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| Presented To: | Operations Committee |
| Presented: | Monday, Oct 21, 2019 |
| Report Date | Tuesday, Oct 08, 2019 |
| Type: | Managers' Reports |

Request for Decision

Maley Drive Traffic and Parking By-law Updates

Resolution

THAT the City of Greater Sudbury directs staff to prepare a by-law to amend Traffic and Parking By-Law 2010-1 to implement the recommended changes as outlined in the report entitled "Maley Drive Traffic and Parking By-law Updates" from the General Manager of Growth and Infrastructure, presented at the Operations Committee meeting on October 21, 2019.

Relationship to the Strategic Plan / Health Impact Assessment

This report refers to operational matters.

Report Summary

This report recommends revisions to the Traffic and Parking By-law 2010-1 for the opening of the new Maley Drive extension.

Financial Implications

Recommendations of this report may be carried out within existing approved budget and staff complement.

Signed By

Report Prepared By

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Recommended by the Department

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Recommended by the C.A.O.

Ed Archer
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Background

With the upcoming opening of the Maley Drive Extension many updates are required to the Traffic and Parking By-law 2010-1 to establish how the road will operate as well update existing by-laws to reflect the new built form of the existing section of Maley Drive. Details on the project may be found at <https://www.greatersudbury.ca/live/transportation-parking-and-roads/road-construction-and-projects/maley-drive-extension/>. The required by-law amendments are summarized in Table 1 below.

Table 1 – Summary of Changes to the Traffic and Parking By-law

| <u>Schedule</u> | <u>Change</u> |
|--|---|
| “A” – Placement of Traffic Control Signal System Devices | Remove the intersection of College Boreal and Lasalle Blvd. from Schedule A as it will be controlled with a roundabout instead of traffic control signals. |
| “B” – Parking Prohibited at any Time | In order to ensure the safe and efficient movement of people and goods on the City’s arterial roads, staff recommend parking be prohibited at anytime on all arterial roads. It is recommended to add Maley Drive from Barry Downe Road to Lasalle Boulevard to Schedule B. |
| “J” – Excess Loads | The reconstructed and new section of Maley Drive can support heavy truck traffic at all times of the year. It is recommend to add Maley Drive from National Street to Lasalle Boulevard to the schedule of roadways that are exempt from the reduced load restrictions in the spring. |
| “K” – “U” Turns prohibited | Maley Drive between Barry Downe Road and Lasalle Boulevard will include gravel crossovers to allow emergency vehicles to turnaround prior to reaching the next intersection. To ensure the safe operation of the road, it is recommended that “U” turns be prohibited at these locations. |
| “N” – Through Highways | Maley Drive will act as the new through highway between College Boreal and Barry Downe Road. It is recommended to add Maley Drive from Lasalle Boulevard to Barry Downe Road to Schedule N. |
| “O” – Stops at Intersections | The stop controlled intersection at Maley Drive and Barrydowne Road will be replaced with a roundabout. This intersection is required to be removed from Schedule O. |
| “Q” – Designated Truck Routes | Designated truck routes are roadways on which commercial vehicles over 5 tonnes are permitted to travel through the City. It is recommended to add Maley Drive from Lasalle Boulevard to Falconbridge Road to the schedule of designated truck routes. |
| “R” – Designated Traffic Lanes | The reconstructed intersection of Maley Drive and Falconbridge Road includes dedicated double left hand turning lanes for the west side of the intersection and a dedicated left and right hand turning lane from Maley Drive onto Falconbridge Road on the east side of the intersection. It is required that the description of these turning lanes be added to Schedule R. |
| “S” – Designated Centre Lane of Roadway for Left Turns Only | The reconstructed easterly portion of Maley Drive includes a two way centre left hand turn lane from National Street to Falconbridge Road. It is required that this centre left hand turn lane be added to Schedule S. |
| “U” – Higher or Lower Rates of Speed Than That Prescribed by the Highway Traffic Act | The new section of Maley Drive is recommended to be posted at 80 km/h and the reconstructed section of Maley Drive is recommended to maintain the current posted speed limits. Details regarding the recommended speed limits are found below. |

Maley Drive Speed Limit Analysis

In 2010, City Council adopted the use of the Canadian Guidelines for Establishing Posted Speed Limits published by the Transportation Association of Canada (TAC) for evaluating posted speeds on arterial and major collector roadways. These guidelines assess appropriate posted speed limits based primarily on the classification, function and physical characteristics of a roadway.

In order to complete the analysis of Maley Drive, staff segmented Maley Drive into four segments based on the construction of the road (divided vs. undivided), the roadside environment (rural vs. urban) and the classification of the road (primary arterial vs. secondary arterial). The four segments along with the current posted speed limits, the speed limits recommended by the TAC Guidelines and staff's recommended posted speed limits can be found in Table 2 below.

Table 2 – Summary of Recommended Posted Speed Limits

| <u>Location</u> | <u>Current Posted Speed Limit</u> | <u>TAC Guidelines Recommended Speed Limit</u> | <u>Staff Recommended Posted Speed Limit</u> |
|---------------------------------------|--|--|--|
| Lasalle Boulevard to Barry Downe Road | N/A | 100 km/h | 80 km/h |
| Barry Downe Road to Lansing Avenue | 70 km/h | 90 km/h | 70 km/h |
| Lansing Avenue to National Street | 70 km/h & 60 km/h | 80 km/h | 60 km/h |
| National Street to Falconbridge Road | 60 km/h | 60 km/h | 60 km/h |

As noted in Table 2, staff are recommending speed limits less than what is recommended by the TAC Guidelines for 3 of the 4 segments. These reduced speed limits are being recommended for the following reasons:

- Maley Drive has been designed for operating speeds up to 100 km/h in the rural divided area and 80 km/h in the urban undivided area. The design speed of a road is used to select the appropriate values for geometric features on a road such as the radii of horizontal curves and length of vertical curves and which are based on the minimum stopping sight distances for the selected speed when driving conditions are optimal. It is common practice that jurisdictions design roads for 20 km/h over the anticipated posted speed limit for rural connecting roads (ex. Municipal Road 35 or Municipal Road 80) and 10 km/h for roads within a more densely developed area. This difference between the design speed and posted speed limit introduces a factor of safety during periods when driving conditions are not optimal, like during inclement weather, as well as anticipates that a percentage of vehicles will always travel in excess of the posted speed limit. This factor of safety also provides a higher level of safety for the vehicles that travel the posted speed limit and must share the road with those who do not drive according to the conditions or those who are driving in excess of the posted speed limit.
- Horizontal curves have been designed into the approaches of the Maley Drive roundabouts to help reduce the operating speeds of vehicles as they approach the roundabouts. These horizontal curves will have a posted advisory speed of 30 km/h. The lower the speed differential between vehicles entering the roundabout area and those already within it has shown to have a positive impact on safety within the roundabout and the roadway itself.

- Staff are recommending that the transitions from the recommended 80 km/h posted speed limit and the 60 km/h posted occur through the roundabouts. As drivers will already be required to reduce their speed when entering the roundabout, the roundabouts act to slow vehicles for the posted speed reduction and to better define the different speed zones. The recommended 70 km/h speed zone would act as a transition area between the rural divided portion of Maley Drive and the undivided built up portion east of Lansing Avenue. This will reinforce to drivers that the surrounding built environment is changing and slower speeds and more caution is required.

Recommendation

As described in this report, many updates to the Traffic and Parking By-Law 2010-1 are required to establish how Maley Drive will operate as well update existing by-laws to reflect the new built form of the existing section of the road. Staff recommend a by-law be passed by City Council to update the Traffic and Parking By-Law 2010-1 to implement the changes detailed in this report.

Resources Cited:

City of Greater Sudbury, *Maximum Road Speed Limits*, September 2010,

Accessed Online:

<http://agendasonline.greatersudbury.ca/index.cfm?pg=agenda&action=navigator&id=310&itemid=3480&lang=en>

Appendix 'A'



Automated Speed Limit Guidelines

FORM A - Automated Speed Limit Guidelines Spreadsheet

Version:
10-Apr-09

| | | | | |
|--------------------------------|-------------------------|--|------------------|------|
| Name of Corridor: | Maley Drive | | | |
| Segment Evaluated: | Lasalle Boulevard | to | Barry Downe Road | |
| Geographic Region: | Sudbury | | | |
| Road Agency: | City of Greater Sudbury | | | |
| Road Classification: | Arterial | Length of Corridor: | 4,500 | m |
| Urban / Rural: | Rural | Design Speed: (Required for Freeway, Expressway, Highway) | 100 | km/h |
| Divided / Undivided: | Divided | Current Posted Speed: (For information only) | | km/h |
| Major / Minor: | Major | Prevailing Speed: (85th Percentile - for information only) | | km/h |
| # Through Lanes Per Direction: | 2+ lanes | Policy: (Maximum Posted Speed) | No policy | |

| | | RISK | Score |
|----|---|-----------------------|-------|
| A1 | GEOMETRY (Horizontal) | Lower | 3 |
| A2 | GEOMETRY (Vertical) | Lower | 3 |
| A3 | AVERAGE LANE WIDTH | Lower | 3 |
| B | ROADSIDE HAZARDS | Medium | 6 |
| C1 | PEDESTRIAN EXPOSURE | Medium | 4 |
| C2 | CYCLIST EXPOSURE | Medium | 6 |
| D | PAVEMENT SURFACE | Lower | 3 |
| E1 | NUMBER OF INTERSECTIONS WITH PUBLIC ROADS | Number of Occurrences | 1 |
| | STOP controlled intersection | 0 | |
| | Signalized intersection | 0 | |
| | Roundabout or traffic circle | 2 | |
| | Crosswalk | 0 | |
| | Active, at-grade railroad crossing | 0 | |
| | Sidestreet STOP-controlled or lane | 0 | |
| E2 | NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS | Number of Occurrences | 0 |
| | Left turn movements permitted | 0 | |
| | Right-in / Right-out only | 0 | |
| E3 | NUMBER OF INTERCHANGES | Number of Occurrences | 1 |
| | Number of interchanges along corridor | 2 | |
| F | ON-STREET PARKING | N/A | 0 |

Total Risk Score:

30

Recommended Posted
Speed Limit (km/h):

As determined by road characteristics

100

As determined by policy

No policy

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

Comments:



Automated Speed Limit Guidelines

FORM A - Automated Speed Limit Guidelines Spreadsheet

Version:
10-Apr-09

| | | | | |
|--------------------------------|-------------------------|--|----------------|------|
| Name of Corridor: | Maley Drive | | | |
| Segment Evaluated: | Barry Downe Road | to | Lansing Avenue | |
| Geographic Region: | Sudbury | | | |
| Road Agency: | City of Greater Sudbury | | | |
| Road Classification: | Arterial | Length of Corridor: | 1,100 | m |
| Urban / Rural: | Rural | Design Speed: (Required for Freeway, Expressway, Highway) | 100 | km/h |
| Divided / Undivided: | Divided | Current Posted Speed: (For information only) | 70 | km/h |
| Major / Minor: | Minor | Prevailing Speed: (85th Percentile - for information only) | | km/h |
| # Through Lanes Per Direction: | 2+ lanes | Policy: (Maximum Posted Speed) | No policy | |

| | | RISK | Score |
|----|---|-----------------------|-------|
| A1 | GEOMETRY (Horizontal) | Lower | 3 |
| A2 | GEOMETRY (Vertical) | Lower | 3 |
| A3 | AVERAGE LANE WIDTH | Lower | 3 |
| B | ROADSIDE HAZARDS | Medium | 6 |
| C1 | PEDESTRIAN EXPOSURE | Medium | 4 |
| C2 | CYCLIST EXPOSURE | Medium | 6 |
| D | PAVEMENT SURFACE | Lower | 3 |
| E1 | NUMBER OF INTERSECTIONS WITH PUBLIC ROADS | Number of Occurrences | 5 |
| | STOP controlled intersection | 0 | |
| | Signalized intersection | 0 | |
| | Roundabout or traffic circle | 2 | |
| | Crosswalk | 0 | |
| | Active, at-grade railroad crossing | 0 | |
| | Sidestreet STOP-controlled or lane | 1 | |
| E2 | NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS | Number of Occurrences | 1 |
| | Left turn movements permitted | 0 | |
| | Right-in / Right-out only | 3 | |
| E3 | NUMBER OF INTERCHANGES | Number of Occurrences | 0 |
| | Number of interchanges along corridor | 0 | |
| F | ON-STREET PARKING | N/A | 0 |

Total Risk Score:

34

Recommended Posted
Speed Limit (km/h):

As determined by road characteristics

90

As determined by policy

No policy

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

Comments:



Automated Speed Limit Guidelines

FORM A - Automated Speed Limit Guidelines Spreadsheet

Version:
10-Apr-09

| | | | | |
|--------------------------------|-------------------------|--|-----------------|------|
| Name of Corridor: | Maley Drive | | | |
| Segment Evaluated: | Lansing Avenue | to | National Street | |
| Geographic Region: | Sudbury | | | |
| Road Agency: | City of Greater Sudbury | | | |
| Road Classification: | Arterial | Length of Corridor: | 1,000 | m |
| Urban / Rural: | Rural | Design Speed: (Required for Freeway, Expressway, Highway) | 80 | km/h |
| Divided / Undivided: | Undivided | Current Posted Speed: (For information only) | 60 | km/h |
| Major / Minor: | Minor | Prevailing Speed: (85th Percentile - for information only) | | km/h |
| # Through Lanes Per Direction: | 2+ lanes | Policy: (Maximum Posted Speed) | No policy | |

| | | RISK | Score |
|----|---|-----------------------|-------|
| A1 | GEOMETRY (Horizontal) | Lower | 3 |
| A2 | GEOMETRY (Vertical) | Lower | 3 |
| A3 | AVERAGE LANE WIDTH | Lower | 3 |
| B | ROADSIDE HAZARDS | Medium | 6 |
| C1 | PEDESTRIAN EXPOSURE | Medium | 4 |
| C2 | CYCLIST EXPOSURE | Medium | 6 |
| D | PAVEMENT SURFACE | Lower | 3 |
| E1 | NUMBER OF INTERSECTIONS WITH PUBLIC ROADS | Number of Occurrences | 5 |
| | STOP controlled intersection | 0 | |
| | Signalized intersection | 0 | |
| | Roundabout or traffic circle | 1 | |
| | Crosswalk | 0 | |
| | Active, at-grade railroad crossing | 1 | |
| | Sidestreet STOP-controlled or lane | 1 | |
| E2 | NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS | Number of Occurrences | 5 |
| | Left turn movements permitted | 8 | |
| | Right-in / Right-out only | 1 | |
| E3 | NUMBER OF INTERCHANGES | Number of Occurrences | 0 |
| | Number of interchanges along corridor | 0 | |
| F | ON-STREET PARKING | N/A | 0 |

Total Risk Score:

38

Recommended Posted
Speed Limit (km/h):

As determined by road characteristics

80

As determined by policy

No policy

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

Comments:



Automated Speed Limit Guidelines

FORM A - Automated Speed Limit Guidelines Spreadsheet

Version:
10-Apr-09

| | | | | |
|--------------------------------|-------------------------|--|-------------------|------|
| Name of Corridor: | Maley Drive | | | |
| Segment Evaluated: | National Street | to | Falconbridge Road | |
| Geographic Region: | Sudbury | | | |
| Road Agency: | City of Greater Sudbury | | | |
| Road Classification: | Arterial | Length of Corridor: | 600 | m |
| Urban / Rural: | Urban | Design Speed: (Required for Freeway, Expressway, Highway) | 80 | km/h |
| Divided / Undivided: | Undivided | Current Posted Speed: (For information only) | 60 | km/h |
| Major / Minor: | Minor | Prevailing Speed: (85th Percentile - for information only) | | km/h |
| # Through Lanes Per Direction: | 2+ lanes | Policy: (Maximum Posted Speed) | No policy | |

| | | RISK | Score |
|----|---|-----------------------|-------|
| A1 | GEOMETRY (Horizontal) | Lower | 2 |
| A2 | GEOMETRY (Vertical) | Lower | 2 |
| A3 | AVERAGE LANE WIDTH | Lower | 2 |
| B | ROADSIDE HAZARDS | Medium | 2 |
| C1 | PEDESTRIAN EXPOSURE | Medium | 6 |
| C2 | CYCLIST EXPOSURE | Medium | 6 |
| D | PAVEMENT SURFACE | Lower | 1 |
| E1 | NUMBER OF INTERSECTIONS WITH PUBLIC ROADS | Number of Occurrences | 10 |
| | STOP controlled intersection | 0 | |
| | Signalized intersection | 1 | |
| | Roundabout or traffic circle | 0 | |
| | Crosswalk | 0 | |
| | Active, at-grade railroad crossing | 0 | |
| | Sidestreet STOP-controlled or lane | 2 | |
| E2 | NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS | Number of Occurrences | 15 |
| | Left turn movements permitted | 16 | |
| | Right-in / Right-out only | 0 | |
| E3 | NUMBER OF INTERCHANGES | Number of Occurrences | 0 |
| | Number of interchanges along corridor | 0 | |
| F | ON-STREET PARKING | N/A | 0 |

Total Risk Score:

46

Recommended Posted
Speed Limit (km/h):

As determined by road characteristics

60

As determined by policy

No policy

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

Comments: