

CITY OF VAUGHAN

EXTRACT FROM COUNCIL MEETING MINUTES OF MARCH 20, 2018

Item 3, Report No. 10, of the Committee of the Whole, which was adopted without amendment by the Council of the City of Vaughan on March 20, 2018.

3 TEMPORARY ROAD CLOSURE FOR CULVERT REPLACEMENTS ON KIRBY ROAD AND KIPLING AVENUE

The Committee of the Whole recommends approval of the recommendation contained in the following report of the Deputy City Manager, Public Works, dated March 6, 2018:

Purpose

To seek Council's approval for temporary long-duration road closures on Kirby Road and on Kipling Avenue at four locations, as shown on Attachment No.1, to facilitate the safe, timely and efficient construction of the municipal infrastructure.

Recommendations

1. That the necessary by-law be passed authorizing:
 - a) the temporary closure on Kipling Avenue from Kirby Road to approximately 200 metres south of Kirby Road, tentatively scheduled to occur between July 3 and 16, 2018;
 - b) the temporary closure on Kirby Road from Kipling Avenue to approximately 200 metres east of Kipling Avenue, tentatively scheduled to occur between July 30 and August 12, 2018;
 - c) the temporary closure on Kirby Road from Kipling Avenue to approximately 200 metres west of Kipling Avenue, tentatively scheduled to occur between August 27 and September 9; and
 - d) the temporary closure on Kirby Road from Albion-Vaughan Road to Cold Creek Road, tentatively scheduled to occur between July 3 and August 31, 2018.

Report Highlights

- Temporary road closures have been proposed to facilitate the replacement and rehabilitation of four existing culverts to occur in a safe, timely and efficient manner.
- Allows for the work to be completed within the stipulated timelines for carrying out construction activities in creeks.
- Staff will prepare detailed traffic management and communication plan for each location.

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Background

In 2016, the following culverts were identified in need of replacement or rehabilitation:

1. Kirby Road over Creek Culvert (I.D. #BL48_CL001) - On Kirby Road, 0.05 km east of Kipling Avenue, corrugated steel culvert;
2. Kipling Avenue over Creek Culvert (I.D. #BL55_CL001) - On Kipling Avenue, 0.05 km south of Kirby Road, corrugated steel culvert;
3. Kirby Road over Creek Culvert (I.D. #BL55_CL004) - On Kirby Road, 0.1 km west of Kipling Avenue, corrugated steel culvert; and
4. Kirby Road over Creek Culvert (I.D. #BL69_CL001) - On Kirby Road, 0.08 km west of Cold Creek Road, concrete culvert.

Replacement of the existing corrugated steel culvert structures noted under Items 1, 2 and 3, is necessary to address structural deformations, soil erosion, metal corrosion, debris / silt buildup that limit each structure's serviceability and lifespan. Rehabilitation of the existing concrete culvert structure under Item 4 is required to address the detached guiderails, narrow travel lane widths and various other deficiencies that limit its serviceability and service life.

Previous Reports/Authority

Not Applicable.

Analysis and Options

The proposed temporary road closure will establish a safer work environment for the construction workers as well as the travelling public and increases construction efficiency

Larger construction equipment will be required to excavate and replace the corrugated steel culverts and to rehabilitate the existing concrete culvert. The construction equipment needed, will occupy most of the roadway and additional space will also be required to load trucks with excavated material, as well as unload materials brought in to the site. Alternate rehabilitation measures, such as trenchless methodologies, were also explored to mitigate traffic impacts and have been determined to not be feasible.

There are no residential properties directly fronting onto the section of roadway where these culverts will be replaced or rehabilitated. Given the constructability issues noted above and after exploring the available construction methods, processes and staging alternatives for these works, temporary road closures have been determined to be the optimal option to undertake these works.

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The closure of these roads will establish a safer work environment for the construction workers as well as the travelling public and increases construction efficiency and reduces the overall project risk. It will also allow the work to be completed within the working windows allowed for undertaking construction activities in creeks.

The critical work activities have been planned and scheduled to meet the timelines stipulated for the in-water work restrictions imposed by the Toronto and Region Conservation Authority (TRCA) per the Ministry of Natural Resources and Forestry (MNRF), that both have a restriction to start work after July 1, 2018 and be completed by September 15, 2018.

A comprehensive traffic management plan will be developed to address all users that travel Kirby Road and Kipling Avenue within the construction zones

Kirby Road between Highway 27 and Pine Valley Drive, is a two-lane local road with a posted speed of 60 km/h, with a volume of approximately 365 vehicles per day. Kipling Avenue between Kirby Road and Teston Road, is a two-lane local road with a posted speed of 80 km/h, with an approximate volume of 135 vehicles per day. Kirby Road between Albion-Vaughan Road and Cold Creek Road, is a two-lane local road with a posted speed of 80 km/h, with a volume of approximately 427 vehicles per day.

The relatively low total volume of local traffic being diverted because of these proposed closures can be accommodated by other road links within the transportation network. The impact on the overall network resulting from these short-term closures can be appropriately managed.

Local traffic movement will be achievable by detour routes as illustrated in Attachment Nos. 2 to 5. A detailed traffic management plan for each temporary road closure will be developed. Road closure signage and barricades will be installed and maintained by the general contractor as a means of notifying the public of the closure period.

Financial Impact

The total project cost is estimated to be \$1,500,000 which includes administrative recovery and applicable taxes. The total estimated cost falls within the approved 2018 Capital Budget (Capital Project CD-2020-16 and ID-2053-18).

Broader Regional Impacts/Considerations

The proposed road closure and traffic management plan will be coordinated with York Region as the detour routes will include Highway 27.

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Conclusion

Road closures have been determined to be the optimum alternative to facilitate the replacement of the existing corrugated steel culverts, in the vicinity of the Kipling Avenue and Kirby Road intersection, and the rehabilitation of the existing concrete culvert on Kirby Road, west of Cold Creek Road. This will allow the work to be undertaken in an efficient and safe manner and meet the construction timelines stipulated by the approving agencies.

For more information, please contact: Jack Graziosi, Director of Infrastructure Delivery, Ext. 8201

Attachments

1. Location Plan for Temporary Road Closures
2. Interim Traffic Management Plan - Kirby Road east of Kipling Avenue
3. Interim Traffic Management Plan - Kirby Road west of Kipling Avenue
4. Interim Traffic Management Plan - Kipling Avenue south of Kirby Road
5. Interim Traffic Management Plan - Kirby Road west of Cold Creek Road

Prepared by

Mohammad Kashani, Project Manager, Ext. 8188

Mohan Toor, Manager, Design & Construction (West) Ext. 8144

(A copy of the attachments referred to in the foregoing have been forwarded to each Member of Council and a copy thereof is also on file in the office of the City Clerk.)

Item:



Committee of the Whole Report

DATE: Tuesday, March 06, 2018

WARD(S): 1

TITLE: Temporary Road Closure for Culvert Replacements on Kirby Road and Kipling Avenue

FROM:

Stephen Collins, Deputy City Manager, Public Works

ACTION: DECISION

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Attachments

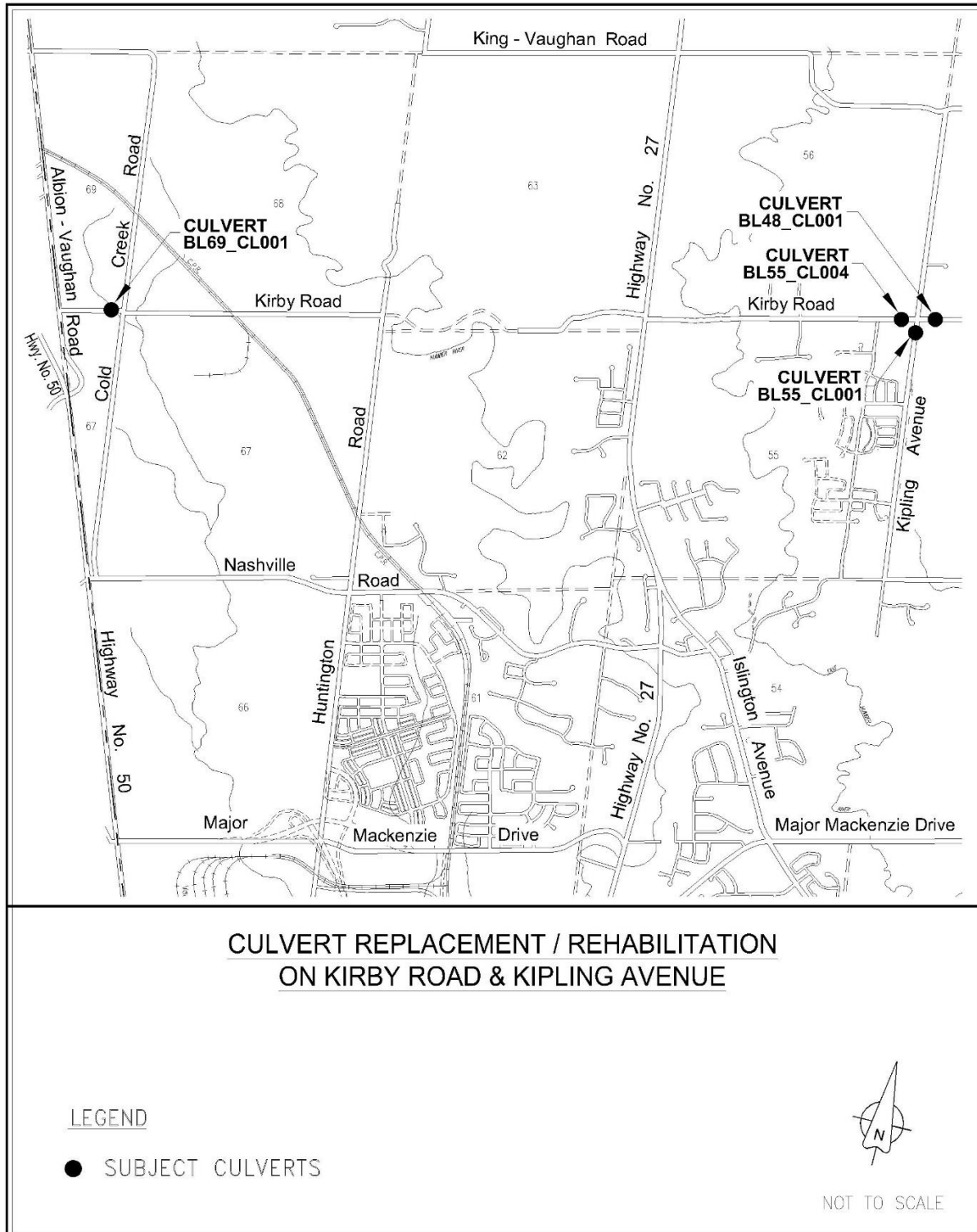
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Prepared by

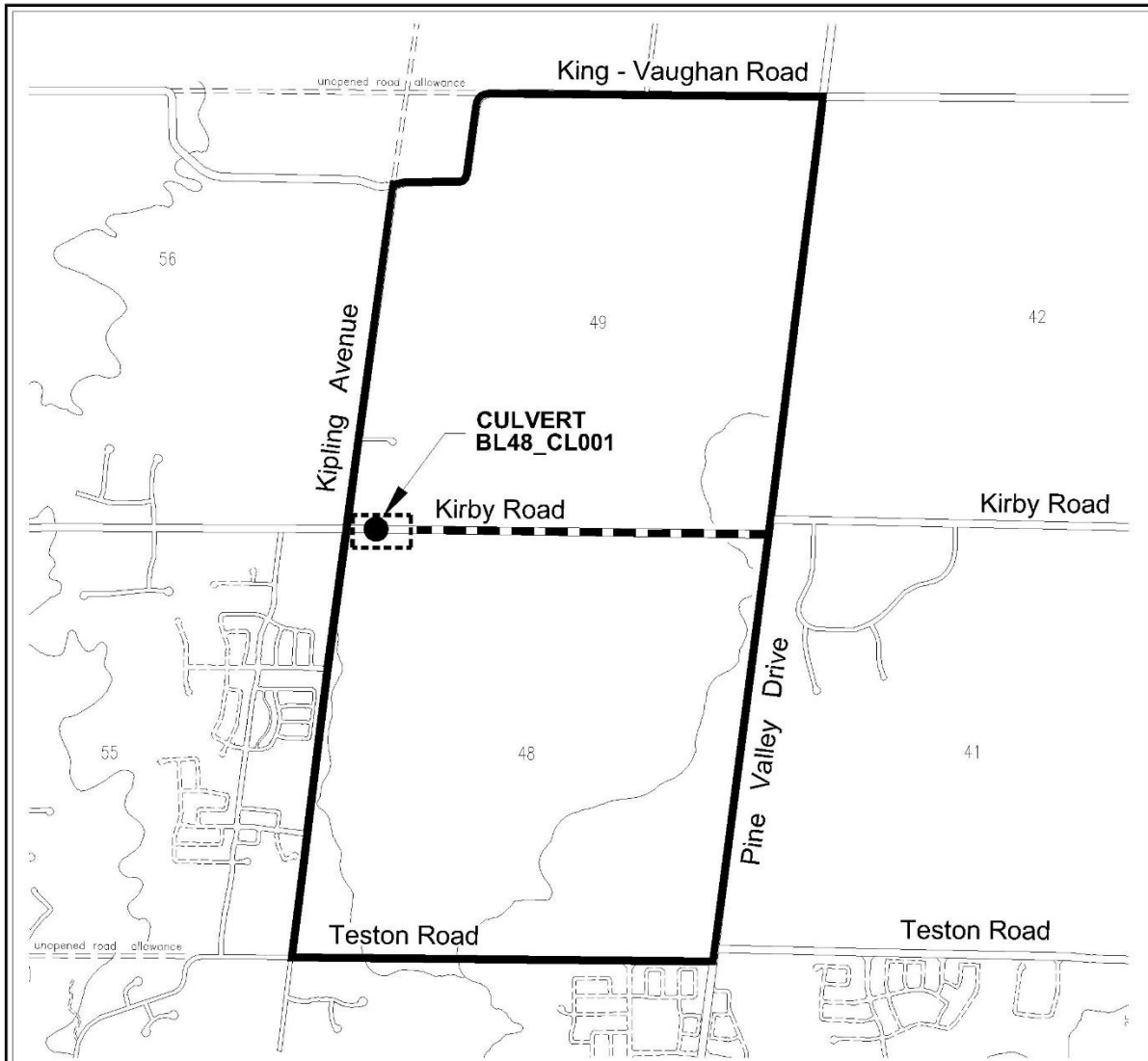
Mohammad Kashani, Project Manager, Ext. 8188

Mohan Toor, Manager, Design & Construction (West) Ext. 8144

ATTACHMENT No. 1







ATTACHMENT No. 2



INTERIM TRAFFIC MANAGEMENT PLAN CULVERT BL48 - CL001 ON KIRBY ROAD EAST OF KIPLING AVENUE

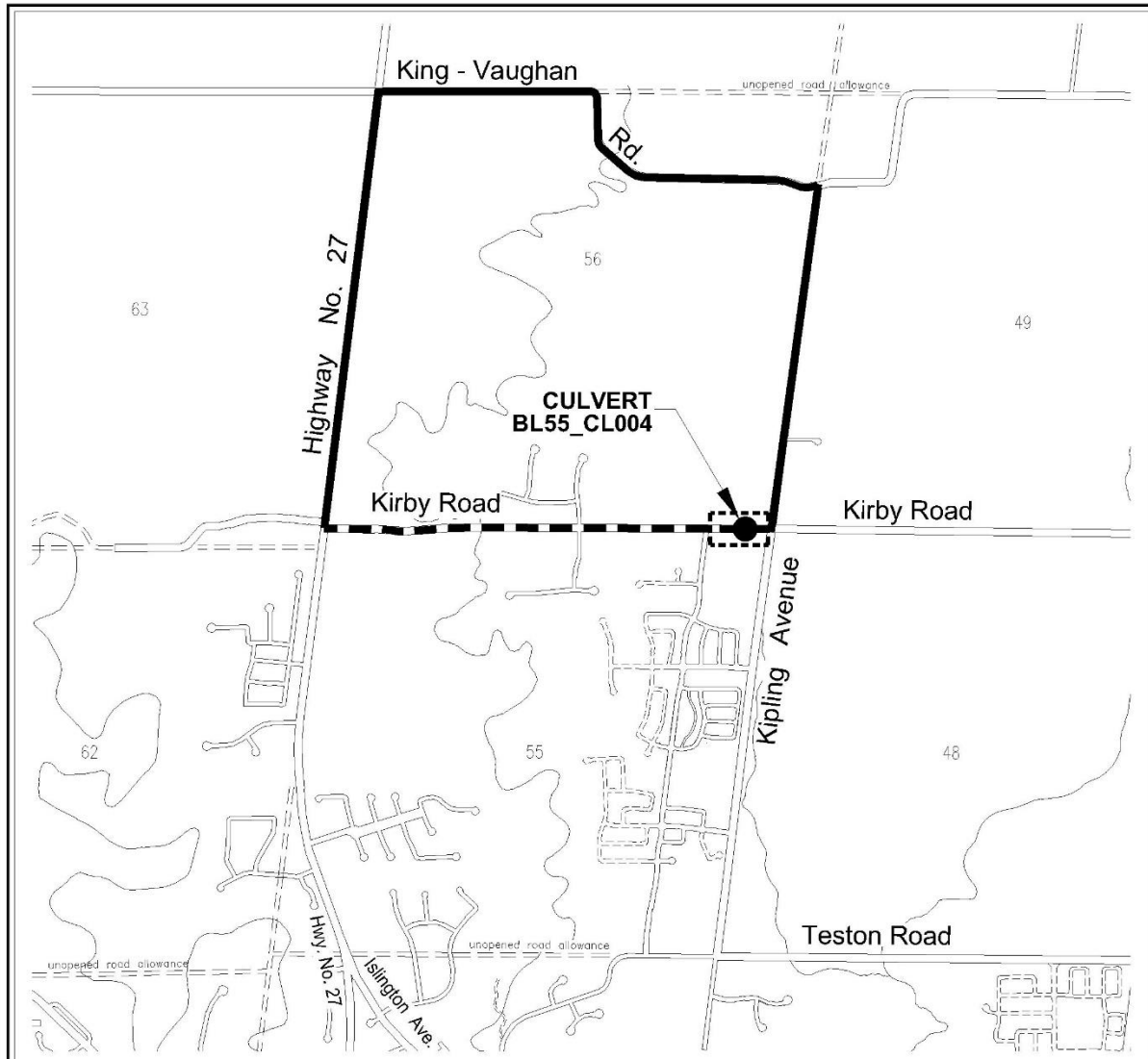
LEGEND

-  PROPOSED ROAD CLOSURE
-  PROPOSED CULVERT REPLACEMENT
-  PROPOSED DETOUR ROUTES
-  OPEN TO LOCAL TRAFFIC ONLY







NOT TO SCALE

ATTACHMENT No. 3



INTERIM TRAFFIC MANAGEMENT PLAN CULVERT BL55 - CL004 ON KIRBY ROAD WEST OF KIPLING AVENUE

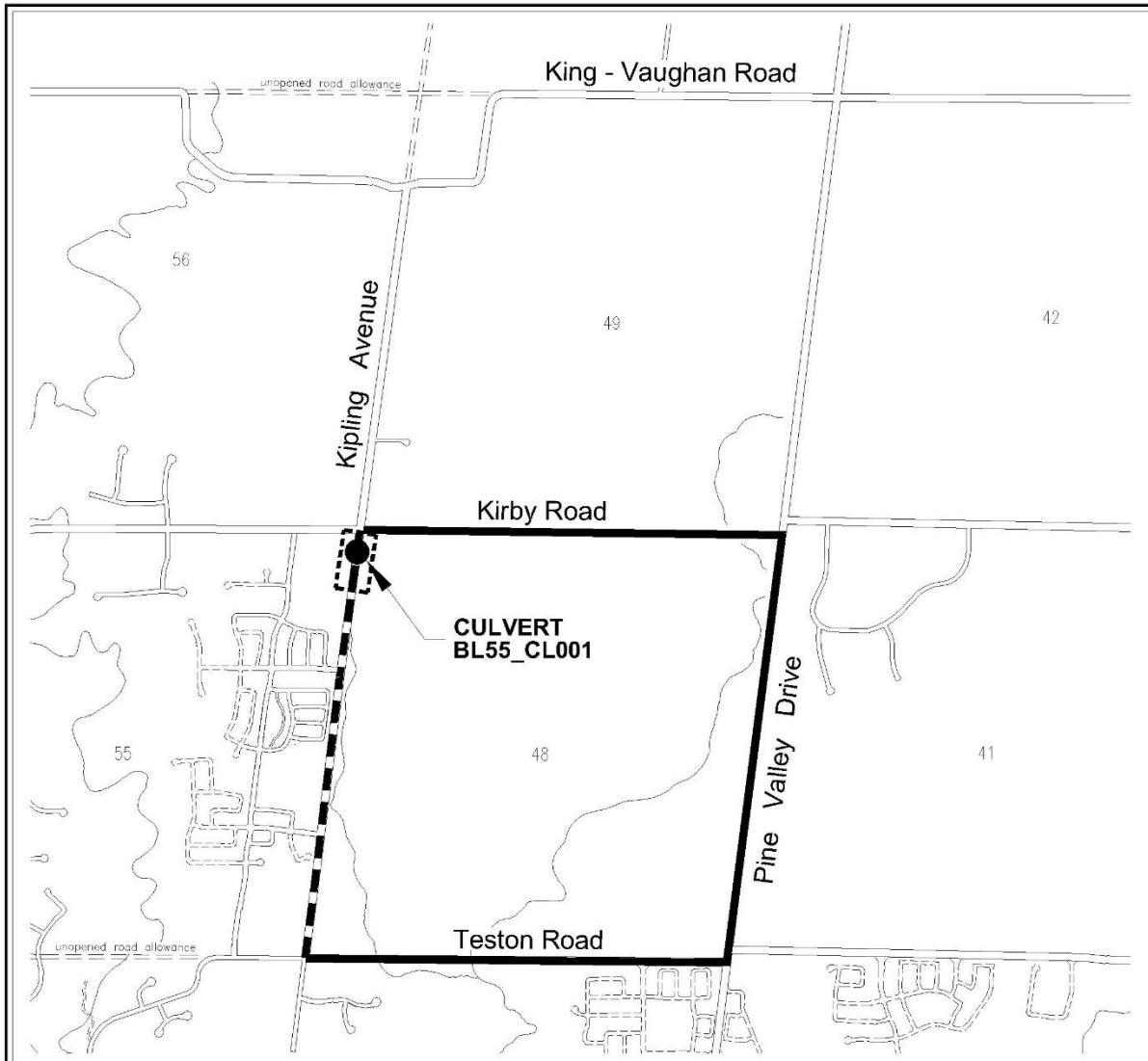
LEGEND

-  PROPOSED ROAD CLOSURE
-  PROPOSED CULVERT REPLACEMENT
-  PROPOSED DETOUR ROUTES
-  OPEN TO LOCAL TRAFFIC ONLY







NOT TO SCALE

ATTACHMENT No. 4



INTERIM TRAFFIC MANAGEMENT PLAN CULVERT BL55 - CL001 ON KIPLING AVENUE SOUTH OF KIRBY ROAD

LEGEND

-  PROPOSED ROAD CLOSURE
-  PROPOSED CULVERT REPLACEMENT
-  PROPOSED DETOUR ROUTES
-  OPEN TO LOCAL TRAFFIC ONLY



NOT TO SCALE

ATTACHMENT No. 5

