Knudson Drive Area Traffic Management Study

LOCATION
Knudson Drive between Kanata Avenue and Campeau Drive (See Figure 1)

PURPOSE
The purpose of the Knudson Drive Area Traffic Management (ATM) study is to minimize the negative impacts of traffic on neighbourhood streets.

BACKGROUND
In February 2012, Knudson Drive residents requested an Area Traffic Management study for Knudson Drive. The raised concerns were traffic volumes, speeding and pedestrian safety. In June of 2013, the City initiated the Knudson Drive Area Traffic Management study (hereinafter, Knudson Drive ATM study). The main focus of the study is in addressing speed and driver behaviour issues.

The Knudson Drive ATM study was undertaken in two phases: with the first phase focusing on issue identification; and the second on developing solutions.

DISCUSSION
In Phase 1 of the Knudson Drive ATM study, a number of mechanisms were used to scope the issues and concerns, including: a Public Advisory Committee meeting; a Public Open House; Ward Councillor meetings; and a review of the City's traffic data and records.

The following traffic issues and concerns were identified in the Phase 1:

- High traffic volumes and cut through traffic
- Speeding and inappropriate driver behaviour
- Poor stop compliance at multi-way stop signs
- Limited visibility at a curve and crossing
- Sidewalks in poor condition

Also the following potential solutions were proposed by public:

- Speed humps
- Flexible Signs on the centreline of the road
- Multi-way stop control
- Improved signage and painted or raised crosswalk at school crossing
- Speed display boards
- Markings to narrow the road
- On-street parking
• Speed enforcement

Staff confirmed the following issues:

• Excessive vehicular speeds along Knudson Drive, particularly between Langford Crescent and Shaughnessy Crescent W., and between Sherk Crescent S. and Morenz Terrace.
• Vehicular speeds over posted speed limit at the school crossing at Nelford Court.

In March 2014, as part of Phase 2, a Public Advisory Committee meeting and an Open House were held for the Knudson Drive ATM study. Two alternative plans were presented and a review of the public comments received was undertaken. The first alternative plan recommendations included eleven sets of speed cushions to reduce vehicular traffic speed. Speed cushions are traffic calming devices composed of several small speed humps installed across the width of the road with spaces between them. The spaces between the speed cushions are intended to allow emergency services and transit vehicles to pass through relatively unimpeded while the narrower track width of passenger cars forces them to go over (or at least straddle) the speed cushions. Speed cushions were recommended to minimize impacts on emergency vehicle response times and transit vehicles as compared to speed humps or speed tables while still reducing vehicular traffic speeds. The second alternative plan recommendations include six sets of speed cushions, four mid-block narrowings, eight intersection narrowings and one raised crosswalk. Three additional pedestrian ahead signs were recommended in both alternative plans. Staff recommended the first alternative plan.

Typically on a collector road, speed cushions are recommended every 125 m to achieve 50 km/h 85th percentile speed. Considering the length, roadway geometry, and context of the study area, staff recommended to locate speed cushions where speeds were high, near crossings and curved sections, rather than locating them every 125 m through the entire stretch of the study area. In the first alternative plan the speed cushions were situated in the following three segments of Knudson Drive:

• Four sets of speed cushions are situated along the western portion of Knudson Drive between Kanata Avenue and Weslock Way. These are intended to slow vehicular speeds along Knudson Drive between Langford Crescent and Shaughnessy Crescent W., and along the curved section of Knudson Drive between Shaughnessy W. and Shaughnessy E.
• Four sets of speed cushions are depicted along Knudson Drive between Halldorson Crescent N. and Sherk Crescent S. These measures are intended to reduce vehicular speeds at the school crossing at Nelford Court which is frequented by students of local area schools. To improve driver awareness, ladder crosswalk markings are recommended for the school crossing.
• Three sets of speed cushions are situated along Knudson Drive between Sherk Crescent S. and Morenz Terrace. Once again this segment of Knudson Drive is relatively straight and has resulted in excessive speeding which should be mitigated by the addition of speed cushions. The last set of speed cushions is situated adjacent to the golf course crossing which should benefit patrons of the Kanata Golf and Country Club.

The specific recommendations, as further described below, have been developed to the concept level only at this point, with additional design details still needing to be worked out through the design process, once implementation funds for these measures are identified. The design of each measure will need to be confirmed through detailed investigations of existing road conditions and design standards.

PROPOSED ROADWAY MODIFICATIONS (See Figure 2)
It must be emphasized that the following roadway modifications are conceptual and intended only to illustrate the proposed function. The approval of any detailed design of the roadway modifications stemming from this report will be subject to the City’s design review process.

The following measures are recommended along Knudson Drive:

1. Four sets of speed cushions on Knudson Drive between Kanata Avenue and Weslock Way
2. Seven sets of speed cushions on Knudson Drive between Weslock Way and Campeau Drive
3. Pedestrian ahead warning signs on the northbound and southbound approaches to the crossing for golfers on Knudson Drive between Sherk Crescent S. and Morenz Terrace, and on the westbound approach on Knudson Drive between Langford Crescent and Shaughnessy Crescent W.
4. Ladder crosswalk markings on the school crossing on Knudson Drive at Nelford Court

MODIFICATION OUTCOMES – BENEFITS AND IMPACTS

Pedestrians
The recommended ladder crosswalk markings will improve visibility of the school crossing and pedestrians and thereby improve pedestrian safety. As well, pedestrians will benefit from vehicle speed reductions as a result of speed cushions.

Cyclists
Cyclists will benefit from vehicle speed reductions as a result of speed cushions.
Transit
Speed cushions may cause delay of transit vehicles and passenger discomfort, but in a lesser degree in comparison with speed humps

Vehicles
Vehicle speeds will be reduced as a result of speed cushions. Motorist’s awareness of pedestrians and the school crossing will be improved.

Adjacent Land Uses
Residential community along the study area will benefit by increased pedestrian and cyclist activities and reduced vehicle speeds.

PROJECTED IMPLEMENTATION DATES
All area traffic management measures, once approved, are prioritized for potential implementation, utilizing a process described in the City’s Area Traffic Management Guidelines. Recommended measures from the Knudson Drive ATM study will be implemented either at the time of future roadway rehabilitation or when funding for implementation becomes available and these measures rank as an overall priority within the Area Traffic Management Capital program.

TOTAL ESTIMATED CONSTRUCTION COSTS
The total estimated construction cost is $102,400, as shown below:

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<tr>
<th>Measures</th>
<th>Quantity</th>
<th>Unit cost</th>
<th>Total Cost</th>
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<tr>
<td>Speed Cushions</td>
<td>11</td>
<td>9,100</td>
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<tr>
<td>Warning Sign</td>
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<td>Ladder Crosswalks</td>
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<td><strong>Total</strong></td>
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FINANCIAL COMMENTS
Upon approval, the proposed Area Traffic Management measures will be prioritized against other approved ATM measures, and will be reviewed for implementation when they are within available funding from the Area Traffic Management Capital program.

In terms of operating costs as a result of new measures, speed cushions may require additional time and cost for road maintenance including snow removal. No other significant operating costs are anticipated.

COMPLIANCE WITH TRANSPORTATION MASTER PLAN
The proposed roadway modifications comply with Section ‘7.1 Design and Build Complete Streets’ and Section ‘7.6 Protect Neighbourhoods from Undesirable Impacts’ of the Transportation Master Plan.
CONSULTATIONS
The first Public Advisory Committee meeting was held on July 24, 2013, and the Public Information Meeting was held on November 20, 2013. The purpose of the Public Information Meeting was to present existing data regarding traffic conditions to the public and seek input with respect to traffic issues from the perspective of pedestrians, cyclists, transit users, motorists, as well as area residents.

The second Public Advisory Committee meeting was held on March 19, 2014 and an Open House was held on March 24, 2014. Thirty citizens attended the Open House and twenty eight comment sheets were collected at the Open House.

In April 9, 2014, the recommended plan from the Knudson study was posted on the City website, for public comment. Staff received additional comments, mostly by email. The total number of the comments was 53, 25 comments were submitted by the residents of Knudson Drive, 21 comments were submitted by the residents of other streets, mostly streets connecting to Knudson Drive, and 7 commenters did not specify their address.

Technical input on the recommended plan was solicited through an internal circulation sent out on March 13, 2014, to the following city staff:

- Traffic Operations
- Road Safety and Traffic Investigation
- Fire Services
- Ottawa Paramedic Services
- Community Planning and Urban Design
- Road Services
- Signs & Pavement Markings
- Business Planning and Support Section, Public Works Department
- Transit Operational Planning
- Transit Network Planning

RESULTS OF CONSULTATIONS
The public was asked to identify their preferred alternative, and 25, the majority, preferred Alternative 1, which is the plan recommended by Staff. Five commenters preferred combination of Alternatives 1 and 2. There are only two commenters who specified that they did not support either alternative. Some commenters, mainly the residents of streets connecting to Knudson Drive, were opposed to traffic calming plans, but did not complete the preferred alternative section of the comment sheet.

The public was also asked to rate each recommended measure on a 1 (strongly disagree) to 5 (strongly agree) scale, 3 being neutral. The results of the rating by the public are summarized in Table 1. In general, the public supported all of the
recommended measures, with the exception of the narrowings shown in Alternative 2, which are not part of the recommended plan.

City staff provided the following technical input:

- Ottawa Fire Services had no concerns.
- Transit Services were of the opinion that on bus routes, vertical deflection should only be considered where road safety cannot be enhanced by other measures.
- Road Services had concerns for increased winter maintenance. Ice and snow build up between the edge of speed cushions and the curb line and block drainage.

CURRENT STATUS
The General Manager of Planning and Growth Management provided delegated authority approval for this study on September 17, 2014.

ATTACHMENTS
Figure 1 Study Area
Figure 2 Recommended Plan
Table 1 Public Rating of the Recommended Measures
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Figure 2 Recommended Plan
Table 1 Public Rating of the Recommended Measures

<table>
<thead>
<tr>
<th>Rating</th>
<th>Speed cushions between Kanata and Weslock</th>
<th>Speed cushions between Weslock and Campeau</th>
<th>Narrowings</th>
<th>Raised Crosswalk</th>
<th>Warning Signs</th>
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<td>Strongly Disagree</td>
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<td>12</td>
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