

CITY OF GREATER SUDBURY

MONTROSE AVENUE EXTENSION TRANSPORTATION ANALYSIS TRAVEL DEMAND ANALYSIS BASED ON TRANSCAD MODELLING

NOVEMBER 19, 2020





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EXECUTIVE SUMMARY

WSP was retained by the City of Greater Sudbury to assist in transportation planning and analysis work related to the potential extension of Montrose Avenue to Maley Drive. This work stems from City Council Resolution CC2016-380-A2 which directed staff to study traffic impacts to inform the detailed design of the extension as part of the Phase 2 Official Plan review. Montrose Avenue North is desired to be a “complete street” that maintains and protects the residential character of the neighbourhood including “appropriate lane widths, identifies traffic calming measures including meandering travel lanes, sidewalks, bicycle infrastructure, street trees and street lighting, and which will encourage local traffic use.”

Since preparation of the Transportation Study Report (January 2017), population forecasts have been revised and transportation analysis zones have changed. WSP was asked to consider how these changes would impact Montrose Avenue under three scenarios:

- Scenario 1: no connection of Montrose Avenue to Maley Drive;
- Scenario 2: a direct connection of Montrose Avenue to Maley Drive; and
- Scenario 3: a “meandering” connection of Montrose Avenue to Maley Drive.

To analyze a “meandering” connection, we have assumed a definition of a road with slight bends that would add up to 50m in length compared to a direct connection. It would generally fit within existing right-of-way, although some additional right-of-way would be expected to accommodate the meander. It would include sidewalks and bike lanes on both sides, no on-street parking and one travel lane in each direction at the minimum lane width constructed in the city (generally 3.5m) (Note that the direct connection would also be constructed as a complete street with these same elements). It would not include unwarranted stop signs, 90-degree bends or other measures that would make the road so cumbersome to drive that it would operate like there was no connection at all to Maley Drive.

While this report assumes that Montrose Avenue will be extended north, the road is development driven and construction will be dependant on market demand.

WSP used the City’s travel demand model for the year 2031 to conduct the analysis, updating the model to reflect the new population and employment forecasts and transportation analysis zones. The analysis found that there would be adequate capacity on Montrose Avenue under all three scenarios. Scenario 1 was forecast to have the highest traffic volumes as all traffic would be forced toward Lasalle Boulevard and there would be no alternative to Maley Drive. However, the two scenarios with a connection would have some shortcutting traffic and the overall traffic volumes between the three scenarios are similar.

There are multiple other planning criteria when considering the connection. These include vehicle travel times, greenhouse gas emissions, emergency vehicle response times and construction truck traffic. The summary of advantages and disadvantages are provided in the table below.

Scenario	Advantages	Disadvantages
1 – No Connection to Maley Drive	No shortcutting traffic	<p>Highest total vehicle volumes</p> <p>Longest travel times for local residents</p> <p>Highest greenhouse gas emissions</p> <p>Slowest emergency response times</p> <p>All construction traffic forced to access new development from Lasalle Boulevard and existing portion of Montrose Avenue</p> <p>Barry Downe Road approaching capacity</p>
2 – Direct Connection to Maley Drive	<p>Shortest travel times for local residents</p> <p>Lower greenhouse gas emissions than no connection scenario</p> <p>Fastest emergency response times</p> <p>City owns road allowance for connection to Maley Drive</p> <p>Construction traffic can use new road connecting to Maley Drive and can avoid LaSalle Boulevard and existing portion of Montrose Avenue</p> <p>Barry Downe Road within capacity</p>	<p>Highest number of shortcutting vehicles (26% of total vehicle traffic on existing portion of Montrose Avenue north of Lasalle Boulevard)</p>
3 – Meandering Connection to Maley Drive	<p>Lowest vehicle volumes</p> <p>Lower number of shortcutting vehicles compared to direct connection (8% of total vehicle traffic on existing portion of Montrose Avenue north of Lasalle Boulevard would be shortcutting)</p> <p>Lower greenhouse gas emissions than no connection scenario</p> <p>Construction traffic can use new road connecting to Maley Drive and can avoid LaSalle Boulevard and existing portion of Montrose Avenue</p>	<p>Higher road construction costs due to longer road and additional right-of-way that will need to be purchased</p> <p>Negotiations with developer would be required to alter existing road allowance and registered subdivision</p> <p>Slower travel times for local residents compared to direct connection</p> <p>Slower emergency response times compared to direct connection</p> <p>Barry Downe Road approaching capacity</p>

Based on all factors considered, WSP recommends:

- Construct a direct connection of Montrose Avenue to Maley Drive.
- Construct the new portion of Montrose Avenue and reconstruct the existing portion of Montrose Avenue as a “complete street” with the following elements:
 - Sidewalks on both sides of the road;
 - On-street bike lanes on both sides of the road;
 - One travel lane in each direction; and
 - No on-street parking.
- Concurrent with the development of Montrose Avenue North (assumed by the year 2031), widen Barry Downe Road between Maley Drive and Woodbine Avenue to four lanes to help prevent shortcutting traffic on Montrose Avenue.

1 INTRODUCTION

WSP was retained by the City of Greater Sudbury to assist in transportation planning and analysis work related to the potential extension of Montrose Avenue to Maley Drive. This work stems from City Council Resolution CC2016-380-A2 which directed staff to study traffic impacts to inform the detailed design of the extension as part of the Phase 2 Official Plan review. Montrose Avenue North is desired to be a complete street that maintains and protects the residential character of the neighbourhood including "appropriate lane widths, identifies traffic calming measures including meandering travel lanes, sidewalks, bicycle infrastructure, street trees and street lighting, and which will encourage local traffic use."

Montrose Avenue is a north-south residential roadway with a two-lane cross-section. It currently runs between Lasalle Boulevard on the south and Woodbine Avenue on the north. Montrose Avenue has been shown to connect to an extension of Maley Drive in City planning documents, and the extension was included as a recommendation in the City's January 2017 Transportation Study Report (TSR). With the construction and opening of the Maley Drive extension in 2019, the City is revisiting the Montrose Avenue extension. A screenshot of the study area corridor from Google Earth is presented in **Figure 1**.

During the development of the City's TSR, there was considerable community interest surrounding the extension. The community expressed concerns that a Montrose Avenue connection to Maley Drive would result in shortcutting traffic from Maley Drive to Lasalle Boulevard through this neighbourhood, which was deemed undesirable.

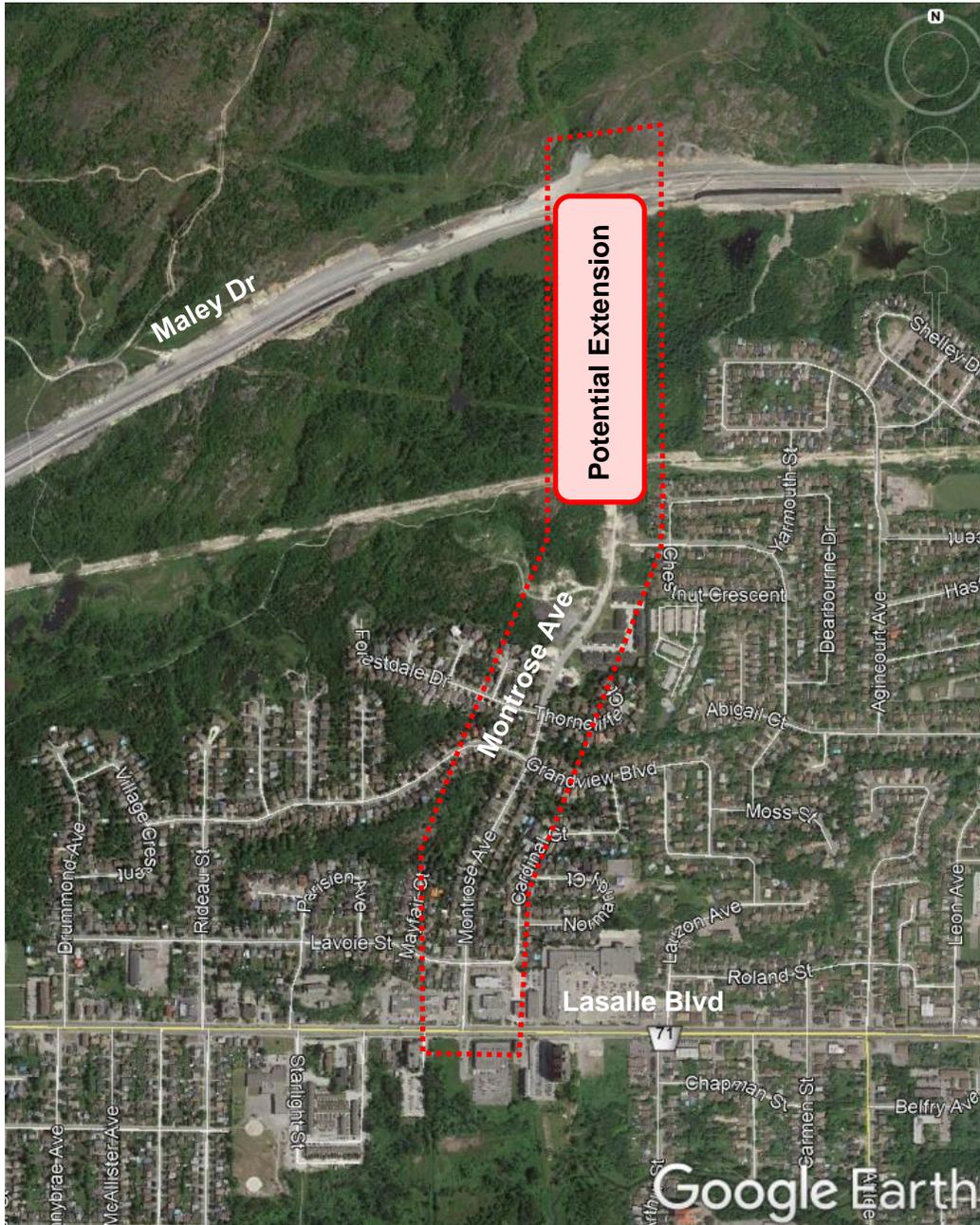
As the City further examines this connection three modeling scenarios have been developed:

- Scenario 1: no connection of Montrose Avenue to Maley Drive;
- Scenario 2: a direct connection of Montrose Avenue to Maley Drive; and
- Scenario 3: a "meandering" connection of Montrose Avenue to Maley Drive.

This report uses updated population and employment data to analyze forecast vehicle traffic volumes on Montrose Avenue under these three scenarios. The report documents the travel demand analysis conducted using the City's TransCAD model for the year 2031 given the population and employment forecasts, which assume a partial build out of the remaining lands along north Montrose (200 new residents), and the year 2031 if all remaining lands in the north Montrose area were developed for housing (2,300 new residents). The report draws conclusions about the vehicle volumes, capacity of the road, and suitability of each scenario from a city-building perspective.

The report begins with an explanation of how the analysis was conducted using the City's TransCAD model and updated data. It then presents the assumptions regarding each of the scenarios tested. The second half of the report begins with a review of the results of the modelling exercise and identifies available capacity. The report concludes with a description of how the street could be designed as a complete street to promote walking and cycling and to provide a natural traffic calming effect to discourage shortcutting traffic.

Figure 1: Study Area Corridor



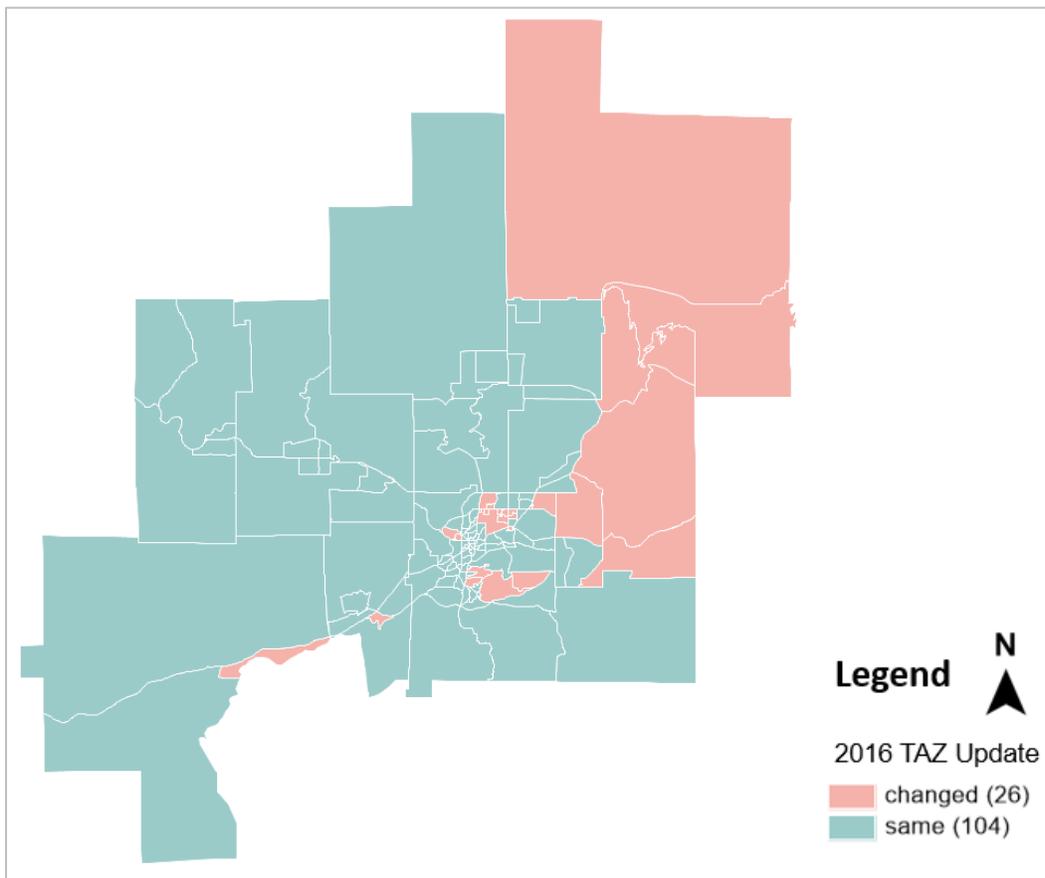
2 TRANSCAD MODEL UPDATE

The City’s travel demand forecast model (TransCAD model) that was used to prepare the January 2017 Transportation Study Report (TSR) was used in this analysis. The preferred alternative from the TSR, termed the “sustainability-focused” alternative, was used for the 2031 horizon year. Since the development of the TSR, the traffic analysis zones (TAZs) have changed to reflect 2016 Census data boundaries and the City’s 2031 population and employment forecasts have been revisited and revised. The TransCAD model was updated to reflect the changes to the TAZ boundaries and the population and employment forecasts.

2.1 2016 TAZ UPDATE

The City’s existing TransCAD model was developed based on the 2009 TAZ system with 134 internal zones. To incorporate the 2016 TAZ system, a GIS layer with new boundaries was received from the City and imported into the TransCAD model. Zone centroids were deleted/created to coordinate with the 2016 TAZ; additional connectors were created to link the centroids to the roadway network; all updated centroids were re-numbered to match the 2016 TAZ numberings. The updated 2016 TAZ system includes 130 internal zones and four external zones (which were retained from the existing TransCAD model). The updated 2016 TAZs are presented in **Figure 2**.

Figure 2: 2016 TAZ Update



2.2 2031 POPULATION AND EMPLOYMENT DATA

The revised 2031 population and employment data associated with the 2016 TAZs were received from the City and used to estimate future trip generation. A total population of 166,650 and a total employment of 82,910 were included in the model, as presented in **Figure 3** and **Figure 4**, respectively. The population forecast is lower than the 171,000-person forecast used in the TSR and the employment forecast is higher than the 82,045 jobs forecast used in the TSR. The population and employment distributions in the Montrose-Lasalle area are presented in **Figure 5**.

Figure 3: 2031 Population Distribution

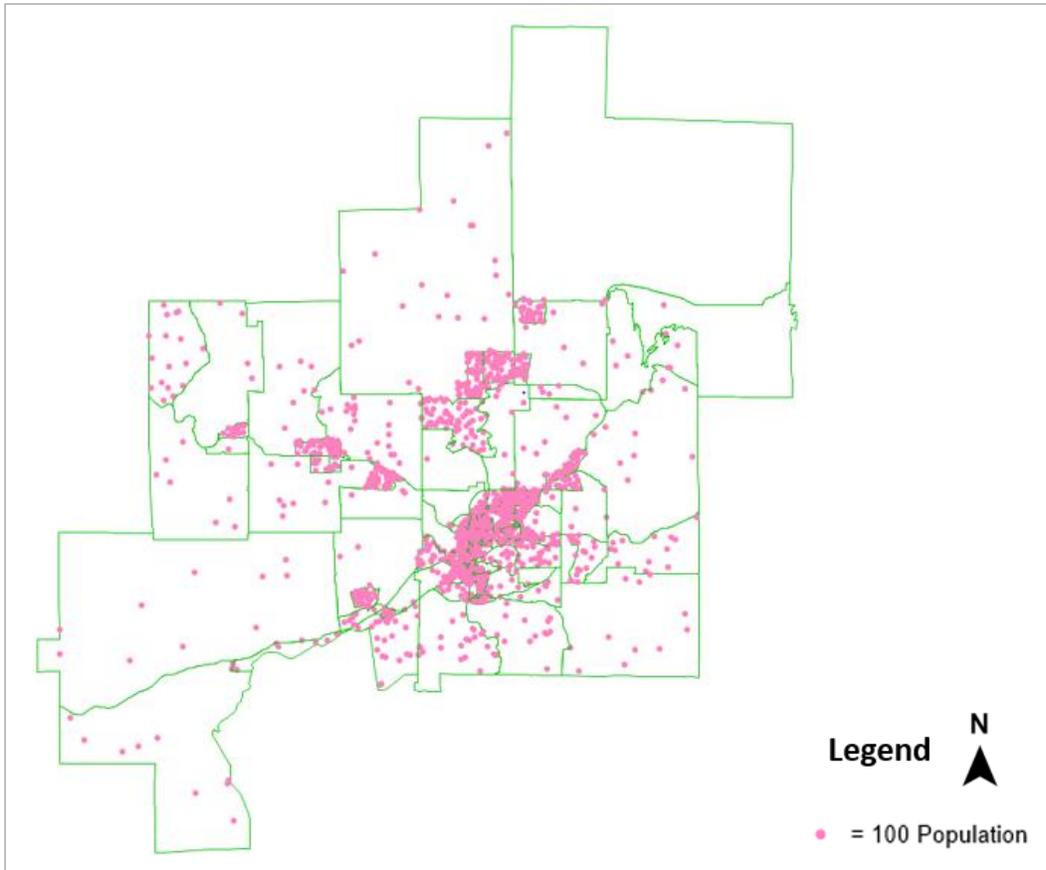


Figure 4: 2031 Employment Distribution

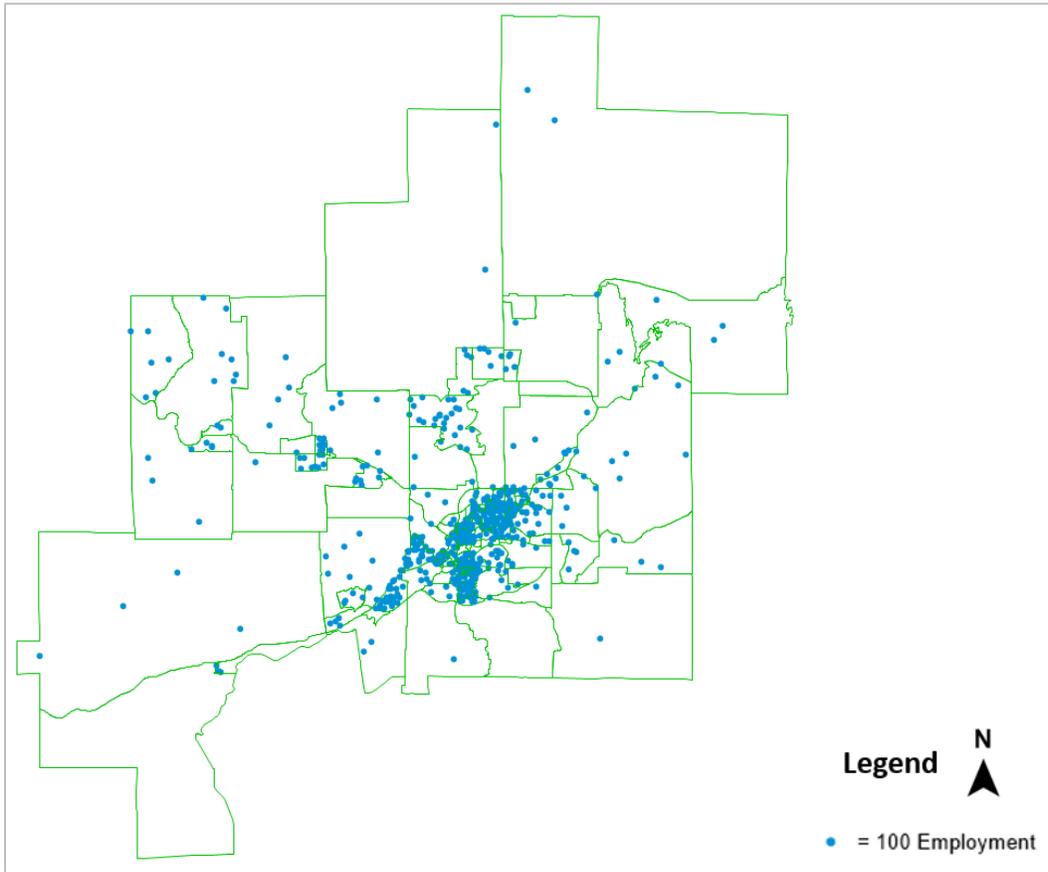


Figure 5: 2031 Population and Employment Distribution in Montrose-Lasalle Area



3 ALTERNATIVE SCENARIOS AND ASSUMPTIONS

Three network alternative scenarios were analyzed for future 2031 afternoon peak hour conditions:

- Scenario 1: No connection of Montrose Avenue to Maley Drive;
- Scenario 2: Direct connection of Montrose Avenue to Maley Drive; and
- Scenario 3: Meandering connection of Montrose Avenue to Maley Drive.

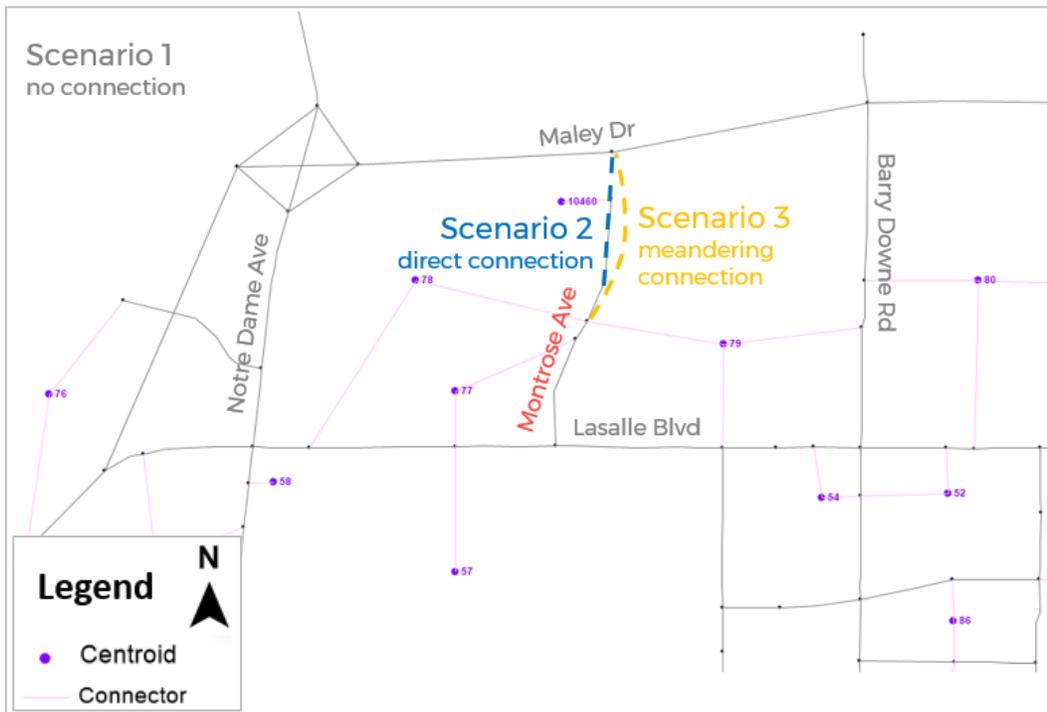
In Scenario 1, Montrose Avenue was modelled as extending north to access additional development land but not connecting to Maley Drive. Scenario 2 assumed Montrose Avenue to be extended to Maley Drive via a straight alignment. Scenario 3 incorporated a meandering design of Montrose Avenue to the Maley Drive, which may introduce traffic calming measures (reduced posted speed limit and curvilinear, meandering street).

To further define the “meandering” street, we have assumed a definition of a road with slight bends that would add up to 50m in length compared to a direct connection. It would generally fit within existing right-of-way, although some additional right-of-way would be expected to accommodate the meander. It would include sidewalks and bike lanes on both sides, no on-street parking and one travel lane in each direction at the minimum lane width constructed in the city (generally 3.5m) (Note that the direct connection would also be constructed as a complete street with these same elements). It would not include unwarranted stop signs, 90-degree bends or other measures that would make the road so cumbersome to drive that it would operate like there was no connection at all to Maley Drive. Should 90-degree bends and unwarranted stop signs be added to the Scenario 3 “meandering” connection, it would be expected to function similar to the Scenario 1 analysis of no connection to Maley Drive.

The extension of Montrose Avenue north from its current terminus is development driven. This analysis assumes a certain level of development by the year 2031. The exact timing of the road extension remains to be seen and will be influenced by market demand.

A screenshot from the TransCAD model is presented in **Figure 6** illustrating the three network alternative scenarios.

Figure 6: Network Alternative Scenarios



These three scenarios were repeated in the analysis considering the traffic impacts of the ultimate full build out of the residential lands along the northern, to-be-constructed part of Montrose Avenue.

Based on the discussion with the City, the following modelling assumptions were considered in the travel demand analysis:

- The 2031 TransCAD modelling and analysis was conducted based on the ‘**Sustainability Focused**’ network alternative, excluding:
 - Montrose Avenue South extension between Lasalle Boulevard and Newgate Avenue, and
 - Hawthorne Drive extension between Montrose Avenue extension and Attlee Avenue;
- City-wide **mode split of 0.92** was used for automobiles;
- For Scenario 2, the connection link was coded with a posted speed limit of **50 km/h** and a lane capacity of **700 veh/h**;
- For Scenario 3, the connection link was coded with a posted speed limit of **40 km/h** and a lane capacity of **600 veh/h**. The length of the connection link was extended **50m** compared to Scenario 2 to help simulate the meandering connection;
- For both Scenario 2 and 3, Montrose Avenue was assumed to be operating with **2-lane cross-section** and the future intersection of Montrose Avenue extension and Maley Drive will **allow all turning movements**;
- External zones were assumed to have the same growth rate as the internal zones, which suggests an approximately **5% growth** between 2009 and 2031.

4 REVIEW OF TRANSCAD MODELLING RESULTS

4.1 2031 PEAK HOUR VOLUMES AND CORRIDOR V/C RATIOS

The City’s TransCAD model was developed to simulate the weekday afternoon peak hour condition, which is typically the busiest travel hour of the day. The key data for analysis were the forecast vehicle volumes and the volume compared to the capacity of the roadway. Volume to capacity (v/c) ratios indicate how much capacity of a road is being used and show if there is remaining available capacity. Volume to capacity ratios below 1.00 are within capacity and above 1.00 are above capacity. Typically, no transportation capacity improvements will be planned with v/c ratios below 0.80, as there is sufficient capacity for all forecast vehicles.

The Transportation Study Report had noted that traffic volumes on Montrose Avenue may be higher with no connection to Maley Drive than with a connection to Maley Drive, as the primary option to access Montrose Avenue would be the intersection with Lasalle Boulevard. Montrose Avenue immediately north of the Lasalle Boulevard intersection was re-studied to determine likely vehicle volumes and volume to capacity ratios under the three scenarios given expected growth to the year 2031 (**Table 1**) and the same three access scenarios, but this time considering full build out of the residential lands along the northern section of Montrose Avenue (**Table 2**).

Table 1: Peak Hour Vehicle Traffic Volumes and Volume to Capacity Ratios, Year 2031: Montrose Avenue north of Lasalle Boulevard

Location	Scenario 1 – No Connection		Scenario 2 – Direct Connection		Scenario 3 – Meandering Connection	
	NB	SB	NB	SB	NB	SB
Montrose Ave north of Lasalle Blvd - volumes	341	292	332	293	309	274
Montrose Ave north of Lasalle Blvd – volume to capacity ratio	0.49	0.42	0.47	0.42	0.44	0.39

NB = northbound; SB = southbound

Table 2: Peak Hour Vehicle Traffic Volumes and Volume to Capacity Ratios, Year 2031 considering Full Residential Build Out: Montrose Avenue north of Lasalle Boulevard

Location	Scenario 4 – No Connection		Scenario 5 – Direct Connection		Scenario 6 – Meandering Connection	
	NB	SB	NB	SB	NB	SB
Montrose Ave north of Lasalle Blvd - volumes	372	357	329	300	335	297
Montrose Ave north of Lasalle Blvd – volume to capacity ratio	0.53	0.51	0.47	0.43	0.48	0.42

NB = northbound; SB = southbound

The “no connection” scenarios are forecast to exhibit the highest traffic volumes on the portion of Montrose Avenue just north of Lasalle Boulevard of the scenarios tested. This condition is exacerbated upon full build out of the residential lands on the northern portion of Montrose Avenue. All scenarios are well within the capacity of a two-

lane collector road. While there would be some shortcutting traffic if Montrose Avenue were connected to Maley Drive, the traffic volumes forecast on Montrose just north of Lasalle Boulevard with no connection to Maley Drive would be expected to be equal to, or greater than, the traffic volumes with a direct or meandering connection.

4.2 DETAILED ANALYSIS OF THE ACCESS SCENARIOS

A more detailed look was taken at the three scenarios for Montrose Avenue and the two alternative population forecasts – expected growth to 2031 and full build out of the northern Montrose subdivision by the year 2031. With the growth presently forecast to the year 2031, the forecast vehicle volumes are shown in **Figure 7** and the volume to capacity ratios are shown in **Figure 8**. Recognizing that the City’s transportation network is interconnected, the detailed analysis also examines Barry Downe Road, as decisions made for Montrose Avenue are shown in the model to also impact Barry Downe Road. To summarize these data, the analysis shows:

- **No Connection:** Very modest traffic volumes during the p.m. peak hour on the new extension of Montrose. The extension effectively functions as a dead end and there is only traffic specific to these homes (population of 200) using the northern section of Montrose Avenue. The existing section of Montrose has considerably higher volumes, as this section is serving existing and future residents. Even with increased volumes, only about half of the capacity of Montrose Avenue is expected to be used and there would be no concerns about capacity constraints.

Barry Downe Road northbound toward Maley Drive is forecast to be approaching its capacity, as there are limited north-south routes for vehicles to use in this part of the city.

- **Direct Connection:** Traffic volumes on the new extension of Montrose increase compared to the no connection scenario, however these volumes are not expected to use more than 36% of the capacity of the road. Some local community traffic is using the direct connection and some shortcutting traffic is using the connection. On the existing portion of Montrose, shortcutting traffic is expected to account for 26% of the total traffic volumes. Even with this shortcutting traffic, vehicle volumes are expected to be slightly lower than the no connection scenario. There would be no forecast capacity concerns on Montrose Avenue.

Barry Downe Road northbound toward Maley Drive is forecast to be within capacity. Some north-south through traffic would be expected to use Montrose Avenue.

- **Meandering Connection:** Traffic volumes on the new extension of Montrose increase compared to the no connection scenario but are less than the direct connection scenario. The traffic volumes on the new extension are not expected to use more than 27% of the capacity of the road. On the existing portion of Montrose, shortcutting traffic is expected to account for 8% of the total traffic volumes. Even with this shortcutting traffic, vehicle volumes in this scenario are expected to be lower than the no connection to Maley Drive scenario. There would be no forecast capacity concerns on Montrose Avenue.

Barry Downe Road northbound toward Maley Drive is forecast to be approaching its capacity. The meandering connection reduces through traffic on Montrose Avenue and puts a greater strain on Barry Downe Road.

4.2.1 ANALYSIS OF FULL RESIDENTIAL BUILD OUT

If the entire area were built out by 2031, there would be about 2,300 new people living in the area (compared to 200 new residents in the initial scenario). This additional population was added to the transportation model and the same three scenarios were analyzed. All other aspects of the model were kept the same. The forecast vehicle volumes are shown on **Figure 9** and the forecast volume to capacity ratios are shown on **Figure 10**.

At full build out of the subdivision, the volumes on the new northern section of Montrose are forecast to be relatively the same between the no connection scenario and the direct connection scenario. The no connection scenario functions as a dead end and all 2,300 residents are forced to travel between Lasalle and Montrose to reach their destinations. In the direct connection, there is some shortcutting traffic, but this is balanced by the option for local traffic to use Maley Drive. The meandering connection is forecast to exhibit the lowest volumes of the three

scenarios, as local traffic can use Maley Drive, but the meandering nature of the road reduces the likelihood of shortcutting traffic.

On the existing section of Montrose Avenue connecting to Lasalle Boulevard, the no connection scenario is forecast to exhibit the highest traffic volumes as this is the only connection to other parts of the city. Traffic volumes on the existing section of Montrose are expected to be lower for the direct connection and meandering connection scenarios compared to the no connection, as the connection to Maley, either direct or meandering, opens the opportunity for local traffic to disperse between Maley and Lasalle. In all three access scenarios, volumes on Montrose Avenue (existing and new extension) remain within capacity with no capacity constraints. Barry Downe Road northbound would be expected to exhibit capacity constraints in the no connection and meandering connection scenarios.

Figure 7: Assigned Traffic Volumes

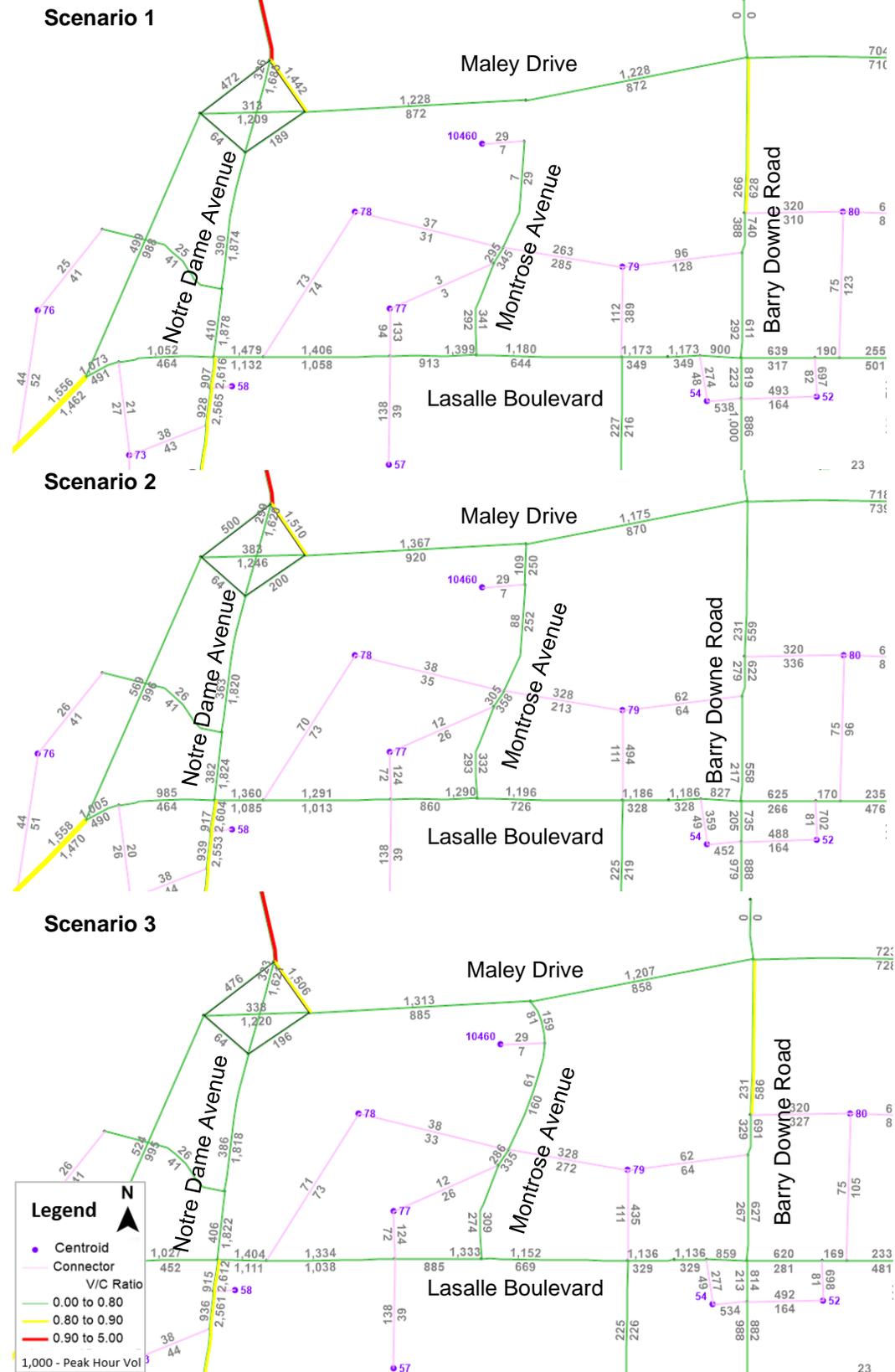


Figure 8: Corridor V/C Ratios

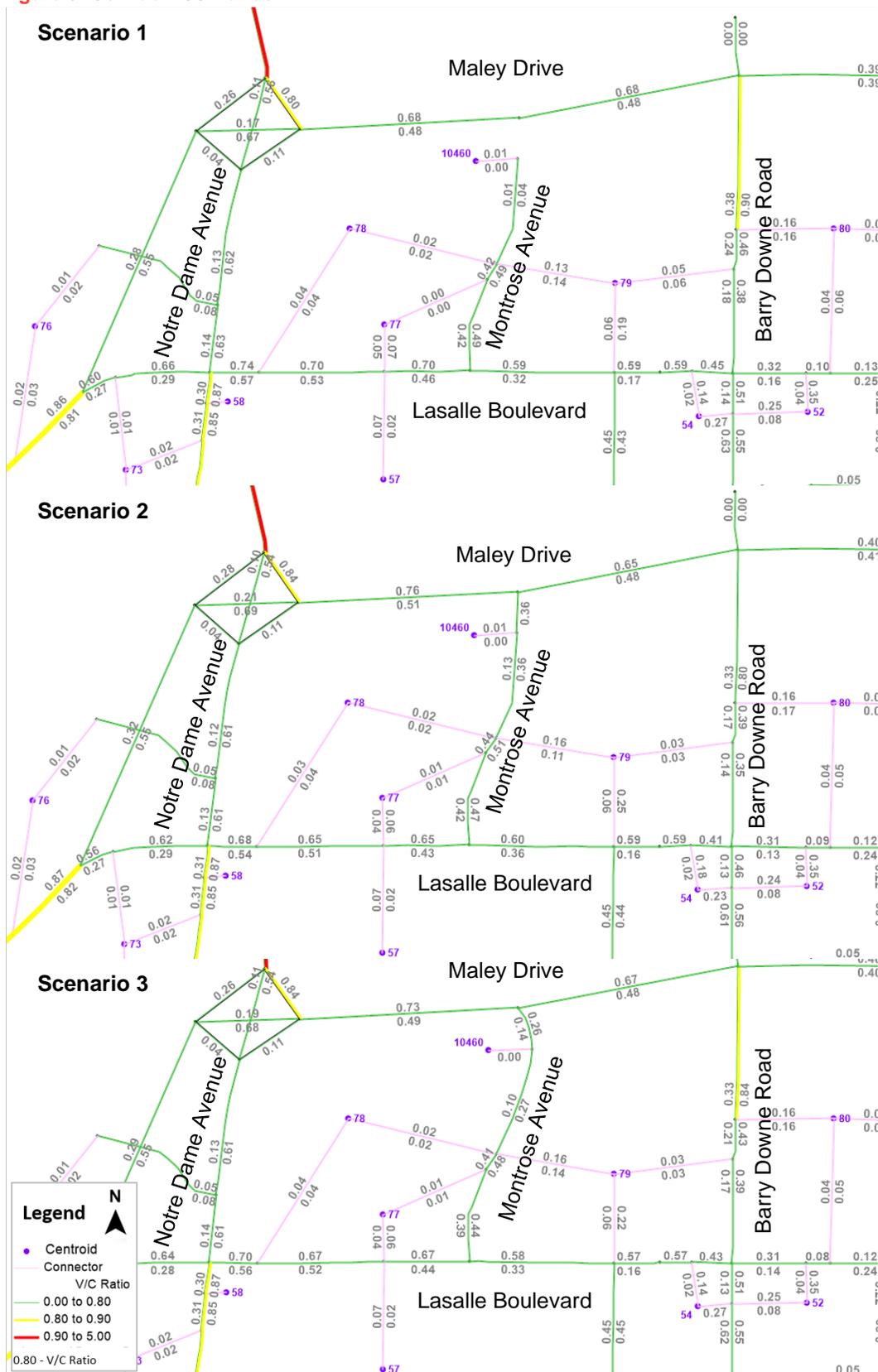
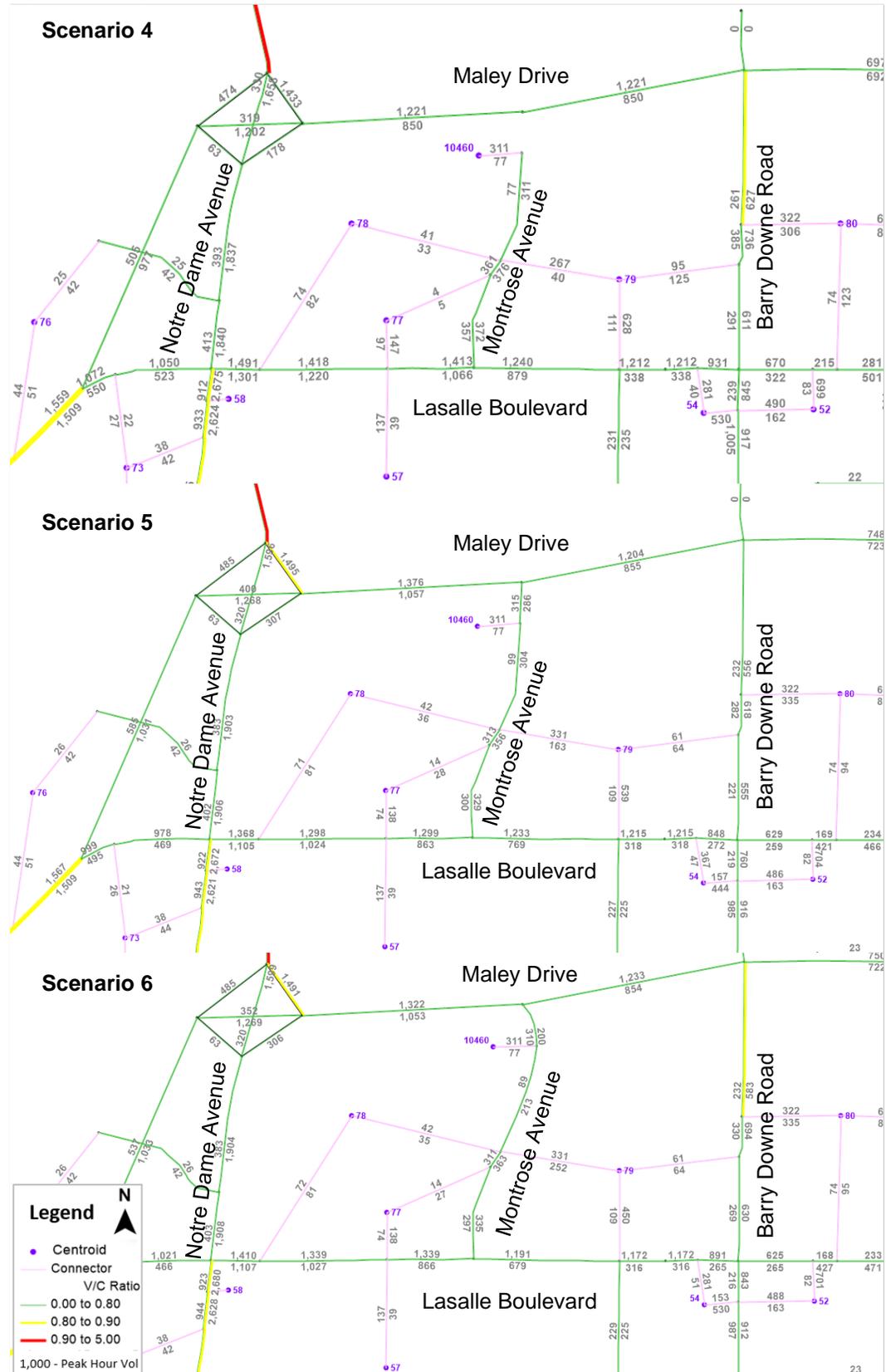


Figure 9: Assigned Traffic Volumes Full Build Out of Montrose Subdivision



4.3 OTHER FACTORS TO CONSIDER

Besides vehicle volumes, there are other factors to consider when determining whether to connect Montrose Avenue to Maley Drive. These factors regard connectivity, emergency vehicle response times, and construction of the planned subdivision.

The distance between Notre Dame Avenue and Barry Downe Road is approximately three kilometres along Maley Drive. The Montrose Avenue extension is the only viable location to connect to Maley Drive along this stretch. It has been shown in the Official Plan as a connection for a number of years and would provide an alternate east-west route for local traffic other than Lasalle Boulevard. Without the connection, existing and future residential traffic in New Sudbury in the area bounded by Maley Drive on the north, Lasalle Boulevard on the south, Barry Downe Road on the east and Notre Dame Avenue on the west would only be able to utilize Lasalle Boulevard as a continuous east-west connection and would not be able to access Maley Drive for east-west travel. The alternative access to the community from Maley Drive could reduce travel times, which would also reduce greenhouse gas emissions. From a community connectivity perspective, a connection to Maley Drive is considered good planning.

The connection to Maley Drive would assist in emergency response times by providing an alternative to Lasalle Boulevard to access to this community. If access from Lasalle Boulevard were blocked, the Maley Drive access would provide an alternate route. Depending on the location of the emergency, access from Maley Drive may provide a quicker response time, even if access from Lasalle is available.

Population forecasts for the new, northern section of Montrose show about 200 new residents by 2031, with a full build out of the subdivision resulting in about 2,300 new residents. A connection to Maley Drive would allow construction traffic to use Maley Drive to access this new community. Without a connection to Maley, construction truck traffic will be forced to access the construction sites through the existing community.

If a connection were to be provided, the question arises as to whether it should be direct or meandering. From the emergency response perspective, a direct connection will enable the quickest response. A direct connection would result in the most efficient use of the land and would allow existing plans to proceed. A meandering connection would increase the length of the road and add to the road construction cost. The meandering connection could reduce the residential development yield and alter some lot sizes. The City may need to negotiate with the developer regarding increased road construction costs and loss of revenue due to a reduced number of development lots. The meandering connection would increase travel times, which could also increase greenhouse gas emissions.

While this report assumes that Montrose Avenue will be extended north, the road is development driven and construction will be dependant on market demand.

4.4 SUMMARY OF ADVANTAGES AND DISADVANTAGES OF THE ACCESS SCENARIOS

A summary of the advantages and disadvantages of the three access options is provided in **Table 3**.

Table 3: Advantages and Disadvantages of Three Access Scenarios

Scenario	Advantages	Disadvantages
1 – No Connection to Maley Drive	No shortcutting traffic	Highest total vehicle volumes Longest travel times for local residents Highest greenhouse gas emissions Slowest emergency response times All construction traffic forced to access new development from Lasalle Boulevard and existing portion of Montrose Avenue Barry Downe Road approaching capacity
2 – Direct Connection to Maley Drive	Shortest travel times for local residents Lower greenhouse gas emissions than no connection scenario Fastest emergency response times City owns road allowance for connection to Maley Drive Construction traffic can use new road connecting to Maley Drive and can avoid LaSalle Boulevard and existing portion of Montrose Avenue Barry Downe Road within capacity	Highest number of shortcutting vehicles (26% of total vehicle traffic on existing portion of Montrose Avenue north of Lasalle Boulevard)
3 – Meandering Connection to Maley Drive	Lowest vehicle volumes Lower number of shortcutting vehicles compared to direct connection (8% of total vehicle traffic on existing portion of Montrose Avenue north of Lasalle Boulevard would be shortcutting) Lower greenhouse gas emissions than no connection scenario Construction traffic can use new road connecting to Maley Drive and can avoid LaSalle Boulevard and existing portion of Montrose Avenue	Higher road construction costs due to longer road and additional right-of-way that will need to be purchased Negotiations with developer would be required to alter existing road allowance and registered subdivision Slower travel times for local residents compared to direct connection Slower emergency response times compared to direct connection Barry Downe Road approaching capacity

Table 3 reflects the expected 2031 development in the area, which is expected to bring 200 more residents to the community. Full build out of the subdivision would be expected to result in about 2,300 total new residents. With full build out, the disadvantages of Scenario 1 (no connection to Maley) would become exacerbated.

4.5 DESIGN OF THE NORTHERN PORTION OF MONTROSE AVENUE

The new northern portion of Montrose Avenue should be designed as a “complete street” with facilities for pedestrians, cyclists and vehicles. Only one lane of vehicular travel is needed in each direction. To accommodate pedestrians and cyclists, we recommend sidewalks on each side of the road and on-street bike lanes with no on-street parking.

5 CONCLUSIONS

The new population and employment forecasts were used to re-examine the Transportation Study Report recommendation for a direct connection of Montrose Avenue to Maley Drive to consider the vehicle traffic impacts for this connection and the forecast difference in volumes if the connection was direct or meandering. The modelling analysis indicates that vehicle traffic volumes on the existing portion of Montrose Avenue north of Lasalle Boulevard would be expected to be highest with no connection to Maley Drive, as all local vehicles would be forced to use LaSalle Boulevard for intra-city travel. Construction traffic for the new homes on the new northern portion of Montrose would be forced to access construction sites through the existing community. A direct or meandering connection to Maley Drive would result in shortcutting traffic but these volumes would be expected to be less than the no connection scenario. In the ultimate full build out of residential lots along Montrose Avenue, these conditions are forecast to persist, with the no connection scenario maintaining the highest traffic volumes.

While the “no connection” scenario is forecast to have the highest traffic volumes, all scenarios are well within the capacity of a two-lane residential collector road and there would be no vehicle capacity concerns.

A connection to Maley Drive offers benefits for community connectivity and emergency response times. The connection to Maley Drive provides an alternative to Lasalle Boulevard for east-west travel for residents of this community, which could lower travel times and reduce greenhouse gas emissions. It also provides an alternative to access the community for emergency vehicles. Depending on the location of the emergency, it may be quicker for emergency vehicles to access the location using Maley Drive. If Lasalle Boulevard were blocked, a connection to Maley Drive provides an alternate access.

A meandering connection complicates the design of the community by adding to the road construction cost and potentially reducing the number of units that can be constructed. The City would have to work with the developer to negotiate any additional costs associated with a meandering connection.

To help in community building and reduce the likelihood of shortcutting traffic, we recommend that the new portion of Montrose Avenue be constructed, and the existing portion of Montrose be reconstructed as a “complete street.” For this type of road and these forecast volumes, we would recommend sidewalks on both sides of the street, bike lanes on both sides of the street, one travel lane in each direction and no on-street parking.

As an additional measure to reduce the likelihood of shortcutting traffic, we recommend that the section of Barry Downe Road between Woodbine Avenue and Maley Drive be widened to four lanes. Barry Downe Road is an arterial road with four lanes for vehicle traffic south of Woodbine Avenue. Widening to four lanes north of Woodbine is appropriate for an arterial road and the additional capacity would make this a more attractive route for north-south traffic than Montrose Avenue. Barry Downe Road could continue to be used for north-south intra-city travel while Montrose Avenue would be primarily used for intra-community travel and to access Lasalle Boulevard and Maley Drive by the local community.

5.1 RECOMMENDATIONS

Construct a direct connection of Montrose Avenue to Maley Drive.

Construct the new portion of Montrose Avenue and reconstruct the existing portion of Montrose Avenue as a “complete street” with the following elements:

- Sidewalks on both sides of the road;
- On-street bike lanes on both sides of the road;
- One travel lane in each direction; and
- No on-street parking.

Concurrent with the development of Montrose Avenue North (assumed by the year 2031), widen Barry Downe Road between Maley Drive and Woodbine Avenue to four lanes to help prevent shortcutting traffic on Montrose Avenue.