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AURORA ROAD
OPERATIONAL SAFETY REVIEW
KENNEDY ROAD TO HIGHWAY 48
TOWN OF WHITCHURCH-STOUFFVILLE

The Transportation and Works Committee recommends the adoption of the recommendations contained in the following report, March 31, 2004, from the Commissioner of Transportation and Works:

1. RECOMMENDATIONS

It is recommended that:

1. Regional staff install oversized 60 km/h speed limit signs on Aurora Road (Y.R.15) west of Highway 48 and west of McCowan Road (Y.R.67).
2. Regional staff install an oversized “Stop” sign on the southbound approach of McCowan Road (Y.R.67) at the intersection with Aurora Road (Y.R.15).
3. Regional staff install “Horse Crossing” warning signs on the east and west approaches to the intersection of Aurora Road (Y.R.15) and McCowan Road (Y.R.67).
4. Regional staff install an overhead flashing beacon at the intersection of Aurora Road (Y.R.15) and McCowan Road (Y.R.67).
5. Regional staff implement 60 km/h speed limit pavement markings on the road surface at regular spaced intervals in the 60 km/h speed limit zone on a trial basis for a period of one year with a future report on the success of the pavement markings.
6. The Regional Clerk forwards a copy of this report to the Clerk of the Town of Whitchurch-Stouffville and to the Chief of York Regional Police.

2. PURPOSE

This report presents the results of an operational safety review of the section of Aurora Road between Warden Avenue and Highway 48, in the Town of Whitchurch-Stouffville. A location plan is provided as *Attachment 1*.

3. BACKGROUND

A petition was recently received from the residents who live on Aurora Road within the of Hamlet of Ballantrae. This petition calls for stricter enforcement of the truck restriction on Aurora Road and for additional “Truck Restriction” signs to be erected. The signs

referred to in the petition are “Alternate Truck Route” signs requesting trucks to use Davis Drive and Bloomington Road, and are not regulatory signs prohibiting trucks from using Aurora Road.

On January 30, 2004, York Regional staff met with two representatives from the Hamlet of Ballantrae. They raised the following issues that were a cause of concern to the local community:

- The high volume of truck traffic on Aurora Road.
- The rate of speed of vehicles travelling on Aurora Road.
- The horizontal alignment at the intersection of Aurora Road with McCowan Road.
- Horse riders crossing Aurora Road within the horizontal curve at the Aurora Road and McCowan Road intersection.
- The poor condition of the railway tracks on Aurora Road west of Warden Avenue.
- A lack of driver awareness of the 60 km/h speed limit.

In response to these issues Regional staff undertook to review and investigate the concerns and recommend mitigative measures.

4. ANALYSIS AND OPTIONS

4.1 Collision Analysis

Table 1 and Table 2 illustrate the collision statistics for Aurora Road between McCowan Road and Highway 48, and Aurora Road between Kennedy Road and McCowan Road, respectively.

Table 1
Aurora Road: McCowan Road to Highway 48 – Collision Statistics

Collision Type	1999	2000	2001	2002	2003	Total
Fatal	0	0	0	0	1	1
Injury	0	0	0	1	0	1
Property Damage Only	0	2	1	2	5	10
TOTAL	0	2	1	3	6	12

Of the twelve collisions that occurred on Aurora Road between McCowan Road and Highway 48 from 1999 to 2003, only one collision involved a heavy truck.

Table 2
Aurora Road: Kennedy Road to McCowan Road – Collision Statistics

Collision Type	1999	2000	2001	2002	2003	Total
Fatal	0	0	0	0	0	0
Injury	0	1	0	0	1	2
Property Damage Only	1	3	3	2	2	11
TOTAL	1	4	3	2	3	13

Of the thirteen collisions that occurred on Aurora Road between Kennedy Road and McCowan Road from 1999 to 2003, only one collision involved a heavy truck, and four collisions involved a deer.

When compared to other Regional roads in York Region, the safety performance of these sections of Aurora Road have been found to be better than the average safety performance of other Regional roads.

4.2 Truck Volume Analysis

Table 3 and Table 4 illustrate vehicle and truck volume statistics over a twenty-four hour period for Aurora Road between Woodbine Avenue and Highway 48 and Davis Drive and Bloomington Road between Woodbine Avenue and Highway 48 respectively.

Table 3
Aurora Road: Traffic Volume Statistics

Road Segment	Volume (veh/day)	Truck Volume (veh/day)	% Trucks
Woodbine Avenue to Warden Avenue	8,831	625	7.1
Warden Avenue to Kennedy Road	8,800	532	6.0
Kennedy Road to McCowan Road	7,343	365	5.0
McCowan Road to Highway 48	5,589	322	5.8

Table 4
Davis Drive and Bloomington Road: Traffic Volume Statistics

Road Segment	Volume (veh/day)	Truck Volume (veh/day)	% Trucks
Davis Drive			
Woodbine Avenue to Warden Avenue	16,505	1,173	7.1
Warden Avenue to Kennedy Road	13,656	977	7.2
Kennedy Road to McCowan Road	13,359	949	7.1
McCowan Road to Highway 48	13,548	879	6.5

Bloomington Road			
Woodbine Avenue to Warden Avenue	10,458	1,501	14.4
Warden Avenue to Kennedy Road	12,882	965	7.5
Kennedy Road to McCowan Road	12,851	1,167	9.1
McCowan Road to Highway 48	10,745	1,497	13.9

When the statistics in Table 3 are compared to similar statistics for Bloomington Road and Davis Drive, it is evident that Aurora Road carries substantially less truck traffic than Davis Drive and Bloomington Road (see Table 4), indicating that majority of heavy trucks are following the alternate routes specified on the exiting alternative truck route signing.

An assessment of historical traffic volumes indicated that traffic on Aurora Road west of Highway 48 has been growing by an average of 4 – 5 % per year over the last five years.

4.3 Speed Survey Analysis

One of the requests received from the community was to lower the speed limit between Kennedy Road and McCowan Road from 80 km/h to 60 km/h.

Table 5 illustrates the results of speed studies that have been undertaken on Aurora Road between Kennedy Road and Highway 48 since 2001.

Table 5
Aurora Road: Travel Speed Statistics

Roadway Segment	Date	Speed limit	85th Percentile	Compliance
McCowan Road to Highway 48	July 10, 2001	60 km/h	83 km/h	7.5 %
	November 25, 2002	60 km/h	85 km/h	11.8 %
	January 15, 2003	60 km/h	88 km/h	3.8 %
	February 12, 2003	60 km/h	88 km/h	8.9 %
Kennedy Road to McCowan Road	December 21, 2001	80 km/h	100 km/h	12.4 %
	November 13, 2002	80 km/h	94 km/h	49 %

The 85th percentile speed is the speed which is exceeded by 15% of all vehicles.

Although the 85th percentile speeds exceed the speed limits and the compliance rates are low, it is typical of what is experienced on arterial roads. York Regional Police have undertaken enforcement activities in an effort to increase the awareness of the posted speed limits in this area.

There is low driveway density and a low number of pedestrians walking along or crossing Aurora Road. These characteristics are conducive to the existing speed limits. Based upon this information, Regional staff does not recommend a reduction in the posted speed limit at this time. If the proposed new “Speed Limit Policy” as presented at the Transportation and Works Committee meeting of February 4, 2004, is adopted by Regional Council, staff will apply the policy to this section of Aurora Road. If a speed limit reduction is warranted, based upon the warrants contained within the policy, staff will submit a follow-up report to Transportation and Works Committee. The preliminary results of applying the proposed “Speed Limit Policy” suggest the current posted speed would be recommended to remain in effect.

4.4 Geometric Design Review

Regional staff reviewed the horizontal alignment of Aurora Road in the vicinity of McCowan Road. It was concluded that the horizontal alignment falls within geometric design standards. In addition “chevron” signs and raised pavement markers have been installed to warn drivers of the horizontal curve. No other safety concerns relating to the horizontal curve were observed.

4.5 Countermeasure Identification

The primary objective to improve safety on Aurora Road should be to reduce travel speeds. Reduced travel speeds will reduce the severity of collisions and will afford drivers more time to detect hazardous situations and to take appropriate evasive action.

One strategy to reduce travel speeds is to make drivers more aware of the speed limit. This may be achieved by increasing the size of existing speed limit signs to make them more visible, and to supplement these signs with speed limit pavement markings. Since these pavement markings are a new concept in York Region they are proposed to be implemented on a trial basis for a period of one year after which the success of the pavement markings in reducing speeds will be evaluated by Regional staff. A Speed Radar board program is also an effective strategy to increase speed limit awareness, and to support speed law enforcement activities by York Regional Police.

Another strategy to reduce travel speeds is to make drivers more aware of potential safety hazards along Aurora Road. To this end additional warning signs are proposed to be erected in the vicinity of the intersection with McCowan Road to warn drivers against horse riders crossing at this location. Additionally, an overhead flashing beacon at this intersection would caution drivers to reduce speeds when approaching the McCowan Road intersection and to be on the look out for vehicles entering Aurora Road.

The Road Watch program will afford the local community the opportunity to become directly involved in addressing the speeding issue on Aurora Road. They will be able to identify aggressive drivers and provide this information to the police for further action. Regional staff will work with staff from the Town of Whitchurch-Stouffville to have the signs erected.

Table 6 summarizes the proposed short term, medium term and long term road safety improvements to address the concerns raised by the community and the results of the various studies and field observations by staff.

Table 6
Aurora Road: Proposed Road Safety Improvements

Time Scale	Proposed Improvement
Short term (1 month)	• Install oversized 60 km/h speed limit signs west of Highway 48 and west of McCowan Road. • Install an oversized “Stop” sign on the southbound approach of McCowan Road. • Install “Horse Crossing” signs on the east and west approaches to the intersection with McCowan Road. • Request CN to improve the railway crossing
Medium term (2-3 months)	• Install an overhead flashing beacon at the intersection with McCowan Road. • Implement additional 60 km/h speed limit pavement markings on the road surface at regular spaced intervals in the 60 km/h zone. • Schedule and implement a program for the Speed Radar board. • Engage the community to become involved in the Road Watch program and install “Road Watch” signs.
Long term (3-6 months)	• Possible improvements to the railway crossing

5. FINANCIAL IMPLICATIONS

The costs associated with the implementation of the short and medium term improvements are available within the 2004 Roads Transportation Program Budget. The cost of manufacturing “Road Watch” signs will be the responsibility of the Town of Whitchurch-Stouffville. Any improvements to the CN railway crossing will be the shared responsibility of CN and The Regional Municipality of York.

6. LOCAL MUNICIPAL IMPACT

The overall safety of the Regional roadway is of concern to the Region and the local municipality. The cost of manufacturing the “Road Watch” signs will be the responsibility of the Town of Whitchurch-Stouffville.

7. CONCLUSION

In response to a petition and concerns raised by residents of the Hamlet of Ballantrae, the following safety improvement measures are recommended by Regional staff to improve safety and traffic operations on Aurora Road between Kennedy Road and Highway 48:

1. The installation of oversized 60 km/h speed limit signs on Aurora Road west of Highway 48 and west of McCowan Road.
2. The installation of an oversized “Stop” sign on the southbound approach of McCowan Road at the intersection with Aurora Road.
3. The installation of “Horse Crossing” signs (WC22) on the east and west approaches to the intersection of Aurora Road and McCowan Road.
4. The installation of an overhead flashing beacon at the intersection of Aurora Road and McCowan Road.
5. The implementation of 60 km/h speed limit pavement markings on the road surface at regular spaced intervals in the 60 km/h speed limit zone.
6. The Regional Clerk forwards a copy of this report to the Clerk of the Town of Whitchurch Stouffville and to the Chief of York Regional Police.

The Senior Management Group has reviewed this report.

(A copy of the attachment referred to in the foregoing has been forwarded to each Member of Council with the April 7, 2004 Transportation and Works Committee agenda and a copy thereof is on file in the Office of the Regional Clerk.)