

Committee of the Whole (2) Report

DATE: Tuesday, April 12, 2022

WARD(S): 1

TITLE: NAPIER STREET AREA TRAFFIC REVIEW

FROM:

Zoran Postic, Deputy City Manager, Public Works

ACTION: DECISION

Purpose

To report on the findings of the feasibility study in examining the option of closing part, or all of Napier Street at Stegman's Mill Road, as directed by Council on November 17, 2020.

Report Highlights

- Council, at its meeting on November 17, 2020, directed staff to conduct a feasibility study to close part or all of Napier Street at Stegman's Mill Road, and to carry out public consultation, as deemed necessary.
- Staff completed a feasibility study and consultations with neighbourhood residents and key stakeholders.
- While the local roadways within the study area are operating as designed and are serving their intended function, higher speeds were observed on Islington Avenue, north of John Street and Stegman's Mill Road.
- Based on a sight line review, the left turn outbound movement at the intersection (southbound left turn) is the critical movement that restricts sightlines. Eliminating this left turn movement can reduce the potential for collisions. To increase safety at the intersection, a partial road closure with right in/right out access is preferred.
- Traffic measures have been identified to manage speed and improve traffic operations along Islington Avenue, north of John Street and Stegman's Mill Road.

Recommendations

1. That the recommendation of a partial road closure with right in/right out access on Napier Street at Stegman's Mill Road, eliminating the left turn outbound movement be endorsed;
2. That the implementation of a southbound left-turn prohibition (anytime) and an eastbound left-turn prohibition (anytime) at the intersection of Napier Street and Stegman's Mill Road be approved;
3. That a By-law be enacted to amend By-law 284-94, the Consolidated Traffic By-law, to add a southbound left-turn prohibition (anytime) and an eastbound left-turn prohibition (anytime) at the intersection of Napier Street and Stegman's Mill Road;
4. That the implementation of a speed limit reduction on Islington Avenue from 150m north of Nashville Road to Highway 27, from 50km/h to 40km/h be approved;
5. That a By-law be enacted to amend By-law 284-94, the Consolidated Traffic By-law, authorizing the speed limit reduction from 50km/h to 40km/h on Islington Avenue from 150m north of Nashville Road to Highway 27;
6. That the implementation of a 40km/h Neighbourhood Area for the Napier Street community be approved, as set out in Attachment No. 6;
7. That a By-law be enacted to amend By-law 284-94, the Consolidated Traffic By-law, authorizing a maximum rate of speed at 40km/h for the Napier Street Neighbourhood Area; and
8. That the City Clerk forward a copy of this report to the Regional Municipality of York and York Regional Police.

Background

In November 2020, Council directed staff to conduct a feasibility study to close part or all of Napier Street at Stegman's Mill Road and carry out public consultation. An independent consultant was retained to undertake a traffic operation and road safety review for the Napier Street area.

Napier Street is a local road with a 7.25m pavement width. The street is approximately 320m from Stegman's Mill Road to its northern limit. Napier Street intersects Kellam Street and John Street, which intersects Islington Avenue. Napier Street, John Street, and Kellam Street are local residential roadways with a statutory speed limit of 50km/h.

Islington Avenue is a north-south, two-lane, minor collector roadway. Islington Avenue has a posted speed limit of 40km/h from Major Mackenzie Drive to 150m north of Nashville Road.

Stegman's Mill Road is an east-west, two-lane, minor collector roadway. Stegman's Mill Road connects Islington Avenue to Teston Road. Stegman's Mill Road has a posted

speed limit of 40km/h. An unsignalized “T” intersection exists at Napier Street and Stegman’s Mill Road with a stop control on Napier Street.

The village of Kleinburg is not serviced by local transit. Sidewalks are provided along Islington Avenue and Stegman’s Mill Road (south side only). The local roadways of Napier Street, John Street, and Kellam Street within the study area do not provide any sidewalks. A location plan is included as Attachment No. 1.

At the November 17, 2020, Council meeting, staff were directed to undertake a feasibility study of closing part or all of Napier Street at Stegman’s Mill Road and carry out public consultation as deemed necessary. Progress reports were provided in January and June 2021.

The City retained Paradigm Transportation Solutions Limited as an independent consultant to conduct a comprehensive traffic operations and road safety review for the Napier Street area. The study included an assessment of roadway characteristics, traffic operations, a safety assessment of the Napier Street and Stegman’s Mill Road intersection, and the development of potential solutions. Stakeholder consultation and community engagement were part of the study process. An executive summary of the study is provided in Attachment No. 2.

Previous Reports/Authority

Traffic By-Law 284-94:

[Consolidated Traffic By-law 284-94](#)

Request for Road Closure at Napier St. and Stegman’s Mill, Extract from Council meeting of November 17, 2020 (Item 9, Report No. 54 of the Committee of the Whole):
[filestream.ashx \(escribemeetings.com\)](#)

Napier Street Road Closure Status Update, Extract from Council meeting of January 26, 2021 (Item 6, Report No. 1 of the Committee of the Whole):
[Committee of the Whole \(1\) Agenda \(escribemeetings.com\)](#)

Napier Street Road Closure Status Update, Extract from Council meeting of June 22, 2021 (Item 16, Report No. 32 of the Committee of the Whole):
[filestream.ashx \(escribemeetings.com\)](#)

MoveSmart – Mobility Management Strategy, Extract from Council meeting of March 10, 2021 (Item 1, Report No. 10 of the Committee of the Whole (Working Session)):
[filestream.ashx \(escribemeetings.com\)](#)

Establishing Speed Limits on City Roadways, Extract from Council Meeting of June 22, 2021 (Item 1, Report No. 31 of the Committee of the Whole (Working Session)):
[filestream.ashx \(escribemeetings.com\)](filestream.ashx (escribemeetings.com))

Analysis and Options

The following are the comprehensive traffic operations and road safety review findings.

While local roadways within the study area are operating as designed and are serving their intended function, higher speeds were observed on Islington Avenue, north of John Street and Stegman's Mill Road.

Extensive data collection was undertaken to profile the characteristics of the study area. This included traffic volume, speed, classification and collision data, and an origin-destination study. Data collection began in late April 2021 and was collected again in July 2021 and October 2021 to ensure representative travel data was obtained. The traffic speed and volume analysis findings for Napier Street and adjacent roads can be found in Attachment No. 2, figure E3.

The study findings determined daily traffic volumes along the local roadways within the study area are within the appropriate range for the roadway classifications.

The operating speeds on Islington Avenue and Stegman's Mill Road exceeded the posted speed limit of 40km/h, with operating speed (85th percentile speed) in the range of 55km/h to 56km/h, and 44km/h to 47km/h respectively.

Non-local traffic was identified as infiltrating through local residential streets; however, the overall volume and infiltration traffic was less than 16 vehicles during peak periods (inclusive of weekends and weekdays). The travel time study findings determined that using the Napier area streets to bypass the Islington Avenue and Stegman's Mill Road intersection resulted in a minor travel time savings from 2 to 26 seconds. Study area intersections were all operating at acceptable levels of service and within capacity.

A sightline assessment determined the outbound left turn movements at the intersection were identified as the critical movement with sightline restrictions.

The findings of a sight line assessment at the intersection of Napier Street and Stegman's Mills Road intersection determined the outbound left turn movement is the critical movement with restricted sightlines at the intersection.

Options to close part or all of Napier Street at Stegman’s Mill Road to increase the level of safety at the intersection were developed in consultation with the community and key stakeholders.

A comprehensive public consultation and engagement campaign was conducted to collect resident feedback. This included a community meeting held virtually on November 23, 2021, followed by an online survey posted on the City’s engagement platform *Have Your Say, Vaughan*, from November 23, 2021, to December 17, 2021. Additionally, a paper copy of the survey was mailed to the 33 households within the Napier Street study area. The public meeting and online survey were advertised and promoted through several outreach methods. Sixteen people attended the virtual public meeting. A total of 20 surveys were completed. A summary of the survey response from the public engagement report is provided in Attachment No. 3.

The options to close part or all of Napier Street at Stegman’s Mill Road were presented to the community and key stakeholders. Details of the full road closure and partial road closure are outlined in Attachment No. 4 and 5.

Table 1: Proposed options for full road closure and partial road closure

Full Road Closure Options	Partial Road Closure Options
1A: A Cul-de-Sac	2A: A right in/right out and left in access from Stegman’s Mill Road by implementing a physical island to restrict outbound left turn movements from Napier Street.
1B: Dead End – Curb reinstatement resulting in a dead-end	2B: A right in/right out access by implementing a physical island to restrict inbound and outbound left movements
1C: Gated Emergency Access – traffic/barrier gate	2C: A right in access by implementing a curb bump out to restrict outbound movements (allow inbound movements only)

Although the complete closure of Napier Street would eliminate traffic infiltration and sightline issues, it would restrict vehicle access for residents and non-residents alike. It would also not be feasible from an operational perspective.

The partial road closure options would improve traffic safety by eliminating the critical left turn movement at the intersection, reducing traffic infiltration, and minimizing traffic impacts to the surrounding road network. These options would also restrict access for residents and non-residents alike.

There is no evidence of reported collisions at the Napier Street and Stegman's Mill Road intersection.

A review to assess the safety performance of the Napier Street and Stegman's Mill Road intersection and adjacent roadways has been undertaken. The findings include the following:

- The review of available reported collision data did not identify any patterns or trends concerning reported collisions at the intersection.
- No fatal injuries were reported, nor any collisions involving pedestrians or cyclists were found. All reported collisions resulted in property damage only (no injuries).
- The recommended speed limit along Napier Street, John Street, and Kellam Street, based on a national guideline (TAC) assessment, is 40 km/h. The observed 85th percentile speed shows compliance within the recommended speed limit of 40km/h.

Based on community feedback and stakeholder input, the partial road closure right in/right out is preferred to improve road safety at the Napier Street and Stegman's Mill Road intersection.

Community support for the proposed options varies; however, both public meeting participants and survey respondents expressed the desire to improve the safety within the study area. A total of 20 surveys were received from the community and provided the following information:

- 75% of respondents confirmed they lived within the study area, while 25% chose not to disclose their addresses.
- 60% responded in support of a partial road closure, and based on the partial road closure options, the right in/right out access option was preferred.

In consultation with Fire Services, Roads Operations, Environmental Services (waste collection), York Region Emergency Services and York Region Traffic Safety, a partial closure of a right in/right out access is the preferred option to balance road safety and access.

Input from the community and stakeholders support a partial road closure of a right in/right out to improve road safety. A detailed design is required before construction. It is recommended to further consult with the community during the detailed design stage to inform residents about the design details and construction should this option be endorsed.

Interim measures (Attachment No. 7) are proposed to address the intersection prior to construction that include:

- Line painting with flexible bollards
- Turn prohibition with signage to restrict the southbound left turn and eastbound left turn at the subject intersection. The turn prohibition will remain after construction.

A communication plan that includes, but not limited to direct mail to area residents and temporary signage to inform the change in access configuration will be developed.

Additional traffic measures have been identified to manage speed and enhance traffic operations along roadways in the study area.

Speeding on Islington Avenue, north of John Street and Stegman's Mill Road, and the lack of sidewalks along the roadways in the study area have been identified.

To manage speed and enhance traffic operations, the following measures (aligned with plans and programs in the MoveSmart Mobility Management Strategy) are recommended for consideration:

- Artificial lane narrowing via pavement markings on Islington Avenue, north of John Street.
- Transverse speed pavement markings on Islington Avenue, north of John Street and Stegman's Mill Road, east of Napier Street.
- Lowering the speed limits on study area roadways (John Street, Kellam Street, Napier Street, Islington Avenue, north of John Street) to 40km/h to be consistent with adjacent roadway sections.
- Designation of the Napier Street area as a 40km/h Neighbourhood Area. A speed revision map is in Attachment No. 6.
- Increased warning signage to raise awareness of pedestrians with Slow tabs on study area roadways.
- Speed boards to be scheduled as part of the City's speed compliance program.

Financial Impact

The Kleinburg Village Improvements capital project 23-04RW with road reconstruction work, streetscaping and landscaping, and new active transportation facilities on Stegman's Mill Road is currently underway. The Kleinburg Parking Strategy provides solutions and strategies to manage parking in the short, medium, and long term. These

improvements support the City’s continued commitment to ensuring the long-term sustainability of municipal infrastructure.

The design and construction of the proposed partial road closure with right in/right access can be incorporated into capital project 23-04RW with design in 2022 and construction in 2023. The estimated cost for design is \$13,185 and for construction is \$110,000.

Signage will be implemented for the speed limit revision on Islington Avenue and local roads within the study area. Line painting will also be implemented as recommended. The capital cost associated with the pavement markings and signage installation is estimated to be \$11,200 and is supported in the approved capital projects FL 9635-22 and FL-9579-21.

The ongoing maintenance cost for the sign and pavement markings will be incorporated in future Operating Budgets through the budget process.

Table 2: Estimated cost for pavement markings and signage

ITEM	ESTIMATED COST
SLOW DOWN Stenciled pavement marking	\$3,500
SLOW DOWN 40 KM/H Stenciled pavement marking/signs (Neighbourhood Area 40km/h)	\$3,300
Edgeline pavement markings	\$1,200
Speed Limit 40 km/h signs	\$1,100
Painted Median - Interim	\$600
Flexible Bollards - Interim	\$1000
Signage – left turn prohibitions	\$500
Total	\$11,200

Broader Regional Impacts/Considerations

The proposed turn prohibitions, and speed limit revisions on Islington Avenue, north of John Street to Highway 27 and the local roads within the study area will promote speed consistency and improve traffic operations.

Upon approval of the recommended turn prohibitions, and speed limit reductions, a copy of this report will be forwarded to York Regional Police for their awareness and to develop enforcement strategies.

Conclusion

The study area roadways serve their intended function within the overall transportation system. Speed reduction on study area roadways to 40km/h is recommended to

enhance traffic operations and ensure consistency in speed with adjacent roadway sections. Additional measures, including line painting, signage, and the implementation of a 40km/h Neighbourhood Area are also recommended.

Based on a sight line review, the left turn outbound movement at the intersection (southbound left turn) is the critical movement that restricts sightlines. A partial road closure with right in/right out access is preferred to increase safety at the intersection. The design and construction can be incorporated into the Kleinburg Village Improvements capital project with design in 2022 and construction planned in 2023. During the detailed design stage, further consultation with the community is recommended to inform residents about the design details and construction.

For more information, please contact Peter Pilateris, Director of Transportation and Fleet Management Services, ext. 6141

Attachments

1. Location Map – Study Area
2. Executive Summary Report – Paradigm Transportation Solutions Limited
3. Engagement Report Executive Summary - Lura
4. Full Road Closure Options for Napier Street at Stegman’s Mill Road
5. Partial Road Closure Options for Napier Street at Stegman’s Mill Road
6. Speed Limit Revision Map
7. Napier Street and Stegman’s Mill Road Intersection – Interim measure

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