



# EDMONTON POLICE SERVICE



## REPORT TO THE EDMONTON POLICE COMMISSION

**DATE:** 2011 April 6

**SUBJECT:** Pilot Project on Speed Reduction in Residential Roads

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### RECOMMENDATION(S):

That this report be received for information.

### INTRODUCTION:

The City of Edmonton Office of Traffic Safety undertook a speed reduction pilot project from May to October 2010. Since the full report is 300 pages, a hard copy will not be attached to this memorandum but can be accessed on the City of Edmonton website. A condensed report summary written by Mr. Gerry Shimko of the Office of Traffic Safety is also available on the City of Edmonton website and is reproduced for this report.

### **Report Summary**

The City of Edmonton's Office of Traffic Safety undertook a speed reduction pilot project (from 50 km/h to 40 km/h) from May 2010 to the end of October 2010, in six Edmonton communities. This report provides a summary of findings from the implementation and evaluation of the pilot project.

### **Report**

In collaboration with our partners at the University of Alberta's Civil Engineering Faculty, a scientific methodology was developed that identified and prioritized communities for the pilot project. Out of this list, six communities were identified who agreed to participate in the pilot project:

- Beverly Heights/Rundle Heights
- King Edward Park
- Ottewell
- Woodcroft
- Westridge/Oleskiw
- Twin Brooks

## **Bylaw**

Speed Zone Bylaw 15410, Amendment No. 52 (Amendment to Bylaw 6894, the Speed Zone Bylaw) which reduced the speed limits in the pilot communities from 50 km/h to 40 km/h, was passed by Council on April 14, 2010, and became effective May 1, 2010.

## **Surveys**

Pre- and post-community perception surveys were conducted in all six communities.

## **Data Collection**

Prior to and during the speed reduction pilot study, speed data was collected from the pilot, and adjacent communities, as well as control communities that were not close to the pilot communities. In addition, three years of pre-study collision data was obtained, analyzed and compared with the collision data collected during the study period.

## **Community Perception Survey**

Surveys were undertaken prior to May 2010, and repeated at the conclusion of the six months. The result of the community perception survey by the Consultant, indicates the majority of respondents were aware of their community's involvement in the pilot project. More so, the awareness rate was highest for residents in Ottewell and Westridge/Wolf Willow. A total of 48 percent of the respondents reported the speeds were lower after the pilot project ended, while 45 percent felt it was about the same. Moreover, 48 percent of respondents believed the pilot project would be highly effective in lowering residential speeds; in particular, 64 percent of Ottewell residents felt this. Finally, 70 percent of respondents indicated the importance of community involvement and support for the success of the pilot project in improving traffic safety in their community.

## **Traffic and Speed Analysis**

The results of the traffic and speed analysis indicated that speeds were reduced after the implementation of the new residential speed limit of 40km/h in the pilot project communities. This decrease was magnified by the observed increase in speeds of the control communities over the duration of the pilot project. This implies that even though there was a general tendency for drivers to exceed the speed limit during the "After" period, the pilot communities were still exhibiting a reduction in speeds. Moreover, the speeds were consistently lower regardless of temporal factors like time of day and day of week.

Speeds were also found to vary with community development and the type of roadway network. Higher operating speeds were observed in new (1970s/80s) communities, followed by grid-based communities and old (1950s/60s) communities. There were reductions in operating speed in all communities, regardless of network type; the largest

reduction in operating speed was observed in new communities, (11 percent reduction), compared to a six percent reduction in old communities and a four percent reduction in grid-based communities. However, new communities still had the highest recorded speeds in the "After" period when compared to the old and grid-based community types. Again, the results show the operating speed decreased consistently (with varying rates) in all of the pilot community types regardless of time of day or day of week.

The analysis of the proportion of drivers complying with the posted speed limit showed drivers in pilot communities during the "After" period were much less likely to comply to the lower posted speed limit than drivers in other communities or during the "Before" period. In the pilot communities, 65 percent of drivers exceeded the 40 km/h speed limit compared to 39 percent exceeding the 50 km/h limit before the study. However, the distribution of driver speeds decreased by approximately 4 km/h compared to the control communities, indicating that drivers were slower overall in pilot communities. This result is consistent with published studies where the posted speed limit was changed without concurrent changes to roadway geometry, such as new markings, land use changes, or traffic calming techniques.

Moreover, the percent compliance was found to be highly correlated with the speed allowance or tolerance level. The percent compliance of drivers traveling 15 km/h over the un-posted 50 km/h speed limit in the control communities was 92.9 percent (pre-surveys) and 91 percent (during 2010). The percent compliance of drivers travelling 15 km/h over the posted 40 km/h speed limit in the pilot communities was 93.1 percent (pre-surveys) and 84.3 percent (during 2010). The percent compliance was also found to vary with level of community development and type of roadway network. The degree of compliance was highest for old communities and lowest for new communities.

A four percent reduction in the average number of vehicles was observed after the implementation of the new residential speed limit of 40 km/h in the pilot project communities. Once again, the reductions were found to vary with the level of community development and the type of roadway network. Generally, the number of recorded vehicles decreased from the "Before" to the "After" phase for all community types, with the largest decrease in new (1970s/80s) and grid-based communities and a smaller decrease in the old communities.

The proportion of tailgating vehicles was found to be very small. The analysis revealed drivers in pilot communities during the "After" period were slightly less likely to tailgate than the drivers in other communities or during the "Before" period. The results indicated no statistical differences in the proportion of tailgating vehicles across different community types (i.e., grid, new, old) from the "Before" to the "After" phase.

### **Collision Analysis**

The results of the collision analysis showed the pilot project had an impact on the frequency and severity of crashes. The results revealed that reducing the posted speed from 50 km/h to 40 km/h in the six pilot communities was more successful in reducing

severe (i.e., injury and fatal) collisions than Property Damage Only collisions. This finding seems to be consistent with other research which indicates general reduction in driving speed may reduce the number of deaths and serious injuries; yet, the number of slight injury or damage-only collisions may not decrease to the same extent, or may even increase. Severe collisions were reduced by 25 percent, if the collision from all six communities were included. Alternatively, severe collisions were reduced by 59 percent, if the Westridge/Wolf Willow results were excluded. An increase in collisions was noted in the West Ridge/Wolf Willow communities; however, at this time the increase cannot be explained and as such may be included in future research studies.

**COMMENTS / DISCUSSION:**

It is the recommendation of Mr. Brice Stephenson from the Transportation Department in his report to the Transportation and Public Works Committee "that the existing communities with 40 km/hr speed limits remain in effect until support for maintaining or removing the reduced speed limits is confirmed through public and community league surveys, and that Administration prepare any necessary Speed Bylaw amendments resulting from this process for consideration by City Council prior to September 2011."

It appears that the next step as to whether the new speed limit will be put into effect city wide will be through public consultation and then consideration through City Council.

**CONCLUSION:**

Submitted for information.

Written by:

Acting Superintendent B. Lobay

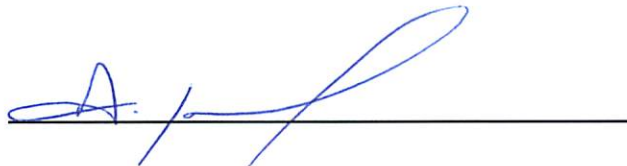


Reviewed and Approved By:

Acting Deputy Chief B. Doucette



A/ Chief of Police:



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