

COMMITTEE OF THE WHOLE – NOVEMBER 17, 2008

KING HIGH DRIVE REVIEW – ONE YEAR REPORT

Recommendation

The Commissioner of Engineering and Public Works recommends:

1. That this one-year report on the trial closure of King High Drive at Dufferin Street be received for information;
2. That City staff work with the Region of York to implement the protected permissive phase to the southbound left turn lane at the intersection of Dufferin and Centre Streets;
3. That City staff continue to work with Region of York staff to explore additional opportunities to modify the Centre Street/Dufferin Street intersection to increase rush hour turning capacity;
4. That a qualified, specialist consultant be retained by the City to provide a third party review of the traffic data and background information and recommend required measures to keep motorists on the major roadways of Dufferin and Centre Streets and make a recommendation as to whether or not the closure of King High Drive should remain;
5. That the consultant's review of options include, but not be limited to:
 - a. The implementation of turning prohibitions at Beverley Glen and Concord Drive
 - b. A right in right out configuration at King High Drive and Dufferin Street;
6. That Engineering Services staff report back no later than April 30, 2009 on the results of the consultant's review and the efforts with the Region of York to reconfigure the Dufferin / Centre Street intersection;
7. That the King High Drive closure remain in effect until the staff report of April 2009 is brought forward; and
8. That a copy of this report be forwarded to the Clerk's Department at the Regional Municipality of York.

Economic Impact

Retention of an outside consultant is expected to cost less than \$25,000. This cost can be offset through savings realized in the 2008 Operating Budget, should Council wish to move forward with this recommendation.

Communications Plan

There have been a number of previous public meetings and surveys regarding possible alternatives including partial closures, full closures and turn prohibitions for the King High Drive area. Staff have been in regular contact with area residents and the local Ratepayers Association and have informed the community of the timing of this report on the trial closure.

Engineering Services staff will contact the residents and the local Ratepayers Association regarding the decision in this matter from Council.

Purpose

To report on the results of the before and after traffic studies (6 months and 12 months) with the implementation of the temporary closure of King High Drive, and to recommend next steps.

Background - Analysis and Options

King High Drive is a local road between Dufferin Street and Vaughan Boulevard. The intersection of King High Drive and Dufferin Street is under the jurisdiction of the Region of York. The area is shown on Attachment No. 1.

At its meeting of May 22, 2007, Council approved a temporary closure of King High Drive near the east property limit of the commercial development for a trial period (one year) and requested an interim report to the Committee of the Whole six months after the closure on the impacts of the closure. The temporary road closure was implemented in August 2007. Break-away bollards were installed across King High Drive east of Dufferin Street near the commercial development. Notices were mailed out to the residents of King High Drive and Belfield Court notifying them of the approved temporary closure. The interim report was prepared for the May 5, 2008 Committee of the Whole meeting. Council received the information and also requested a cost estimate for a potential sidewalk on King High Drive.

Before Studies

Utilizing Automated Traffic Recorders (ATR's), Engineering Services staff collected the traffic volumes prior to temporary closure of King High Drive. The results of the studies are summarized in the following chart.

Location	Date	Volume	Volume	Total Volume
Beverly Glen Blvd. west of Fairfax Ct.	Oct. 2007	Eastbound 3063	Westbound 2355	5418
Concord Rd. near #20	Oct. 2007	Northbound 1015	Southbound 2010	3025
King High Dr. west of Belfield Ct.	Oct. 2007	Eastbound 1358	Westbound 560	1918
Vaughan Blvd. north of Centre St.	June 2007	Northbound 1077	Southbound 1143	2220

Beverly Glen Boulevard is designed as a feeder type roadway with a 23.0 metre right-of-way and 11.5 metres of pavement width. Typically, a feeder type roadway can accommodate traffic volumes not exceeding 8,000 vehicles per day. Concord Road and King High Drive are local type roadways with a 20.0 metre right-of-way and 8.5 metres of pavement width. Typically, a local type roadway would be expected to convey traffic volumes not exceeding 1,000 vehicles per day. (Source: Transportation Association of Canada – Geometric Design Guide for Canadian Roads.)

Engineering Services staff monitored the traffic operation and patterns within the Subdivision approximately six months and 12 months after the temporary closure was implemented.

After Studies (6 months and 12 months)

Traffic Volume Collection

NOTE: 12 Month Traffic Data in Bold

Utilizing Automated Traffic Recorders (ATR's), Engineering Services staff collected the traffic volumes after the installation of the temporary closure of King High Drive. The results of the studies are summarized in the following chart.

Location	Date	Volume	Volume	Total Volume
Beverley Glen Blvd. west of Fairfax Ct.	Apr. 2008 Sept. 2008	Eastbound 4090 Eastbound 3992	Westbound 2686 Westbound 2814	6776 6806
Concord Rd. near #20	Mar. 2008 Sept. 2008	Northbound 1773 Northbound 1326	Southbound 2121 Southbound 2187	3894 3513
King High Dr. east of Concord Rd.	Mar. 2008	Eastbound 350	Westbound 429	779
Vaughan Blvd. north of Centre St.	Mar. 2008 Sept. 2008	Northbound 885 Northbound 885	Southbound 786 Southbound 806	1671 1691

Staff collected the traffic volumes on Beverley Glen Boulevard west of New Westminster Drive utilizing ATR's to determine the amount of traffic at this location in September 2008. The result of the study is summarized below.

Location	Date	Volume	Volume	Total Volume
Beverley Glen Blvd. west of New Westminster Dr.	Sept. 2008	Eastbound 3599	Westbound 3316	6915

Infiltration Studies

Staff also conducted an infiltration study to determine the number of motorists travelling from Dufferin Street/Beverley Glen Boulevard to Centre Street via either Concord Road or Vaughan Boulevard. The studies were conducted on April 9, 2008 and September 3, 2008 and on both days the weather was clear and sunny.

AM Period – 7:00am to 9:00am

NOTE: 12 Month Traffic Data in Bold

From	To	Total Inbound Volume	Total Infiltrating Volume	Infiltration Percent
Dufferin St./Beverley Glen Blvd.	Centre St./Concord Rd	171 164	30 39	18% 24%
Dufferin St./Beverley Glen Blvd.	Centre St./Vaughan Blvd.	171 164	13 11	8% 7%

PM Period – 4:00pm to 6:00pm

NOTE: 12 Month Traffic Data in Bold

From	To	Total Inbound Volume	Total Infiltrating Volume	Infiltration Percent
Centre St./Concord Rd.	Dufferin St./Beverley Glen Blvd.	141 136	8 20	6% 15%
Centre St./Vaughan Blvd.	Dufferin St./Beverley Glen Blvd.	141 127	12 13	7% 10%

Staff also collected the possible infiltration movements between Dufferin Street and New Westminster Drive using Beverley Glen Boulevard in September 2008. The results of the study are summarized below.

From	To	Total Inbound Volume	Total Infiltrating Volume	Infiltration Percent
Dufferin Street AM Period – 7 to 9	New Westminster Drive	164	16	10%
New Westminster Drive PM Period – 4 to 6	Dufferin Street	388	25	6%

The earlier infiltration studies in 2002, 2003 and 2004 indicate that the amount of 'cut-through' traffic was low, at less than 50 vehicles. The studies at these times were between Dufferin Street/King High Drive and Centre Street/Concord Road.

Intersection Turning Movement Studies

An intersection turning movement count was conducted at the intersection of Beverley Glen Boulevard and Concord Road on April 17, 2008. A second study was conducted on September 10, 2008 to compare the turning traffic volume at the intersection. The study time periods were 7:00am to 9:00am and 3:00pm to 6:00pm. The weather on the day of the study was clear and sunny. The study was completed to determine if possible turn prohibitions are required.

The results of the study is summarized in following chart.

NOTE: 12 Month Traffic Data in Bold

Time Period	Total Eastbound Volume	# of Right Turns	Percent of Turns
7:00am to 9:00am	439 316	193 143	44% 45%
AM Peak 8:00am to 9:00am	316 224	141 94	45% 42%
3:00pm to 6:00pm	1013 1041	334 361	33% 35%
PM Peak 5:00pm to 6:00pm	457 485	153 172	33% 35%
5 Hour Total	1206 1377	527 504	44% 37%

Time Period	Total Westbound Volume	# of Left Turns	Percent of Turns
7:00am to 9:00am	679 549	202 162	30% 30%
AM Peak 8:00am to 9:00am	437 367	135 112	31% 31%
3:00pm to 6:00pm	551 619	169 230	31% 37%
PM Peak 5:00pm to 6:00pm	187 206	50 66	27% 32%
5 Hour Total	1230 1194	371 392	30% 33%

Summary

- the 12 month traffic volume has remained relatively consistent with the 6 month traffic volume on Beverley Glen Blvd., Concord Rd. and Vaughan Blvd.
- the traffic volume on Beverley Glen Blvd. is within capacity of 8,000 vehicles per day.
- the traffic volume on Concord Rd. is approximately 3½ times the capacity of a local road.
- the 12 month infiltration volume through the neighbourhood remains low.
- the traffic volume collected on Beverley Glen Blvd. west of New Westminster Dr. compares to the traffic volume on Beverley Glen Blvd. east of Dufferin St. This would indicate minimal neighbourhood cut-through between Dufferin St. and New Westminster Dr.
- the infiltration volume on Beverley Glen Blvd. between Dufferin St. and New Westminster Dr. is very low. This would indicate that the traffic volume exiting the subdivision via New Westminster Dr. is local residential volume.
- although the percent of right and left turns are relatively high at the intersection of Beverley Glen Blvd. and Concord Rd., the infiltrating volume is very low, the majority of vehicles turning are travelling within the neighbourhood to Forest Lane Dr., King High Dr., Vaughan Blvd., Lawrie Rd., Loudon Cres., Belfield Ct. and Concord Rd.
- a turn prohibition at the intersection of Beverley Glen Blvd. and Concord Rd. will impact all the residents in the neighbourhood.
- turning prohibitions at either or both of the intersections of Dufferin St. at Beverley Glen Blvd. and at King High Dr. would require Region of York approval.
- any turn prohibition at Dufferin St. will impact all the residents in the neighbourhood.

Meetings with Residents/Ratepayers Association

Engineering Services staff met with representatives of the Ratepayers Association to discuss the King High Drive closure. In their opinion, the closure should remain. They argue that, even though the traffic volume on Beverley Glen Boulevard has increased, it is still within the theoretical roadway capacity of 8,000 vehicles per day.

Two meetings were also held with residents along Beverley Glen Boulevard that are requesting the closure of King High Drive to be removed. These residents have stated that the closure has shifted the traffic volumes to other roadways and they are concerned that the increased volumes are unsafe for pedestrians. One resident expressed a desire to re-open King High Drive and reinstate a southbound left turn prohibition on Dufferin Street at King High Drive.

A meeting was also held with residents of King High Drive that are requesting the closure to remain. These residents were asked if they would support a change in the intersection of King High Drive at Dufferin Street to operate as a right-in/right-out only movement by means of constructing a centre median on Dufferin Street or a roadway median on King High Drive. These residents were not in favour of this alternative.

It is apparent that residents in the immediate area are deeply divided as to whether or not the closure should remain. Staff believe that there would be a benefit to having the data collected so far reviewed by an independent third party expert to assist with analysis of the current situation and recommendations. It is therefore recommended that staff obtain a quotation from three qualified specialist firms to undertake this review. The timeline to retain a consultant, complete a review of the information and provide the City with a recommendation is April 2009.

Dufferin Street and Centre Street

Councillor Sandra Yeung Racco and the Commissioner of Engineering and Public Works met on October 20, 2008 with staff of the Provincial Ministry of Transportation to discuss potential modifications to the Dufferin/Centre Street intersection to permit increased southbound left turning capacity. At present, this intersection and the Centre Street right-of-way from Dufferin to Highway 7 are provincially owned and any proposed modifications require a permit from MTO. MTO has denied the Region and City's previous requests to introduce a dual southbound left turn lane, citing MTO policy that there must be three receiving lanes of traffic.

During the course of the meeting, MTO staff advised that they would be amenable to transferring ownership of the intersection and the Centre Street right-of-way to the Region of York as part of the Highway 7 transfer. This would mean that any intersection modifications would be under the direct control of the Region and no MTO permit would be required. MTO staff asked that the Region submit a request to MTO to expedite the transfer of Centre Street and the Dufferin /Centre intersection. City staff have written the Region in this regard and a response should be forthcoming.

In response to the City's earlier request, MTO has recently written to advise that they will permit a protected permissive phase to the southbound left turn signal at Dufferin and Centre Streets. This allows cars to turn left after the advanced green phase when the light northbound and southbound is green. MTO's analysis indicates that this will permit an additional 2 to 3 cars to turn left during a cycle. (See Attachment No. 2). While this is not a complete solution to the issue, it does provide some relief and it is recommended that the City implement this change with the Region of York.

It is further recommended that City staff continue to pursue additional modifications of the Dufferin/Centre Street intersection with the Region once ownership is transferred. Staff believe that modification of the intersection to permit greater rush hour turning capacity will assist with limiting the amount of traffic infiltrating through the neighbourhood. Most of the residents that staff talked with agreed.

Potential Sidewalk on King High Drive

At the Council meeting of May 12, 2008, staff were directed to include a cost estimate for a sidewalk on the north side of King High Drive between Concord Road and Dufferin Street. It was suggested that, if King High Drive were to be re-opened, it may would be appropriate to construct a sidewalk to improve pedestrian safety. Staff estimate the cost of the sidewalk at \$225,000. Potential funding source would be Taxation.

Relationship to Vaughan Vision 2020

This traffic study is consistent with Vaughan Vision 2020 as to ensure enhanced safety standards are incorporated in community designs.

This report is consistent with the priorities previously set by Council.

Regional Implications

The Region of York has been part of the process on the various alternatives which have been documented in this report and others. The various alternatives affect traffic movements at the intersection of King High Drive and Dufferin Street.

During the first 6 months of the trial closure, the Region of York has not reported any adverse impact on their roads resulting from the closure.

Conclusion

The interim and one-year reports indicate what traffic impacts have occurred within the community. Between the two reports the traffic volumes and infiltration for the most part have remained consistent.

The study results indicate that, with the closure of King High Drive, traffic volumes on Beverley Glen Blvd. and Concord Road have increased significantly, and volumes on King High Drive and Vaughan Blvd. have decreased. The traffic infiltration study shows that there are minimal 'cut-through' movements within the community.

Should Council decide at some future time to construct a sidewalk on the north side of King High Drive, the cost would be approximately \$225,000.

It is recommended that City staff implement, with York Region staff, a protected permissive phase to the southbound left turn signal at Dufferin and Centre Streets, and that staff continue to work with Region of York staff to further modify the Centre Street/Dufferin Street intersection to increase rush hour turning capacity.

It is further recommended that a qualified, specialist consultant be retained by the City to provide a third party review of the traffic data and background information and recommend required measures to keep motorists on the major roadways of Dufferin and Centre Streets and make a recommendation as to whether or not the closure of King High Drive should remain. The consultant's review of options should include, but not be limited to:

- the implementation of turning prohibitions at Beverley Glen and Concord Drive
- a right in right out configuration at King High Drive and Dufferin Street

Engineering Services staff should report back no later than April 30, 2009 on the results of the consultant's review and the efforts with the Region of York to reconfigure the Dufferin / Centre Street intersection. In the interim, staff recommend that the King High Drive closure remain in effect.

Attachments

1. Location Map
2. MTO Traffic Operation – Dufferin and Centre Streets

Report prepared by:

Mike Dokman, Supervisor, Traffic Engineering, ext. 3118

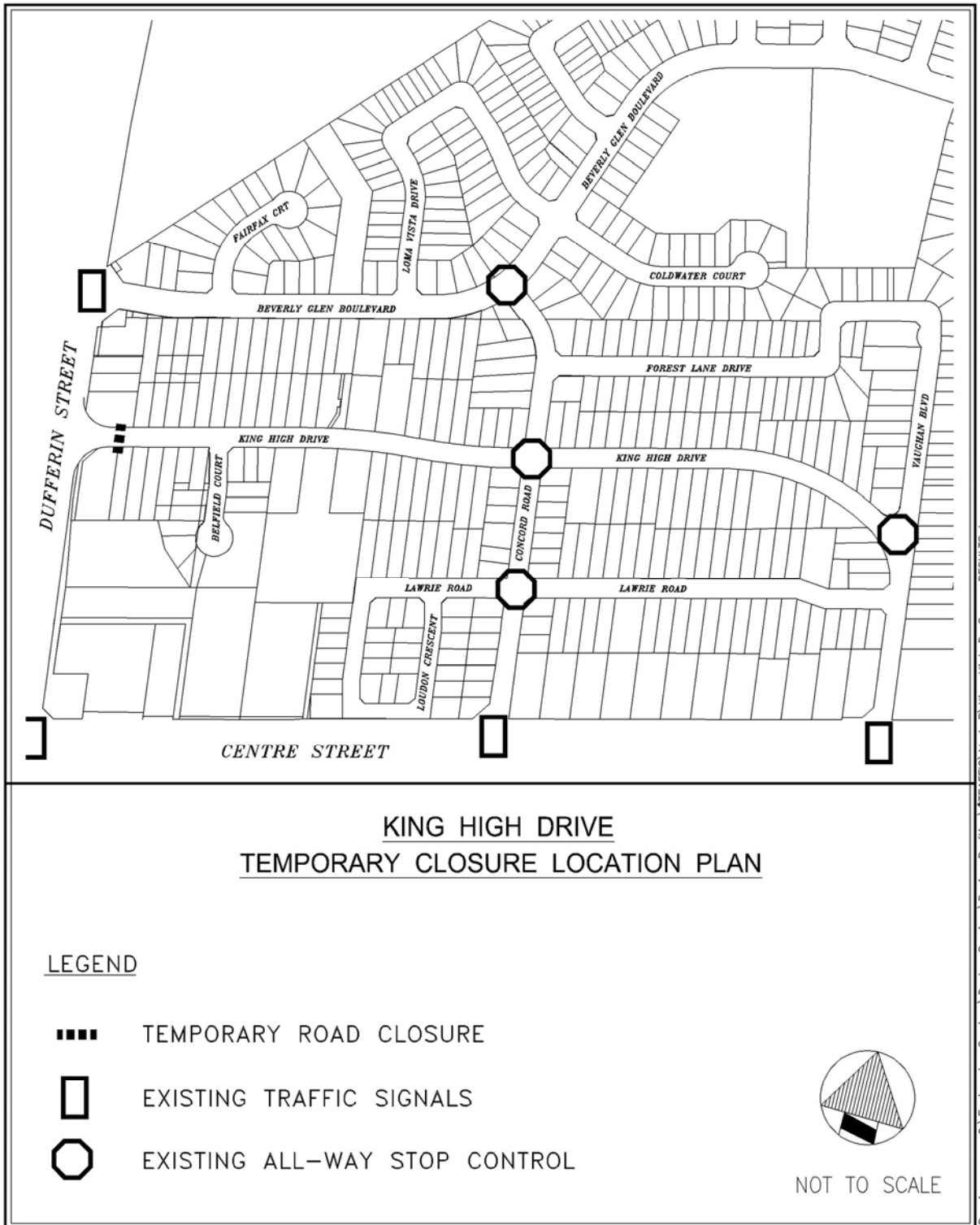
Respectfully submitted,

Bill Robinson, P. Eng.,
Commissioner of Engineering and Public Works

Mike Dokman, C.E.T.
Supervisor, Traffic Engineering

MD:mc

ATTACHMENT No. 1



ATTACHMENT NO. 2

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November 3, 2008

Mr. Mike Dokman
City of Vaughan
2141 Major Mackenzie Drive
Vaughan, Ontario L6A 1T1

Re: Traffic Operation at the intersection of Dufferin and Centre Streets

Dear Mr. Dokman:

This is further to your letter dated August 22, 2008 regarding the implementation of a protected permissive phase for the southbound left turn lane at the intersection of Dufferin Street and Centre Street.

As stated in our previous letter to the City of Vaughan, we have performed analysis of several other options including double left turn lane in the southbound direction, double left turn lane in the southbound with a single left turn lane in the northbound direction, double left turn lane in both north and southbound direction with split phase. As previously stated the analysis shows there is little or no improvement in the operation of the intersection.

The current request of providing protected permissive phase to the southbound left turn lane was analysed, and based on the results, there is a slight improvement in the operation of the southbound left turn movement. Reverting to this phase could result in additional 2 to 3 vehicles clearing the phase for the southbound left turns. We are therefore willing to allow for this change. However, this decision could be reversed if any safety concerns arise in the future. For this change to be implemented there is a need for a new PHM 125 drawing, a new signal timing and new signal head.

This improvement is considered minor and is not part of the ministry's 5 year program. Given the economic situation and ministry priorities at this time the City of Vaughan or York Region will be responsible for the cost of these changes if they wish to pursue them.

During our field review we noticed construction activities on Dufferin Street. Please note that the ministry needs to be informed if any changes are being considered or undertaken at this intersection as this could affect the operation of the intersection.

Upon receiving and reviewing the PHM 125 drawing and signal timing the Ministry will be ready to approve the implementation of this change.

Yours sincerely,

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