440	1618	234
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.984				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3195	1679	0	1695	1701	1488	1235	3293	1517	3288	3390	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3195	1679	0	1693	1701	1488	1235	3293	1517	3288	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				358			160			145
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour 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
Heavy Vehicles (%)	5%	6%	11%	2%	7%	4%	40%	5%	2%	2%	2%	4%
Adj. Flow (vph)	329	101	12	175	87	496	8	1514	179	440	1618	234
Shared Lane Traffic (%)												
Lane Group Flow (vph)	329	113	0	175	87	496	8	1514	179	440	1618	234
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	14.0	48.0		14.0	48.0	48.0	24.0	34.0	34.0	24.0	34.0	14.0
Total Split (%)	11.7%	40.0%		11.7%	40.0%	40.0%	20.0%	28.3%	28.3%	20.0%	28.3%	11.7%
Maximum Green (s)	7.5	41.0		7.5	41.0	41.0	16.9	27.1	27.1	16.9	27.1	7.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	7.5	21.2		7.5	21.2	21.2	6.5	42.3	42.3	21.5	67.8	82.2
Actuated g/C Ratio	0.06	0.18		0.06	0.18	0.18	0.05	0.35	0.35	0.18	0.56	0.68
v/c Ratio	1.65	0.38		1.67	0.29	0.89	0.12	1.31	0.28	0.75	0.84	0.22
Control Delay	350.2	41.8		372.7	41.5	31.1	71.9	169.9	3.9	55.3	29.3	5.4
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	350.2	41.8		372.7	41.5	31.1	71.9	169.9	3.9	55.3	29.3	5.4
LOS	F	D		F	D	C	E	F	A	E	C	A
Approach Delay		271.4			111.1			152.0			31.8	
Approach LOS		F			F			F			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 115 (96%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.67			
Intersection Signal Delay: 103.2		Intersection LOS: F	
Intersection Capacity Utilization 103.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

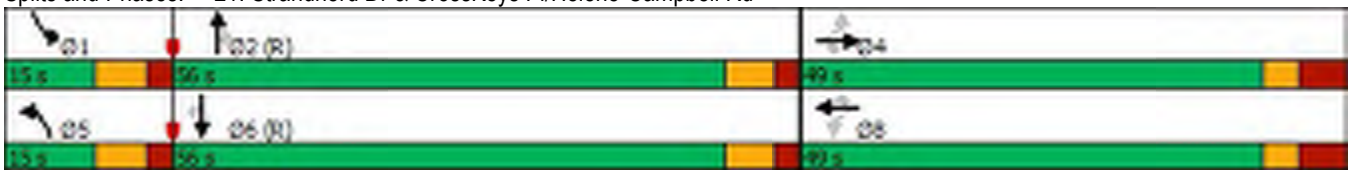


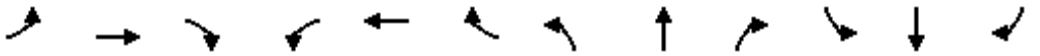
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	234	162	30	37	121	126	41	1367	23	122	1463	198
Future Volume (vph)	234	162	30	37	121	126	41	1367	23	122	1463	198
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	60.0		60.0	30.0		70.0	150.0		90.0	80.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	20.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1502	1679	1784	1517	3288	3202	1517	1695	3357	1517
Flt Permitted	0.679			0.624			0.950			0.950		
Satd. Flow (perm)	1209	1784	1468	1093	1784	1495	3286	3202	1479	1694	3357	1494
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			126			105			134
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.3			212.4			445.2			253.1	
Travel Time (s)		18.5			15.3			32.1			18.2	
Confl. Peds. (#/hr)	3		12	12		3	2		2	2		2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	8%	2%	2%	3%	2%
Adj. Flow (vph)	234	162	30	37	121	126	41	1367	23	122	1463	198
Shared Lane Traffic (%)												
Lane Group Flow (vph)	234	162	30	37	121	126	41	1367	23	122	1463	198
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
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	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	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	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	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	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	48.7	48.7	48.7	48.7	48.7	48.7	11.9	31.8	31.8	11.9	31.8	31.8
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	15.0	56.0	56.0	15.0	56.0	56.0
Total Split (%)	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%	12.5%	46.7%	46.7%	12.5%	46.7%	46.7%
Maximum Green (s)	41.3	41.3	41.3	41.3	41.3	41.3	8.1	49.2	49.2	8.1	49.2	49.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.2	2.2	2.3	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	7.7	7.7	6.9	6.8	6.8	6.9	6.8	6.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							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	3.0
Recall Mode	None	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		7.0	7.0
Flash Dont Walk (s)	34.0	34.0	34.0	34.0	34.0	34.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	28.7	28.7	28.7	28.7	28.7	28.7	7.0	54.6	54.6	15.2	65.4	65.4
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.06	0.46	0.46	0.13	0.54	0.54
v/c Ratio	0.81	0.38	0.07	0.14	0.28	0.28	0.22	0.94	0.03	0.57	0.80	0.23
Control Delay	63.2	39.1	0.3	33.8	37.0	6.8	35.0	55.0	4.6	59.6	25.5	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	39.1	0.3	33.8	37.0	6.8	35.0	55.0	4.6	59.6	25.5	12.1
LOS	E	D	A	C	D	A	C	E	A	E	C	B
Approach Delay		49.6			23.2			53.7			26.4	
Approach LOS		D			C			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 85 (71%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 38.6		Intersection LOS: D	
Intersection Capacity Utilization 96.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 21: Strandherd Dr & CrossKeys Pl/Helene-Campbell Rd

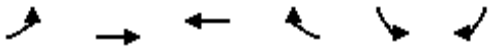




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	168	30	193	101	346	34	11	123	320	10	15
Future Volume (Veh/h)	15	168	30	193	101	346	34	11	123	320	10	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	168	30	193	101	346	34	11	123	320	10	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	447			198			720	1046	183	828	715	101
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	447			198			720	1046	183	828	715	101
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			86			88	94	86	0	97	98
cM capacity (veh/h)	1113			1375			291	194	859	210	302	954

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	213	294	346	168	345
Volume Left	15	193	0	34	320
Volume Right	30	0	346	123	15
cSH	1113	1375	1700	530	220
Volume to Capacity	0.01	0.14	0.20	0.32	1.57
Queue Length 95th (m)	0.3	3.7	0.0	10.3	164.5
Control Delay (s)	0.7	5.7	0.0	14.9	317.5
Lane LOS	A	A		B	F
Approach Delay (s)	0.7	2.6		14.9	317.5
Approach LOS				B	F

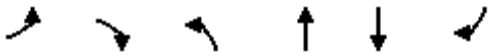
Intersection Summary				
Average Delay	83.4			
Intersection Capacity Utilization	73.2%	ICU Level of Service	D	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	25	26	111	107	1
Future Volume (Veh/h)	3	25	26	111	107	1
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	3	25	26	111	107	1
Pedestrians		1	1			
Lane Width (m)		3.7	3.7			
Walking Speed (m/s)		1.1	1.1			
Percent Blockage		0	0			
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	340	216	217	1	1	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	340	216	217	1	1	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	99	96	96	90	93	
cM capacity (veh/h)	505	634	633	1074	1569	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	28	137	108
Volume Left	3	0	107
Volume Right	0	111	1
cSH	617	949	1569
Volume to Capacity	0.05	0.14	0.07
Queue Length 95th (m)	1.1	3.8	1.7
Control Delay (s)	11.1	9.4	7.4
Lane LOS	B	A	A
Approach Delay (s)	11.1	9.4	7.4
Approach LOS	B	A	

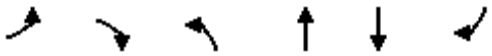
Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	155	0	1722	1736	65
Future Volume (Veh/h)	0	155	0	1722	1736	65
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	155	0	1722	1736	65
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				269	258	
pX, platoon unblocked	0.74	0.75	0.75			
vC, conflicting volume	2630	900	1801			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	970	192	1396			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	75	100			
cM capacity (veh/h)	186	611	363			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	155	861	861	1157	644
Volume Left	0	0	0	0	0
Volume Right	155	0	0	0	65
cSH	611	1700	1700	1700	1700
Volume to Capacity	0.25	0.51	0.51	0.68	0.38
Queue Length 95th (m)	7.6	0.0	0.0	0.0	0.0
Control Delay (s)	12.9	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.9	0.0		0.0	
Approach LOS	B				

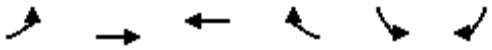
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	16	0	1722	1871	20
Future Volume (Veh/h)	0	16	0	1722	1871	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	16	0	1722	1871	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				182	344	
pX, platoon unblocked	0.74	0.75	0.75			
vC, conflicting volume	2742	946	1891			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1148	270	1527			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	142	547	326			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	16	861	861	1247	644
Volume Left	0	0	0	0	0
Volume Right	16	0	0	0	20
cSH	547	1700	1700	1700	1700
Volume to Capacity	0.03	0.51	0.51	0.73	0.38
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0
Control Delay (s)	11.8	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	11.8	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	340	118	15	29	0
Future Volume (Veh/h)	0	340	118	15	29	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	340	118	15	29	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			160			
pX, platoon unblocked						
vC, conflicting volume	133				458	118
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	133				458	118
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	100
cM capacity (veh/h)	1452				561	934

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	340	118	15	29
Volume Left	0	0	0	29
Volume Right	0	0	15	0
cSH	1452	1700	1700	561
Volume to Capacity	0.00	0.07	0.01	0.05
Queue Length 95th (m)	0.0	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	0.0	11.8
Lane LOS				B
Approach Delay (s)	0.0	0.0		11.8
Approach LOS				B

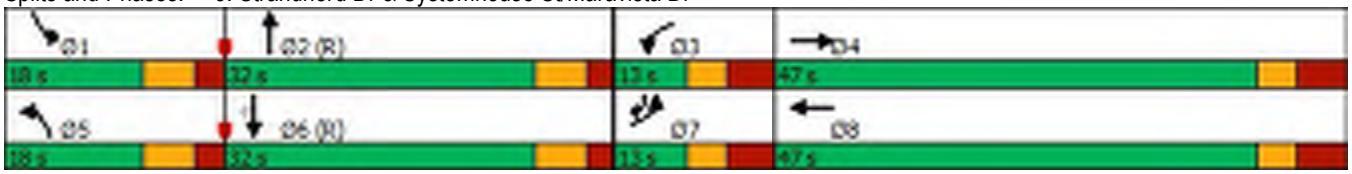
Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	28.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	183	65	335	19	82	52	616	839	25	120	1211	56
Future Volume (vph)	183	65	335	19	82	52	616	839	25	120	1211	56
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.97	0.98		1.00	0.99		1.00	1.00		0.99		0.98
Frt		0.874			0.942			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1535	0	1695	1639	0	3288	3373	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3177	1535	0	1689	1639	0	3283	3373	0	1685	3390	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		263			32			2				111
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	29		8	8		29	4		9	9		4
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	183	65	335	19	82	52	616	839	25	120	1211	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	400	0	19	134	0	616	864	0	120	1211	56
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	13.0	47.0		13.0	47.0		18.0	32.0		18.0	32.0	13.0
Total Split (%)	11.8%	42.7%		11.8%	42.7%		16.4%	29.1%		16.4%	29.1%	11.8%
Maximum Green (s)	5.8	39.5		5.8	39.5		11.3	25.4		11.3	25.4	5.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		8			20			9			4	
Act Effct Green (s)	5.8	29.9		5.7	22.1		27.7	42.8		11.4	26.4	31.6
Actuated g/C Ratio	0.05	0.27		0.05	0.20		0.25	0.39		0.10	0.24	0.29
v/c Ratio	1.06	0.66		0.22	0.38		0.74	0.66		0.69	1.49	0.11
Control Delay	135.0	16.3		56.0	28.4		38.6	34.6		69.2	257.9	4.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	135.0	16.3		56.0	28.4		38.6	34.6		69.2	257.9	4.2
LOS	F	B		E	C		D	C		E	F	A
Approach Delay		53.5			31.8			36.2			231.3	
Approach LOS		D			C			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.49			
Intersection Signal Delay: 113.9		Intersection LOS: F	
Intersection Capacity Utilization 109.0%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr

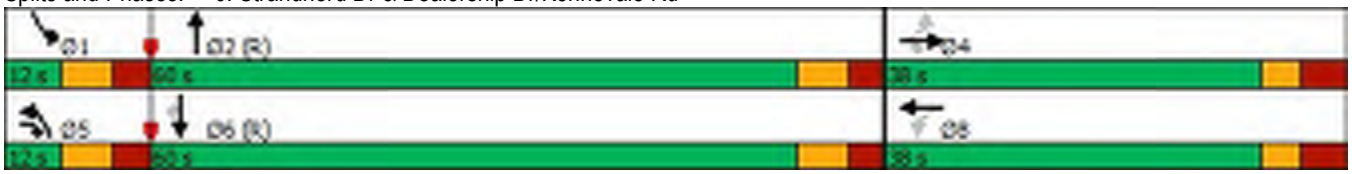


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	8	33	95	21	76	73	1294	106	52	1331	32
Future Volume (vph)	108	8	33	95	21	76	73	1294	106	52	1331	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.99	1.00			1.00	1.00		1.00		0.99
Frt			0.850		0.882			0.989				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1574	0	3288	3347	0	1695	3390	1517
Flt Permitted	0.694			0.752			0.950			0.950		
Satd. Flow (perm)	1238	1784	1497	1340	1574	0	3286	3347	0	1695	3390	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			41		76			11				115
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			181.9	
Travel Time (s)		11.5			39.6			48.0			9.4	
Confl. Peds. (#/hr)			1	1			2		1	1		2
Peak Hour 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
Adj. Flow (vph)	108	8	33	95	21	76	73	1294	106	52	1331	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	8	33	95	97	0	73	1400	0	52	1331	32
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	38.0	38.0	12.0	38.0	38.0		12.0	60.0		12.0	60.0	60.0
Total Split (%)	34.5%	34.5%	10.9%	34.5%	34.5%		10.9%	54.5%		10.9%	54.5%	54.5%
Maximum Green (s)	30.8	30.8	4.6	30.8	30.8		4.6	52.9		4.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		0	0			1			0	0
Act Effct Green (s)	16.8	16.8	23.7	16.8	16.8		7.1	66.0		8.2	67.0	67.0
Actuated g/C Ratio	0.15	0.15	0.22	0.15	0.15		0.06	0.60		0.07	0.61	0.61
v/c Ratio	0.57	0.03	0.09	0.47	0.32		0.34	0.70		0.41	0.64	0.03
Control Delay	53.6	34.8	6.1	48.1	14.9		53.7	19.8		72.6	8.3	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	53.6	34.8	6.1	48.1	14.9		53.7	19.8		72.6	8.3	0.1
LOS	D	C	A	D	B		D	B		E	A	A
Approach Delay		42.1			31.3			21.5			10.5	
Approach LOS		D			C			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 33 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 18.2		Intersection LOS: B	
Intersection Capacity Utilization 70.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd

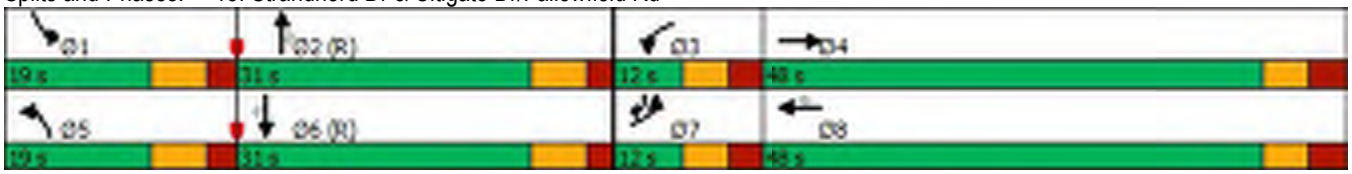


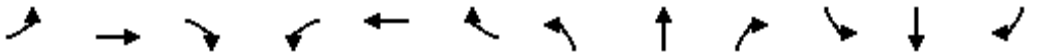
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	141	71	10	114	77	170	8	1348	139	202	1318	169
Future Volume (vph)	141	71	10	114	77	170	8	1348	139	202	1318	169
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99					0.98	1.00					0.97
Frt		0.981				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2819	1577	0	1662	1717	1459	1383	3390	1473	3225	3293	1446
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2798	1577	0	1662	1717	1435	1381	3390	1473	3225	3293	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				174			175			126
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)	6					6	4					4
Peak Hour 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
Heavy Vehicles (%)	19%	9%	43%	4%	6%	6%	25%	2%	5%	4%	5%	7%
Adj. Flow (vph)	141	71	10	114	77	170	8	1348	139	202	1318	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	81	0	114	77	170	8	1348	139	202	1318	169
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	12.0	48.0		12.0	48.0	48.0	19.0	31.0	31.0	19.0	31.0	12.0
Total Split (%)	10.9%	43.6%		10.9%	43.6%	43.6%	17.3%	28.2%	28.2%	17.3%	28.2%	10.9%
Maximum Green (s)	5.5	41.0		5.5	41.0	41.0	11.9	24.1	24.1	11.9	24.1	5.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	5.5	11.6		8.9	11.6	11.6	6.3	53.2	53.2	12.2	69.5	75.4
Actuated g/C Ratio	0.05	0.11		0.08	0.11	0.11	0.06	0.48	0.48	0.11	0.63	0.69
v/c Ratio	1.01	0.47		0.85	0.43	0.55	0.10	0.82	0.17	0.57	0.63	0.17
Control Delay	131.0	50.9		99.3	52.9	13.6	45.4	26.7	4.1	52.4	15.7	2.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.0	50.9		99.3	52.9	13.6	45.4	26.7	4.1	52.4	15.7	2.5
LOS	F	D		F	D	B	D	C	A	D	B	A
Approach Delay		101.7			49.0			24.7			18.8	
Approach LOS		F			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 28.9		Intersection LOS: C	
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd



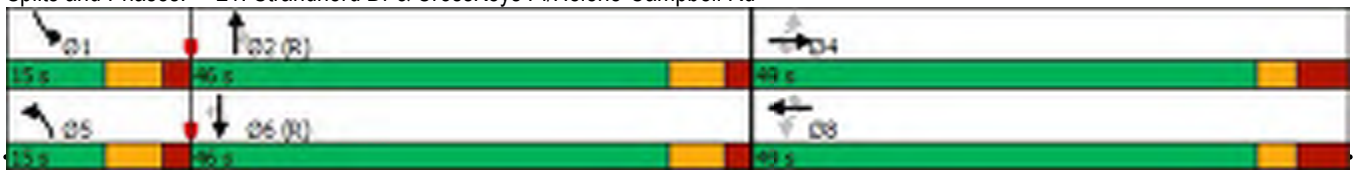


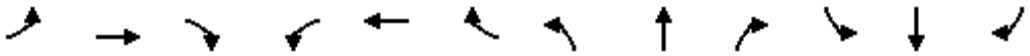
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	147	80	43	137	139	91	1069	16	72	1107	247
Future Volume (vph)	259	147	80	43	137	139	91	1069	16	72	1107	247
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	60.0		60.0	30.0		70.0	150.0		90.0	80.0		70.0
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (m)	20.0			40.0			50.0			50.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	1.00		0.99	1.00		0.96	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1784	1517	3288	3232	1517	1695	3390	1517
Flt Permitted	0.669			0.663			0.950			0.950		
Satd. Flow (perm)	1193	1784	1488	1178	1784	1497	3287	3232	1463	1689	3390	1497
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			139			115			220
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		257.3			212.4			445.2			253.1	
Travel Time (s)		18.5			15.3			32.1			18.2	
Confl. Peds. (#/hr)	1		7	7		1	1		7	7		1
Confl. Bikes (#/hr)			2									
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	7%	2%	2%	2%	2%
Adj. Flow (vph)	259	147	80	43	137	139	91	1069	16	72	1107	247
Shared Lane Traffic (%)												
Lane Group Flow (vph)	259	147	80	43	137	139	91	1069	16	72	1107	247
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
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	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	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	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	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	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	
Detector 2 Channel												

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	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Detector Phase	4	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	10.0
Minimum Split (s)	48.7	48.7	48.7	48.7	48.7	48.7	11.9	31.8	31.8	11.9	31.8	31.8
Total Split (s)	49.0	49.0	49.0	49.0	49.0	49.0	15.0	46.0	46.0	15.0	46.0	46.0
Total Split (%)	44.5%	44.5%	44.5%	44.5%	44.5%	44.5%	13.6%	41.8%	41.8%	13.6%	41.8%	41.8%
Maximum Green (s)	41.3	41.3	41.3	41.3	41.3	41.3	8.1	39.2	39.2	8.1	39.2	39.2
Yellow Time (s)	3.3	3.3	3.3	3.3	3.3	3.3	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	4.4	4.4	4.4	4.4	4.4	4.4	2.3	2.2	2.2	2.3	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.7	7.7	7.7	7.7	7.7	7.7	6.9	6.8	6.8	6.9	6.8	6.8
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							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	3.0
Recall Mode	None	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		7.0	7.0
Flash Dont Walk (s)	34.0	34.0	34.0	34.0	34.0	34.0		18.0	18.0		18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0		0	0		0	0
Act Effct Green (s)	29.5	29.5	29.5	29.5	29.5	29.5	8.1	52.5	52.5	9.2	53.6	53.6
Actuated g/C Ratio	0.27	0.27	0.27	0.27	0.27	0.27	0.07	0.48	0.48	0.08	0.49	0.49
v/c Ratio	0.81	0.31	0.17	0.14	0.29	0.28	0.38	0.69	0.02	0.51	0.67	0.29
Control Delay	55.9	31.9	3.1	28.1	31.4	5.6	47.4	35.2	1.0	75.1	20.6	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	31.9	3.1	28.1	31.4	5.6	47.4	35.2	1.0	75.1	20.6	3.8
LOS	E	C	A	C	C	A	D	D	A	E	C	A
Approach Delay		39.9			19.7			35.7			20.5	
Approach LOS		D			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 108 (98%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 28.4		Intersection LOS: C	
Intersection Capacity Utilization 85.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 21: Strandherd Dr & CrossKeys Pl/Helene-Campbell Rd

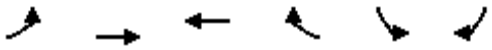




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	68	36	206	89	448	34	11	122	388	12	15
Future Volume (Veh/h)	15	68	36	206	89	448	34	11	122	388	12	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	68	36	206	89	448	34	11	122	388	12	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	537			104			638	1065	86	744	635	89
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	537			104			638	1065	86	744	635	89
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			86			90	94	87	0	96	98
cM capacity (veh/h)	1031			1488			330	189	973	244	336	969

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	119	295	448	167	415
Volume Left	15	206	0	34	388
Volume Right	36	0	448	122	15
cSH	1031	1488	1700	583	253
Volume to Capacity	0.01	0.14	0.26	0.29	1.64
Queue Length 95th (m)	0.3	3.7	0.0	9.0	198.9
Control Delay (s)	1.2	5.8	0.0	13.6	339.5
Lane LOS	A	A		B	F
Approach Delay (s)	1.2	2.3		13.6	339.5
Approach LOS				B	F

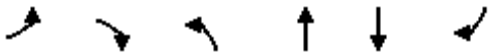
Intersection Summary				
Average Delay	100.4			
Intersection Capacity Utilization	68.5%	ICU Level of Service		C
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	22	46	92	97	0
Future Volume (Veh/h)	2	22	46	92	97	0
Sign Control		Stop	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	2	22	46	92	97	0
Pedestrians		2			3	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	314	196	196	3	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	314	196	196	3	0	
tC, single (s)	7.1	6.5	6.5	6.3	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.4	2.3	
p0 queue free %	100	97	93	91	94	
cM capacity (veh/h)	523	655	655	1063	1572	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	24	138	97
Volume Left	2	0	97
Volume Right	0	92	0
cSH	642	880	1572
Volume to Capacity	0.04	0.16	0.06
Queue Length 95th (m)	0.9	4.2	1.5
Control Delay (s)	10.8	9.8	7.4
Lane LOS	B	A	A
Approach Delay (s)	10.8	9.8	7.4
Approach LOS	B	A	

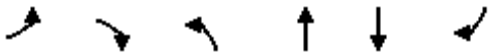
Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	137	0	1499	1521	64
Future Volume (Veh/h)	0	137	0	1499	1521	64
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	137	0	1499	1521	64
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				269	258	
pX, platoon unblocked	0.80	0.81	0.81			
vC, conflicting volume	2302	792	1585			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1072	282	1258			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	76	100			
cM capacity (veh/h)	172	581	446			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	137	750	750	1014	571
Volume Left	0	0	0	0	0
Volume Right	137	0	0	0	64
cSH	581	1700	1700	1700	1700
Volume to Capacity	0.24	0.44	0.44	0.60	0.34
Queue Length 95th (m)	6.9	0.0	0.0	0.0	0.0
Control Delay (s)	13.1	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	13.1	0.0		0.0	
Approach LOS	B				

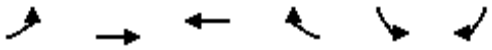
Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	62.2%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	21	0	1499	1618	40
Future Volume (Veh/h)	0	21	0	1499	1618	40
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	21	0	1499	1618	40
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				182	344	
pX, platoon unblocked	0.80	0.82	0.82			
vC, conflicting volume	2388	829	1658			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1195	341	1356			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	100			
cM capacity (veh/h)	143	535	411			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	21	750	750	1079	579
Volume Left	0	0	0	0	0
Volume Right	21	0	0	0	40
cSH	535	1700	1700	1700	1700
Volume to Capacity	0.04	0.44	0.44	0.63	0.34
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0
Control Delay (s)	12.0	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	12.0	0.0		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	58.6%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	112	85	28	39	0
Future Volume (Veh/h)	0	112	85	28	39	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	112	85	28	39	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			160			
pX, platoon unblocked						
vC, conflicting volume	113				197	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	113				197	85
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	100
cM capacity (veh/h)	1476				792	974

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	112	85	28	39
Volume Left	0	0	0	39
Volume Right	0	0	28	0
cSH	1476	1700	1700	792
Volume to Capacity	0.00	0.05	0.02	0.05
Queue Length 95th (m)	0.0	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	0.0	9.8
Lane LOS				A
Approach Delay (s)	0.0	0.0		9.8
Approach LOS				A

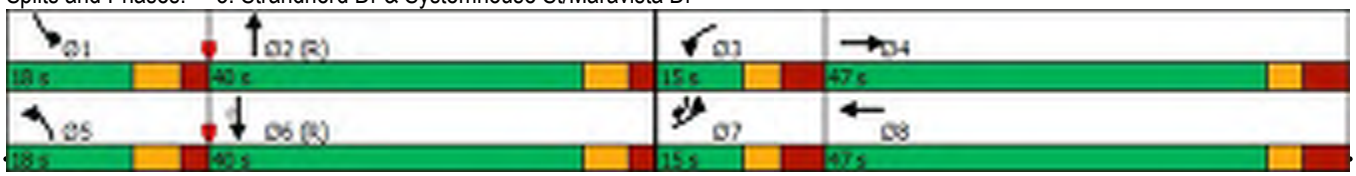
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		

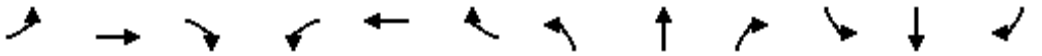
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	207	79	327	18	71	42	507	1170	27	121	1023	70
Future Volume (vph)	207	79	327	18	71	42	507	1170	27	121	1023	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.99		1.00	0.99		1.00	1.00		1.00		0.98
Frt		0.879			0.944			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1548	0	1695	1649	0	3257	3344	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3215	1548	0	1691	1649	0	3249	3344	0	1688	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		185			26			2				102
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	17		5	5		17	4		9	9		4
Confl. Bikes (#/hr)									2			2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	207	79	327	18	71	42	507	1170	27	121	1023	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	207	406	0	18	113	0	507	1197	0	121	1023	70
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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												

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	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	15.0	47.0		15.0	47.0		18.0	40.0		18.0	40.0	15.0
Total Split (%)	12.5%	39.2%		12.5%	39.2%		15.0%	33.3%		15.0%	33.3%	12.5%
Maximum Green (s)	7.8	39.5		7.8	39.5		11.3	33.4		11.3	33.4	7.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		5			15			9			4	
Act Effct Green (s)	7.8	31.0		6.7	22.0		26.2	50.3		12.0	36.0	43.2
Actuated g/C Ratio	0.06	0.26		0.06	0.18		0.22	0.42		0.10	0.30	0.36
v/c Ratio	0.97	0.76		0.19	0.35		0.71	0.85		0.72	1.00	0.12
Control Delay	111.0	30.6		58.4	32.0		45.1	50.9		86.4	45.9	1.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	111.0	30.6		58.4	32.0		45.1	50.9		86.4	45.9	1.6
LOS	F	C		E	C		D	D		F	D	A
Approach Delay		57.8			35.6			49.2			47.4	
Approach LOS		E			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 49.5		Intersection LOS: D	
Intersection Capacity Utilization 89.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr



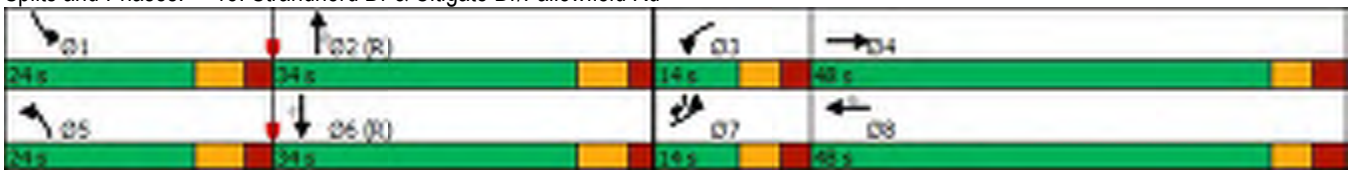


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	101	12	105	87	496	8	1166	179	440	1618	234
Future Volume (vph)	199	101	12	105	87	496	8	1166	179	440	1618	234
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.984				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3195	1679	0	1695	1701	1488	1235	3293	1517	3288	3390	1488
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3195	1679	0	1693	1701	1488	1235	3293	1517	3288	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				360			160			145
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour 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
Heavy Vehicles (%)	5%	6%	11%	2%	7%	4%	40%	5%	2%	2%	2%	4%
Adj. Flow (vph)	199	101	12	105	87	496	8	1166	179	440	1618	234
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	113	0	105	87	496	8	1166	179	440	1618	234
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	14.0	48.0		14.0	48.0	48.0	24.0	34.0	34.0	24.0	34.0	14.0
Total Split (%)	11.7%	40.0%		11.7%	40.0%	40.0%	20.0%	28.3%	28.3%	20.0%	28.3%	11.7%
Maximum Green (s)	7.5	41.0		7.5	41.0	41.0	16.9	27.1	27.1	16.9	27.1	7.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	7.5	21.1		7.5	21.1	21.1	6.5	42.3	42.3	21.5	67.9	82.3
Actuated g/C Ratio	0.06	0.18		0.06	0.18	0.18	0.05	0.35	0.35	0.18	0.57	0.69
v/c Ratio	1.00	0.38		1.00	0.29	0.89	0.12	1.00	0.28	0.75	0.84	0.22
Control Delay	120.2	42.0		144.5	41.7	30.8	71.8	52.5	3.8	55.2	29.1	5.4
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	120.2	42.0		144.5	41.7	30.8	71.8	52.5	3.8	55.2	29.1	5.4
LOS	F	D		F	D	C	E	D	A	E	C	A
Approach Delay		91.9			49.5			46.2			31.7	
Approach LOS		F			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 115 (96%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 42.6		Intersection LOS: D	
Intersection Capacity Utilization 89.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

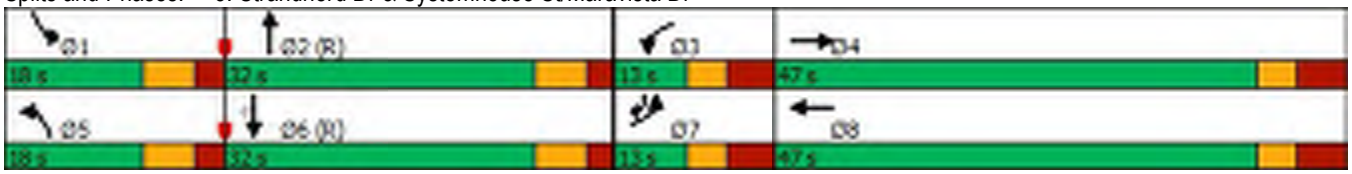


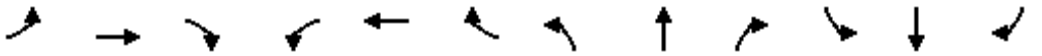
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	65	335	19	82	52	616	839	25	120	817	56
Future Volume (vph)	173	65	335	19	82	52	616	839	25	120	817	56
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.97	0.98		1.00	0.99		1.00	1.00		0.99		0.98
Frt		0.874			0.942			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1535	0	1695	1639	0	3288	3373	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3177	1535	0	1689	1639	0	3279	3373	0	1685	3390	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		263			32			2				111
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	29		8	8		29	4		9	9		4
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	173	65	335	19	82	52	616	839	25	120	817	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	400	0	19	134	0	616	864	0	120	817	56
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	13.0	47.0		13.0	47.0		18.0	32.0		18.0	32.0	13.0
Total Split (%)	11.8%	42.7%		11.8%	42.7%		16.4%	29.1%		16.4%	29.1%	11.8%
Maximum Green (s)	5.8	39.5		5.8	39.5		11.3	25.4		11.3	25.4	5.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		8			20			9			4	
Act Effct Green (s)	5.8	29.9		5.7	22.1		27.7	42.8		11.4	26.4	31.6
Actuated g/C Ratio	0.05	0.27		0.05	0.20		0.25	0.39		0.10	0.24	0.29
v/c Ratio	1.00	0.66		0.22	0.38		0.74	0.66		0.69	1.00	0.11
Control Delay	121.5	16.3		56.0	28.4		38.6	34.6		68.8	72.9	4.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	121.5	16.3		56.0	28.4		38.6	34.6		68.8	72.9	4.7
LOS	F	B		E	C		D	C		E	E	A
Approach Delay		48.0			31.8			36.2			68.6	
Approach LOS		D			C			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 48.2		Intersection LOS: D	
Intersection Capacity Utilization 97.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr





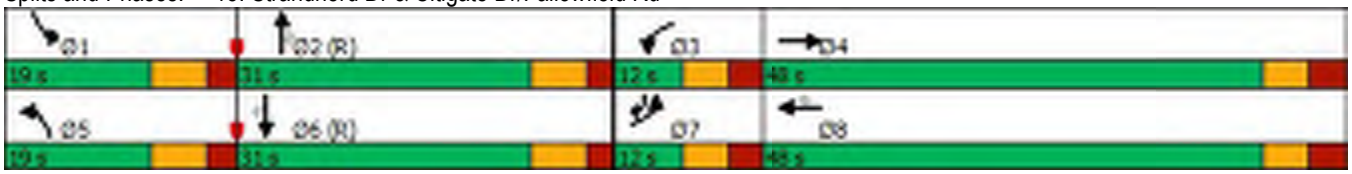
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	71	10	114	77	170	8	1348	139	202	1318	169
Future Volume (vph)	140	71	10	114	77	170	8	1348	139	202	1318	169
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	65.0		0.0	125.0		100.0	70.0		90.0	120.0		80.0
Storage Lanes	2		0	1		1	1		1	2		1
Taper Length (m)	60.0			50.0			50.0			80.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99					0.98	1.00					0.97
Frt		0.981				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2819	1577	0	1662	1717	1459	1383	3390	1473	3225	3293	1446
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	2798	1577	0	1662	1717	1435	1381	3390	1473	3225	3293	1403
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7				174			175			126
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		255.8			268.7			253.1			441.3	
Travel Time (s)		18.4			19.3			18.2			31.8	
Confl. Peds. (#/hr)	6					6	4					4
Peak Hour 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
Heavy Vehicles (%)	19%	9%	43%	4%	6%	6%	25%	2%	5%	4%	5%	7%
Adj. Flow (vph)	140	71	10	114	77	170	8	1348	139	202	1318	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	81	0	114	77	170	8	1348	139	202	1318	169
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		1.6			1.6			1.6			1.6	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	97		97	97		97	97		97	97		97
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	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	0.6	2.0	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	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	8	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0	10.0	5.0	10.0	10.0	5.0	10.0	5.0
Minimum Split (s)	11.5	48.0		11.5	48.0	48.0	12.1	29.9	29.9	12.1	29.9	11.5
Total Split (s)	12.0	48.0		12.0	48.0	48.0	19.0	31.0	31.0	19.0	31.0	12.0
Total Split (%)	10.9%	43.6%		10.9%	43.6%	43.6%	17.3%	28.2%	28.2%	17.3%	28.2%	10.9%
Maximum Green (s)	5.5	41.0		5.5	41.0	41.0	11.9	24.1	24.1	11.9	24.1	5.5
Yellow Time (s)	3.7	3.7		3.7	3.7	3.7	4.6	4.6	4.6	4.6	4.6	3.7
All-Red Time (s)	2.8	3.3		2.8	3.3	3.3	2.5	2.3	2.3	2.5	2.3	2.8
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	7.0		6.5	7.0	7.0	7.1	6.9	6.9	7.1	6.9	6.5
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead
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	C-Max	C-Max	None	C-Max	None
Walk Time (s)		7.0			7.0	7.0		7.0	7.0		7.0	
Flash Dont Walk (s)		34.0			34.0	34.0		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0			0	0		0	0		0	
Act Effct Green (s)	5.5	11.6		8.9	11.6	11.6	6.3	53.2	53.2	12.2	69.5	75.4
Actuated g/C Ratio	0.05	0.11		0.08	0.11	0.11	0.06	0.48	0.48	0.11	0.63	0.69
v/c Ratio	1.00	0.47		0.85	0.43	0.55	0.10	0.82	0.17	0.57	0.63	0.17
Control Delay	129.4	50.9		99.3	52.9	13.6	45.4	26.7	4.1	52.4	15.7	2.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	129.4	50.9		99.3	52.9	13.6	45.4	26.7	4.1	52.4	15.7	2.5
LOS	F	D		F	D	B	D	C	A	D	B	A
Approach Delay		100.6			49.0			24.7			18.8	
Approach LOS		F			D			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 28.8 Intersection LOS: C
Intersection Capacity Utilization 80.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 18: Strandherd Dr & Citigate Dr/Fallowfield Rd

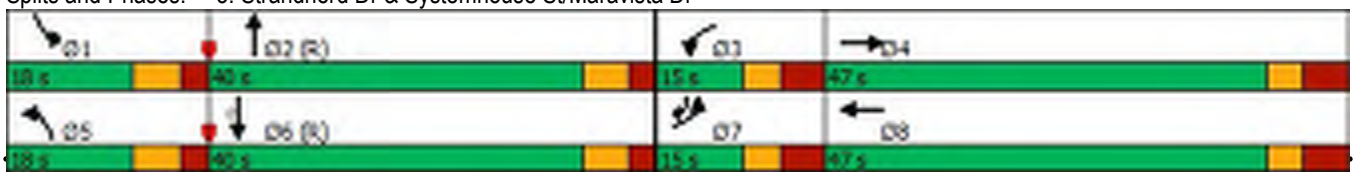


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	79	327	18	71	42	372	1271	27	121	1437	70
Future Volume (vph)	106	79	327	18	71	42	372	1271	27	121	1437	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.98	0.99		1.00	0.99		1.00	1.00		1.00		0.98
Frt		0.879			0.944			0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1548	0	1695	1649	0	3257	3344	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3215	1548	0	1691	1649	0	3252	3344	0	1689	3390	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		185			26			2				102
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	17		5	5		17	4		9	9		4
Confl. Bikes (#/hr)									2			2
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	106	79	327	18	71	42	372	1271	27	121	1437	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	406	0	18	113	0	372	1298	0	121	1437	70
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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												

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	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	15.0	47.0		15.0	47.0		18.0	40.0		18.0	40.0	15.0
Total Split (%)	12.5%	39.2%		12.5%	39.2%		15.0%	33.3%		15.0%	33.3%	12.5%
Maximum Green (s)	7.8	39.5		7.8	39.5		11.3	33.4		11.3	33.4	7.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		5			15			9			4	
Act Effct Green (s)	7.6	30.8		6.7	22.0		19.7	50.5		12.0	42.7	49.7
Actuated g/C Ratio	0.06	0.26		0.06	0.18		0.16	0.42		0.10	0.36	0.41
v/c Ratio	0.51	0.76		0.19	0.35		0.70	0.92		0.72	1.19	0.10
Control Delay	63.4	30.8		58.4	32.0		60.7	50.1		86.8	113.6	1.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	63.4	30.8		58.4	32.0		60.7	50.1		86.8	113.6	1.3
LOS	E	C		E	C		E	D		F	F	A
Approach Delay		37.6			35.6			52.4			106.8	
Approach LOS		D			D			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 72.4		Intersection LOS: E	
Intersection Capacity Utilization 97.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr

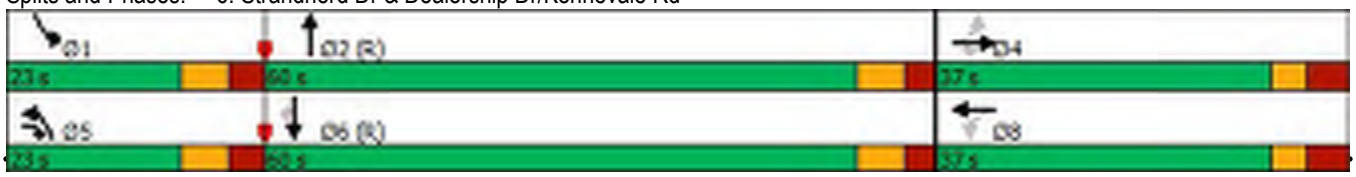


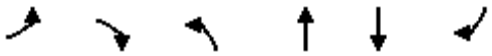
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	41	133	144	18	53	67	1445	107	58	1838	57
Future Volume (vph)	194	41	133	144	18	53	67	1445	107	58	1838	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	1.00		0.99	1.00	0.99			1.00		1.00		
Frt			0.850		0.888			0.990				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1662	1539	0	3288	3351	0	1695	3390	1517
Flt Permitted	0.711			0.730			0.950			0.950		
Satd. Flow (perm)	1267	1784	1496	1276	1539	0	3288	3351	0	1694	3390	1517
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			37		53			8				105
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			268.5	
Travel Time (s)		11.5			39.6			48.0			13.8	
Confl. Peds. (#/hr)	1		1	1		1			2	2		
Confl. Bikes (#/hr)			1									
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	194	41	133	144	18	53	67	1445	107	58	1838	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	41	133	144	71	0	67	1552	0	58	1838	57
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	37.0	37.0	23.0	37.0	37.0		23.0	60.0		23.0	60.0	60.0
Total Split (%)	30.8%	30.8%	19.2%	30.8%	30.8%		19.2%	50.0%		19.2%	50.0%	50.0%
Maximum Green (s)	29.8	29.8	15.6	29.8	29.8		15.6	52.9		15.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		1	1			2			0	0
Act Effct Green (s)	23.0	23.0	30.6	23.0	23.0		7.8	68.5		9.5	67.5	67.5
Actuated g/C Ratio	0.19	0.19	0.26	0.19	0.19		0.06	0.57		0.08	0.56	0.56
v/c Ratio	0.80	0.12	0.32	0.59	0.21		0.31	0.81		0.44	0.96	0.06
Control Delay	69.1	38.3	22.4	53.2	15.5		56.9	27.5		71.0	19.9	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	69.1	38.3	22.4	53.2	15.5		56.9	27.5		71.0	19.9	0.2
LOS	E	D	C	D	B		E	C		E	B	A
Approach Delay		48.8			40.8			28.8			20.9	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 27.4		Intersection LOS: C	
Intersection Capacity Utilization 88.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd



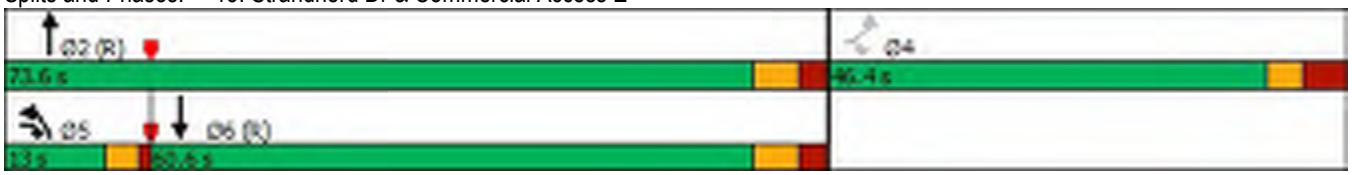


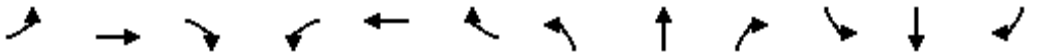
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	101	155	135	1587	1736	65
Future Volume (vph)	101	155	135	1587	1736	65
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	60.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.6		20.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1695	1517	1695	3390	3373	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1695	1517	1695	3390	3373	0
Right Turn on Red		No				Yes
Satd. Flow (RTOR)					4	
Link Speed (k/h)	50			70	70	
Link Distance (m)	90.1			268.5	257.6	
Travel Time (s)	6.5			13.8	13.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	101	155	135	1587	1736	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	101	155	135	1587	1801	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	6.1	6.1	6.1	30.5	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	6.1	6.1	1.8	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	5	5	2	6	
Switch Phase						
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	36.4	9.0	9.0	16.9	30.9	
Total Split (s)	46.4	13.0	13.0	73.6	60.6	
Total Split (%)	38.7%	10.8%	10.8%	61.3%	50.5%	
Maximum Green (s)	39.0	9.0	9.0	66.7	53.7	
Yellow Time (s)	3.3	3.0	3.0	4.2	4.2	
All-Red Time (s)	4.1	1.0	1.0	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.4	4.0	4.0	6.9	6.9	
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	22.0				17.0	
Pedestrian Calls (#/hr)	5				5	
Act Effct Green (s)	15.3	40.7	18.0	90.4	68.4	
Actuated g/C Ratio	0.13	0.34	0.15	0.75	0.57	
v/c Ratio	0.47	0.30	0.53	0.62	0.94	
Control Delay	53.9	29.4	51.0	9.2	15.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.9	29.4	51.0	9.2	15.4	
LOS	D	C	D	A	B	
Approach Delay	39.1			12.5	15.4	
Approach LOS	D			B	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 4 (3%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 15.7		Intersection LOS: B	
Intersection Capacity Utilization 84.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 13: Strandherd Dr & Commercial Access E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	168	30	60	101	346	34	11	22	320	10	15
Future Volume (Veh/h)	15	168	30	60	101	346	34	11	22	320	10	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	15	168	30	60	101	346	34	11	22	320	10	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	447			198			454	780	183	462	449	101
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	447			198			454	780	183	462	449	101
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			96			93	96	97	31	98	98
cM capacity (veh/h)	1113			1375			478	308	859	463	477	954

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	213	161	346	67	345
Volume Left	15	60	0	34	320
Volume Right	30	0	346	22	15
cSH	1113	1375	1700	506	474
Volume to Capacity	0.01	0.04	0.20	0.13	0.73
Queue Length 95th (m)	0.3	1.0	0.0	3.4	44.7
Control Delay (s)	0.7	3.1	0.0	13.2	30.3
Lane LOS	A	A		B	D
Approach Delay (s)	0.7	1.0		13.2	30.3
Approach LOS				B	D

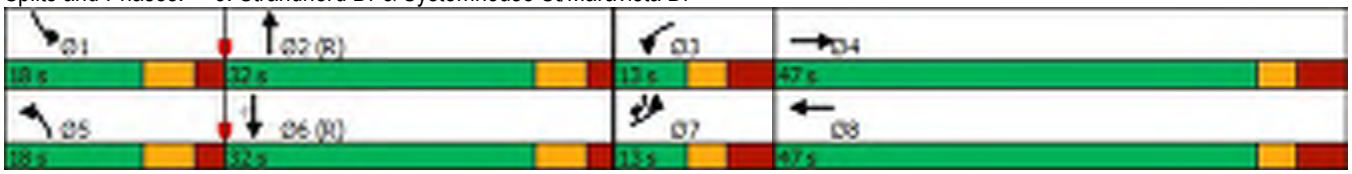
Intersection Summary				
Average Delay	10.6			
Intersection Capacity Utilization	58.1%	ICU Level of Service	B	
Analysis Period (min)	15			

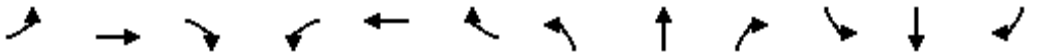
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	65	335	19	82	52	465	939	25	120	1211	56
Future Volume (vph)	83	65	335	19	82	52	465	939	25	120	1211	56
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	80.0		0.0	20.0		0.0	125.0		0.0	150.0		60.0
Storage Lanes	2		0	1		0	2		0	1		1
Taper Length (m)	40.0			40.0			70.0			40.0		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor	0.97	0.98		1.00	0.99		1.00	1.00		0.99		0.98
Frt		0.874			0.942			0.996				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3288	1535	0	1695	1639	0	3288	3373	0	1695	3390	1517
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3177	1535	0	1689	1639	0	3283	3373	0	1686	3390	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		263			32			2				111
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		156.5			408.1			257.6			445.2	
Travel Time (s)		11.3			36.7			13.2			22.9	
Confl. Peds. (#/hr)	29		8	8		29	4		9	9		4
Peak Hour 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
Heavy Vehicles (%)	2%	2%	2%	2%	2%	5%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	83	65	335	19	82	52	465	939	25	120	1211	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	400	0	19	134	0	465	964	0	120	1211	56
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)		7.4			7.4			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	6.1	10.0		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
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)	6.1	0.6		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
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8		5	2		1	6	7
Permitted Phases												6
Detector Phase	7	4		3	8		5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	10.0		5.0	10.0		5.0	10.0		5.0	10.0	5.0
Minimum Split (s)	12.2	46.5		12.2	46.5		11.7	30.6		11.7	30.6	12.2
Total Split (s)	13.0	47.0		13.0	47.0		18.0	32.0		18.0	32.0	13.0
Total Split (%)	11.8%	42.7%		11.8%	42.7%		16.4%	29.1%		16.4%	29.1%	11.8%
Maximum Green (s)	5.8	39.5		5.8	39.5		11.3	25.4		11.3	25.4	5.8
Yellow Time (s)	3.3	3.3		3.3	3.3		4.2	4.2		4.2	4.2	3.3
All-Red Time (s)	3.9	4.2		3.9	4.2		2.5	2.4		2.5	2.4	3.9
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)	7.2	7.5		7.2	7.5		6.7	6.6		6.7	6.6	7.2
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
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	C-Max		None	C-Max	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		32.0			32.0			17.0			17.0	
Pedestrian Calls (#/hr)		8			20			9			4	
Act Effct Green (s)	5.8	27.3		5.7	22.1		23.0	45.4		11.4	33.7	38.9
Actuated g/C Ratio	0.05	0.25		0.05	0.20		0.21	0.41		0.10	0.31	0.35
v/c Ratio	0.48	0.69		0.22	0.38		0.68	0.69		0.69	1.17	0.09
Control Delay	60.2	17.5		56.0	28.4		45.9	35.2		68.5	119.0	4.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	60.2	17.5		56.0	28.4		45.9	35.2		68.5	119.0	4.1
LOS	E	B		E	C		D	D		E	F	A
Approach Delay		24.8			31.8			38.6			110.0	
Approach LOS		C			C			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.17			
Intersection Signal Delay: 65.1		Intersection LOS: E	
Intersection Capacity Utilization 104.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Strandherd Dr & Systemhouse St/Maravista Dr



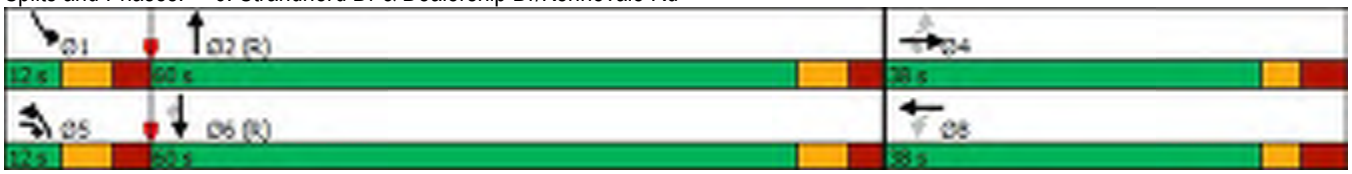


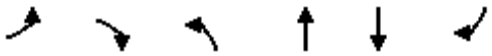
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	8	33	95	21	76	73	1294	106	52	1331	32
Future Volume (vph)	108	8	33	95	21	76	73	1294	106	52	1331	32
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	70.0		70.0	60.0		0.0	70.0		0.0	50.0		110.0
Storage Lanes	1		1	1		0	2		0	1		1
Taper Length (m)	30.0			20.0			70.0			60.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor			0.99	1.00			1.00	1.00		1.00		0.99
Frt			0.850		0.882			0.989				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1695	1784	1517	1695	1574	0	3288	3347	0	1695	3390	1517
Flt Permitted	0.694			0.752			0.950			0.950		
Satd. Flow (perm)	1238	1784	1497	1340	1574	0	3286	3347	0	1695	3390	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			41		76			11				115
Link Speed (k/h)		50			40			70			70	
Link Distance (m)		159.8			439.9			933.3			268.5	
Travel Time (s)		11.5			39.6			48.0			13.8	
Confl. Peds. (#/hr)			1	1			2		1	1		2
Peak Hour 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
Adj. Flow (vph)	108	8	33	95	21	76	73	1294	106	52	1331	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	108	8	33	95	97	0	73	1400	0	52	1331	32
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)		3.7			3.7			7.4			7.4	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.9			4.9			4.9			4.9	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24		14	24		14	24		14	24		14
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)	6.1	30.5	6.1	6.1	30.5		6.1	30.5		6.1	30.5	6.1
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)	6.1	1.8	6.1	6.1	1.8		6.1	1.8		6.1	1.8	6.1
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)		28.7			28.7			28.7			28.7	
Detector 2 Size(m)		1.8			1.8			1.8			1.8	
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	pm+ov	Perm	NA		Prot	NA		Prot	NA	Perm

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8								6
Detector Phase	4	4	5	8	8		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	10.0	10.0		5.0	10.0		5.0	10.0	10.0
Minimum Split (s)	36.2	36.2	12.4	36.2	36.2		12.4	32.1		12.4	32.1	32.1
Total Split (s)	38.0	38.0	12.0	38.0	38.0		12.0	60.0		12.0	60.0	60.0
Total Split (%)	34.5%	34.5%	10.9%	34.5%	34.5%		10.9%	54.5%		10.9%	54.5%	54.5%
Maximum Green (s)	30.8	30.8	4.6	30.8	30.8		4.6	52.9		4.6	52.9	52.9
Yellow Time (s)	3.3	3.3	4.2	3.3	3.3		4.2	4.2		4.2	4.2	4.2
All-Red Time (s)	3.9	3.9	3.2	3.9	3.9		3.2	2.9		3.2	2.9	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	7.2	7.2	7.4	7.2	7.2		7.4	7.1		7.4	7.1	7.1
Lead/Lag			Lead				Lead	Lag		Lead	Lag	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		None	C-Max		None	C-Max	C-Max
Walk Time (s)	7.0	7.0		7.0	7.0			7.0			7.0	7.0
Flash Dont Walk (s)	22.0	22.0		22.0	22.0			18.0			18.0	18.0
Pedestrian Calls (#/hr)	1	1		0	0			1			0	0
Act Effct Green (s)	16.8	16.8	23.7	16.8	16.8		7.1	66.0		8.2	67.0	67.0
Actuated g/C Ratio	0.15	0.15	0.22	0.15	0.15		0.06	0.60		0.07	0.61	0.61
v/c Ratio	0.57	0.03	0.09	0.47	0.32		0.34	0.70		0.41	0.64	0.03
Control Delay	53.6	34.8	6.1	48.1	14.9		53.7	19.8		71.0	3.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	53.6	34.8	6.1	48.1	14.9		53.7	19.8		71.0	3.9	0.0
LOS	D	C	A	D	B		D	B		E	A	A
Approach Delay		42.1			31.3			21.5			6.3	
Approach LOS		D			C			C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 33 (30%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 16.4		Intersection LOS: B	
Intersection Capacity Utilization 70.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 6: Strandherd Dr & Dealership Dr/Kennevale Rd



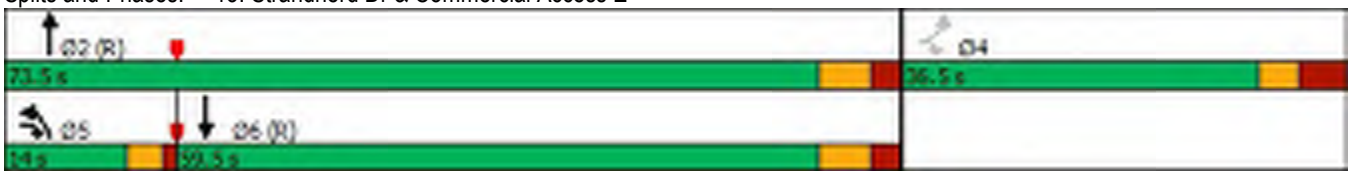


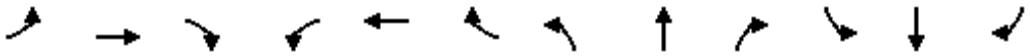
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	100	137	151	1348	1521	64
Future Volume (vph)	100	137	151	1348	1521	64
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	60.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.6		20.0			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt		0.850			0.994	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1695	1517	1695	3390	3370	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1695	1517	1695	3390	3370	0
Right Turn on Red		No				Yes
Satd. Flow (RTOR)					5	
Link Speed (k/h)	50			70	70	
Link Distance (m)	90.1			268.5	257.6	
Travel Time (s)	6.5			13.8	13.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	100	137	151	1348	1521	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	100	137	151	1348	1585	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			7.4	7.4	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.9			4.9	4.9	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.06	1.06	1.06	1.06
Turning Speed (k/h)	24	14	24			14
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	6.1	6.1	6.1	30.5	30.5	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	6.1	6.1	6.1	1.8	1.8	
Detector 1 Type	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	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				28.7	28.7	
Detector 2 Size(m)				1.8	1.8	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	pm+ov	Prot	NA	NA	
Protected Phases		5	5	2	6	
Permitted Phases	4	4				

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	5	5	2	6	
Switch Phase						
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	
Minimum Split (s)	36.4	9.0	9.0	16.9	30.9	
Total Split (s)	36.5	14.0	14.0	73.5	59.5	
Total Split (%)	33.2%	12.7%	12.7%	66.8%	54.1%	
Maximum Green (s)	29.1	10.0	10.0	66.6	52.6	
Yellow Time (s)	3.3	3.0	3.0	4.2	4.2	
All-Red Time (s)	4.1	1.0	1.0	2.7	2.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.4	4.0	4.0	6.9	6.9	
Lead/Lag		Lead	Lead		Lag	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0				7.0	
Flash Dont Walk (s)	22.0				17.0	
Pedestrian Calls (#/hr)	5				5	
Act Effct Green (s)	14.9	37.7	15.4	80.8	61.4	
Actuated g/C Ratio	0.14	0.34	0.14	0.73	0.56	
v/c Ratio	0.44	0.26	0.64	0.54	0.84	
Control Delay	47.7	26.3	52.8	9.6	15.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.7	26.3	52.8	9.6	15.2	
LOS	D	C	D	A	B	
Approach Delay	35.3			13.9	15.2	
Approach LOS	D			B	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 20 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 16.1		Intersection LOS: B	
Intersection Capacity Utilization 78.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 13: Strandherd Dr & Commercial Access E





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	68	36	56	89	448	34	11	23	388	12	15
Future Volume (Veh/h)	15	68	36	56	89	448	34	11	23	388	12	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	15	68	36	56	89	448	34	11	23	388	12	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)					156							
pX, platoon unblocked												
vC, conflicting volume	537			104			338	765	86	346	335	89
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	537			104			338	765	86	346	335	89
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			96			94	97	98	30	98	98
cM capacity (veh/h)	1031			1488			573	316	973	556	555	969

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	119	145	448	68	415
Volume Left	15	56	0	34	388
Volume Right	36	0	448	23	15
cSH	1031	1488	1700	577	565
Volume to Capacity	0.01	0.04	0.26	0.12	0.74
Queue Length 95th (m)	0.3	0.9	0.0	3.0	47.4
Control Delay (s)	1.2	3.1	0.0	12.1	27.0
Lane LOS	A	A		B	D
Approach Delay (s)	1.2	0.8		12.1	27.0
Approach LOS				B	D

Intersection Summary				
Average Delay	10.6			
Intersection Capacity Utilization	52.5%	ICU Level of Service		A
Analysis Period (min)	15			

APPENDIX J

MMLOS Review

Segment MMLOS Analysis

This section provides a review of the boundary streets Strandherd Drive and Systemhouse Street using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015 and the 2017 MMLOS Addendum, were used to evaluate the levels of service for each alternative mode of transportation, based on the targets for areas within an 'Employment Area'.

Exhibit 4 of the *MMLOS Guidelines* has been used to evaluate the segment pedestrian level of service (PLOS) of Strandherd Drive and Systemhouse Street. Exhibit 22 suggests a target PLOS C for all roadways within Employment Areas. The results of the segment PLOS analysis are summarized in **Table 1**.

Exhibit 11 of the *MMLOS Guidelines* has been used to evaluate the segment bicycle level of service (BLOS) of Strandherd Drive and Systemhouse Street. Within Employment Areas, Exhibit 22 suggests a target BLOS B for arterial roadways with a crosstown bikeway designation and BLOS E for collector roadways with no cycling designation. The results of the segment BLOS analysis are summarized in **Table 2**.

Exhibit 15 of the *MMLOS Guidelines* has been used to evaluate the segment transit level of service (TLOS) of Strandherd Drive and Systemhouse Street. Within Employment Areas, Exhibit 22 does not identify a target TLOS for roadways that are not in the City's Transit Priority Network.

Exhibit 20 of the *MMLOS Guidelines* has been used to evaluate the segment truck level of service (TkLOS) of Strandherd Drive and Systemhouse Street. Within Employment Areas, Exhibit 22 suggests a target TkLOS B for arterial roadways with a truck route designation and TkLOS D for collector roadways with no truck route designation. The results of the segment TkLOS analysis are summarized in **Table 3**.

Table 1: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed[1]	PLOS
Strandherd Dr (east side, Systemhouse St/Maravista Dr to Dealership Dr/Kennevale Dr)					
1.8m	3.8m	> 3,000 vpd	No	80 km/h	E
Strandherd Dr (west side, Systemhouse St/Maravista Dr to Dealership Dr/Kennevale Dr)					
1.8m	3.8m	> 3,000 vpd	No	80 km/h	E
Systemhouse St (north side, Strandherd Dr to Citigate Dr)					
2.0m	0m	< 3,000 vpd	N/a	60 km/h	C
Systemhouse St (south side, Strandherd Dr to Citigate Dr)					
2.0m	0m	< 3,000 vpd	N/a	60 km/h	C

1. Operating speed taken as the speed limit plus 10 km/h.

Table 2: BLOS Segment Analysis

Road Class	Type of Route	Type of Bikeway	Travel Lanes	Operating Speed	BLOS
Strandherd Dr (Systemhouse St/Maravista Dr to Dealership Dr/Kennevale Dr)					
Arterial	Crosstown	Cycle track	4	80 km/h	A
Systemhouse St (Strandherd Dr to Citigate Dr)					
Collector	N/A	Mixed Traffic	2	60 km/h	**F**

Table 3: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
Strandherd Dr (both sides, Systemhouse St/Maravista Dr to Dealership Dr/Kennevale Dr)		
> 3.7m	2	A
Systemhouse St (Strandherd Dr to Citigate Dr)		
> 3.7m	1	B

Intersection MMLOS Analysis

The following is a review of the MMLOS of the signalized intersections within the study area, using complete streets principles. Strandherd Drive/Citigate Drive/Fallowfield Road, Strandherd Drive/CrossKeys Place/Hélène-Campbell Road, Strandherd Drive/Systemhouse Street/Maravista Drive and Strandherd Drive/Dealership Drive/Kennevale Drive have been evaluated using the MMLOS targets for intersections in an Employment Area.

Exhibit 5 of the Addendum to the MMLOS Guidelines has been used to evaluate the existing PLOS at the intersections listed above. Exhibit 22 of the MMLOS Guidelines suggests a target PLOS C for all roadways within an Employment Area. The results of the intersection PLOS analysis are summarized in **Tables 1, 2, 3,** and **4**.

Exhibit 12 of the MMLOS Guidelines has been used to evaluate the existing BLOS at the intersection listed above. As per Exhibit 22 of the MMLOS Guidelines suggest a target BLOS B for arterial crosstown bikeway routes within an Employment Area. The results of the intersection BLOS analysis are summarized in **Table 5**.

Exhibit 16 of the MMLOS Guidelines has been used to evaluate the existing TLOS at the intersection listed above. Exhibit 22 of the MMLOS Guidelines does not identify a target TLOS for roads without transit priority measures. The TLOS has been evaluated for every approach that is currently used by transit. The results of the intersection TLOS analysis are summarized in **Table 6**.

Exhibit 21 of the MMLOS Guidelines has been used to evaluate the existing TkLOS at the intersection listed above. Exhibit 22 of the MMLOS Guidelines identifies a target TkLOS B for truck arterial truck routes in the Employment Area and a TkLOS D for collector roads without a truck route designation in an Employment Area. The results of the intersection TkLOS analysis are summarized in **Table 7**.

Table 1: PLOS Intersection Analysis – Strandherd Drive/Citigate Drive/Fallowfield Road

Criteria	North Approach		South Approach		East Approach		West Approach	
Strandherd Drive/Citigate Drive/Fallowfield Road								
PETSI SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	-10	No	6	No	55	No	55
Lanes Crossed (3.5m Lane Width)	10 +		9		6		6	
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Protected	0	Protected	0	Protected	0	Protected	0
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Perm + Prot	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 25m	-9	> 10m to 15m	-6	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	Conventional with Receiving	-3	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	> 10m to 15m	-6	> 15m to 25m	-8	> 25m	-9	> 10m to 15m	-6
Perpendicular Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	Conventional with Receiving	-3	No Right Turn Channel	-4
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		**-49**		**-33**		**14**		**0**
LOS		**F**		**F**		**F**		**F**
DELAY SCORE								
Cycle Length		120		120		120		120
Pedestrian Walk Time		7		7		11.1		11.1
DELAY SCORE		**53.2**		**53.2**		**49.4**		**49.4**
LOS		**E**		**E**		**E**		**E**
OVERALL		**F**		**F**		**F**		**F**

Table 2: PLOS Intersection Analysis – Strandherd Drive/CrossKeys Place/Hélène-Campbell Road

Criteria	North Approach		South Approach		East Approach		West Approach	
Strandherd Drive/CrossKeys Place/Hélène-Campbell Road								
PETSI SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	6	No	-10	No	55	No	39
Lanes Crossed (3.5m Lane Width)	9		10 +		6		7	
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Permissive	-8	Permissive	-8	Protected	0	Protected	0
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Perm + Prot	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 10m to 15m	-6	> 10m to 15m	-6
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	> 10m to 15m	-6	> 10m to 15m	-6	> 15m to 25m	-8	> 15m to 25m	-8
Perpendicular Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		**-41**		**-57**		**16**		**0**
LOS		**F**		**F**		**F**		**F**
DELAY SCORE								
Cycle Length		120		120		120		120
Pedestrian Walk Time		11.1		11.1		7		7
DELAY SCORE		**49.4**		**49.4**		**53.2**		**53.2**
LOS		**E**		**E**		**E**		**E**
OVERALL		**F**		**F**		**F**		**F**

Table 3: PLOS Intersection Analysis – Strandherd Drive/Systemhouse Street/Maravista Drive

Criteria	North Approach		South Approach		East Approach		West Approach	
Strandherd Drive/Systemhouse Street/Maravista Drive								
PETSI SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	6	No	6	No	55	No	39
Lanes Crossed (3.5m Lane Width)	9		9		6		7	
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Protected	0	Protected	0	Protected	0	Protected	0
Right Turn Conflict	Permissive or Yield	-5	Permissive or Yield	-5	Permissive or Yield	-5	Perm + Prot	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 15m to 25m	-8	> 10m to 15m	-6	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	N/A	0	N/A	0	N/A	0	> 10m to 15m	-6
Perpendicular Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
CROSSING TREATMENT								
Treatment	Standard	-7	Standard	-7	Standard	-7	Standard	-7
PETSI SCORE		**-27**		**-25**		**22**		**0**
LOS		**F**		**F**		**F**		**F**
DELAY SCORE								
Cycle Length		120		120		120		120
Pedestrian Walk Time		7.5		7.5		4.4		4.4
DELAY SCORE		**52.7**		**52.7**		**55.7**		**55.7**
LOS		**E**		**E**		**E**		**E**
OVERALL		**F**		**F**		**F**		**F**

Table 4: PLOS Intersection Analysis – Strandherd Drive/Dealership Drive/Kennevale Road

Criteria	North Approach		South Approach		East Approach		West Approach	
Strandherd Drive/Dealership Drive/Kennevale Road								
PETSI SCORE								
CROSSING DISTANCE CONDITIONS								
Median > 2.4m in Width	No	23	No	39	No	72	No	39
Lanes Crossed (3.5m Lane Width)	8		7		5		7	
SIGNAL PHASING AND TIMING								
Left Turn Conflict	Permissive	-8	Permissive	-8	Protected	0	Protected	0
Right Turn Conflict	Permissive or Yield	-5	Perm + Prot	-5	Permissive or Yield	-5	Permissive or Yield	-5
Right Turn on Red	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3	RTOR Allowed	-3
Leading Pedestrian Interval	No	-2	No	-2	No	-2	No	-2
CORNER RADIUS								
Parallel Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8
Parallel Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
Perpendicular Radius	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8	> 15m to 25m	-8
Perpendicular Right Turn Channel	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4	No Right Turn Channel	-4
CROSSING TREATMENT								
Treatment	Zebra Stripe	-4	Zebra Stripe	-4	Standard	-7	Zebra Stripe	-4
PETSI SCORE		**-23**		**-7**		**31**		**1**
LOS		**F**		**F**		**E**		**F**
DELAY SCORE								
Cycle Length		120		120		120		120
Pedestrian Walk Time		7.8		7.8		34.9		34.9
DELAY SCORE		**52.5**		**52.5**		**30.2**		**30.2**
LOS		**E**		**E**		**D**		**D**
OVERALL		**F**		**F**		**E**		**F**

Table 5: BLOS Intersection Analysis

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
Strandherd Drive/Citigate Drive/Fallowfield Road				
North Approach	Cycle Track	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Two-stage, left turn bike box ≤ 50km/h	A
South Approach	Cycle Track	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Two-stage, left turn bike box ≤ 50km/h	A
East Approach	Mixed Traffic	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	One lane crossed ≥ 60km/h	**E**
West Approach	Mixed Traffic	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Dual left-turn lanes	**F**
Strandherd Drive/CrossKeys Place/Hélène-Campbell Road				
North Approach	Cycle Track	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Two-stage, left turn bike box ≤ 50km/h	A
South Approach	Cycle Track	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Two-stage, left turn bike box ≤ 50km/h	A
East Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right Turn Lane > 50m long	**D**
		Left Turn Accommodation	One lane crossed ≥ 60km/h	**E**
West Approach	Pocket Bike Lane	Right Turn Lane Characteristics	Right Turn Lane > 50m long	**D**
		Left Turn Accommodation	One lane crossed ≥ 60km/h	**E**
Strandherd Drive/Systemhouse Street/Maravista Drive				
North Approach	Cycle Track	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Two-stage, left turn bike box ≤ 50km/h	A
South Approach	Cycle Track	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Two-stage, left turn bike box ≤ 50km/h	A
East Approach	Mixed Traffic	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	One lane crossed ≤ 50km/h	C
West Approach	Mixed Traffic	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Dual left-turn lanes	**F**
Strandherd Drive/Dealership Drive/Kennevale Road				
North Approach	Cycle Track	Right Turn Lane Characteristics	No impact on LTS	A

Approach	Facility Type	Criteria	Travel Lanes and/or Speed	BLOS
		Left Turn Accommodation	Protected Corner	A
South Approach	Cycle Track	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Protected Corner	A
East Approach	Mixed Traffic	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Protected Corner	A
West Approach	Mixed Traffic	Right Turn Lane Characteristics	No impact on LTS	A
		Left Turn Accommodation	Protected Corner	A

Table 6: TLOS Intersection Analysis

Approach	Delay[1]		TLOS
	PM Peak	SAT Peak	
Strandherd Drive/Citigate Drive/Fallowfield Road			
North Approach	31 sec	18 sec	E
South Approach	91 sec	21 sec	F
East Approach	46 sec	37 sec	F
West Approach	112 sec	77 sec	F
Strandherd Drive/CrossKeys Place/Hélène-Campbell Road			
North Approach	25 sec	19 sec	D
South Approach	45 sec	45 sec	F
East Approach	23 sec	19 sec	D
Strandherd Drive/Systemhouse Street/Maravista Drive			
North Approach	37 sec	133 sec	F
South Approach	39 sec	44 sec	F
East Approach	34 sec	27 sec	E
West Approach	28 sec	20 sec	D
Strandherd Drive/Dealership Drive/Kennevale Road			
North Approach	20 sec	16 sec	C
South Approach	21 sec	19 sec	D
East Approach	50 sec	33 sec	F

1. Delay based on outputs from Synchro analysis of existing conditions

Table 7: TkLOS Intersection Analysis

Approach	Effective Corner Radius	Number of Receiving Lanes Departing Intersection	TkLOS
Strandherd Drive/Citigate Drive/Fallowfield Road			
North Approach	> 15m	1	**C**
South Approach	> 15m	2	A
East Approach	> 15m	2	A
West Approach	10 to 15m	2	B
Strandherd Drive/CrossKeys Place/Hélène-Campbell Road			
North Approach	10 to 15m	2	B
South Approach	10 to 15m	1	**E**
East Approach	> 15m	2	A

Approach	Effective Corner Radius	Number of Receiving Lanes Departing Intersection	TkLOS
West Approach	> 15m	2	A
Strandherd Drive/Systemhouse Street/Maravista Drive			
North Approach	> 15m	2	A
South Approach	> 15m	1	**C**
East Approach	> 15m	2	A
West Approach	> 15m	2	A
Strandherd Drive/Dealership Drive/Kennevale Road			
North Approach	> 15m	2	A
South Approach	> 15m	1	**C**
East Approach	> 15m	2	A
West Approach	> 15m	2	A