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Cork Drive Traffic Operations Review

List of Revisions

<table>
<thead>
<tr>
<th>Ver.</th>
<th>Date</th>
<th>Author</th>
<th>Description</th>
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<td>June 21, 2016</td>
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<td>November 16, 2016</td>
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Signatures

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Executive Summary

Study Overview

The Town of Whitby retained Paradigm Transportation Solutions Limited (Paradigm) to conduct an operational review of Cork Drive between Garden Street and Fallingbrook Street. The review was completed to assess and confirm the extent and severity of perceived traffic issues on Cork Drive identified through the Garden Street (Dryden Boulevard to Taunton Road) Class Environmental Assessment. The goal of this study was to identify and examine the merit of various measures to enhance road safety, reduce vehicle speeds, reduce/eliminate the occurrence of U-turns and alleviate aggressive driving behaviour, while maintaining the connectivity and functionality of the area road network.

Stakeholder Engagement

The Town hosted two (2) public meetings over the course of the study to engage interested stakeholders, residents and the public, and solicit feedback on the project.

The first meeting was held on November 4, 2015 to introduce the study, summarize existing conditions, and identify potential measures that could be considered for implementation on Cork Drive. The second meeting was held on April 20, 2016 to present the preliminary options, explain the assessment of the alternatives, and obtain feedback on the information presented.

Identification of Issues and Preliminary Options

Based on the review completed and the input received from the public at and following Public Meeting #1, the primary traffic-related issues to be addressed for Cork Drive are:

- (Rapid) acceleration of vehicles;
- Vehicles completing midblock U-turns (arriving from and returning to Garden Street); and
- Preserving access to the neighbourhood.
A short list of preliminary options to address the traffic concerns on Cork Drive was identified from the broad range of potential traffic calming measures. Most of these options would be categorized as horizontal deflection or non-intrusive measures. Vertical deflection and obstruction measures were not considered due to their adverse impacts on emergency and municipal services, and given the limited options for access to the neighbourhood.

The list of preliminary options can be classified into two (2) groups: combinable and stand-alone. The combinable options can be combined with any other option, both combinable and stand-alone. Stand-alone options are not typically combined with other stand-alone options.

Table E.1 lists the alternatives and provides a summary of the impacts of each preliminary option with respect to the following criteria:

- Rapid acceleration of vehicles;
- Vehicles completing midblock U-turns;
- Preserving access to the neighbourhood;
- Maintaining on-street parking; and
- Road maintenance considerations.

Conclusions

The following conclusions were drawn from the technical analyses and stakeholder engagement completed for the Cork Drive Traffic Operations Review:

- Traffic volumes and vehicle speeds on Cork Drive are not inconsistent with a typical residential road in the Town of Whitby. The percentage of U-turning traffic is higher than would be expected for a road of this nature. There is very little reported collision history.

- Local residents and stakeholders identified the following primary traffic-related issues to be addressed for Cork Drive:
### Table E.1: List and Assessment of Preliminary Options for Cork Drive

<table>
<thead>
<tr>
<th>Options</th>
<th>Addresses acceleration</th>
<th>Addresses U-turns</th>
<th>Maintains access to neighbourhood</th>
<th>On-street parking</th>
<th>Maintenance Impacts</th>
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<tr>
<td><strong>Combinable Options</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1. Education</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. Enforcement</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3. Traffic Signal Timing Reviews</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4a. Patterned Crosswalk at Garden Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4b. Patterned Crosswalk at Fallingbrook Street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stand-alone Options</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a. Curb extensions with 2 lateral shifts, Option A</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<td>●</td>
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<tr>
<td>5b. Curb extensions with 2 lateral shifts, Option B</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<td>●</td>
</tr>
<tr>
<td>6a. Curb extensions with 1 lateral shift, Option A</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>6b. Curb extensions with 1 lateral shift, Option B</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>7a. Curb extensions on north side</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>7b. Curb extensions on south side</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>8. Curb extensions on both sides with parking</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>9. Median at Garden Street</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td></td>
</tr>
<tr>
<td>10. Do Nothing</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**LEGEND:**

- ● Significant positive impacts
- ○ Minimum negative impacts
- ○ Minimum positive impacts
- ○ Significant negative impacts
- ○ No impact
• Rapid acceleration of vehicles;
• Vehicles completing midblock U-turns (arriving from and returning to Garden Street); and
• Preserving access to the neighbourhood.

► Individuals attending the public meetings believe some form of traffic calming is warranted for Cork Drive to improve traffic safety and operation, but are unable to reach consensus on the specific measures.

► Intrusive traffic calming measures (vertical deflection and obstruction) are not being considered for Cork Drive due to their adverse impacts on emergency and maintenance vehicles, and given the limited options to access the neighbourhood.

► There is no obvious preferred alternative. The combinable options pose no adverse consequences, but offer only nominal benefit in addressing the identified issues on their own. The stand-alone options would help address the issues but presented impacts on parking and vehicle operation.

On this basis, the Town may wish to consider implementing the following suite of measures:

► Education (Alternative 1);
► Enforcement (Alternative 2); and
► Traffic Signal Timing Reviews (Alternative 3).
► Patterned Crosswalks at Garden Street and Fallingbrook Street (Alternative 4, Option A and B); and
► Curb Extensions with (One) Lateral Shift (Alternative 6, Option A).

Prior to implementation, the Town should offer local residents on Cork Drive a final opportunity to provide their comments on the traffic calming measures that involve major civil work.
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Table 2.2: U-Turn Activity on Cork Drive
Table 4.1: Assessment of Options Summary
Table 4.2: Attendee Opinion on Preliminary Stand-Alone Options
1. Introduction

1.1. Overview

Cork Drive between Garden Street and Fallingbrook Street serves as a primary access route to the neighbourhood bounded by Garden Street, Taunton Road, Anderson Street and Dryden Boulevard in the Town of Whitby, herein referred to as the study area and shown in Figure 1.1. Cork Drive is the only east-west road in the study area providing direct access to Garden Street, and serves as the principle route for vehicles travelling to the west along Taunton Road due to the restriction of the Fallingbrook Street and Taunton Road intersection to right-in/right-out movements. Vehicles accessing the two schools in the study area (Fallingbrook Public School and Father Leo J. Austin Catholic Secondary School) also use Cork Drive extensively, contributing to non-local traffic on the street.

1.2. Origin

The Town is nearing the completion of a Municipal Class Environmental Assessment (EA) for improvements to Garden Street between Dryden Boulevard and Taunton Road. During the EA, residents on Cork Drive voiced their concerns about:

- Perceived speeding;
- Traffic volume; and
- U-turns on Cork Drive.

In response to these concerns, the Town initiated the Cork Drive Traffic Operations Review to assess and confirm the extent and severity of perceived traffic issues on Cork Drive identified through the Garden Street Class EA. The goal of this study was to identify and examine the merit of various measures to enhance road safety, reduce vehicle speeds, reduce the occurrence of U-turns, and alleviate aggressive driving behaviour, while maintaining the connectivity and functionality of the study area road network.

This report summarizes the study findings, providing an overview of existing conditions, a review of the stakeholder engagement conducted, a description and assessment of the potential options to address identified concerns, and the conclusions drawn.
Figure 1.1: Study Area

Study Area

- Cork Dr
- Taunton Road East
- Garden St
- Dryden Blvd
- Anderson St
2. Existing Conditions

2.1. Traffic Volumes

Figure 2.1 shows existing morning (AM), mid-day and afternoon (PM) peak hour turning movement volumes for the Cork Drive and Garden Street intersection based on traffic counts conducted on October 6, 2015. Appendix A provides the detailed count data.

The counts illustrate that approximately 200 vehicles per hour (both directions) use Cork Drive during the peak periods, with off-peak volumes in the range of 100 vehicles per hour. These volumes are not atypical for a residential road.

2.2. Vehicle Speeds

Table 2.1 summarizes vehicle speed data provided by the Town of Whitby for Cork Drive

<table>
<thead>
<tr>
<th>Speed Study (both directions)</th>
<th>October 2014</th>
<th>October 2010</th>
<th>June 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Vehicles (24-hours)</td>
<td>1,701</td>
<td>1,655</td>
<td>1,846</td>
</tr>
<tr>
<td>Average Speed (km/h)</td>
<td>39</td>
<td>42</td>
<td>38</td>
</tr>
<tr>
<td>50% Speed (km/h)</td>
<td>41</td>
<td>43</td>
<td>41</td>
</tr>
<tr>
<td>85% Speed (km/h)</td>
<td>48</td>
<td>50</td>
<td>47</td>
</tr>
<tr>
<td>95% Speed (km/h)</td>
<td>51</td>
<td>54</td>
<td>52</td>
</tr>
<tr>
<td>Pace (range)(km/h)</td>
<td>35.2-55.1</td>
<td>35.1-55.0</td>
<td>36.0-45.0</td>
</tr>
<tr>
<td>Pace (length of range)(km/h)</td>
<td>20</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Pace (% of vehicles in pace)</td>
<td>85.4%</td>
<td>87.0%</td>
<td>63.2%</td>
</tr>
</tbody>
</table>

For all three (3) speed studies, the 85th percentile speed (considered the operating speed) was observed to be at or below the speed limit of 50 km/h. This may be partially attributed to the relatively short length of Cork Drive between Garden Street and Fallingbrook Street.
Summary of Peak Hour Traffic Volumes
Intersection of Cork Drive and Garden Street

**Figure 2.1**

**AM Peak Hour**
7:45-8:45

- Cork Drive
  - 41
  - 114

- Garden Street
  - 478
  - 485

**Mid-Day Peak Hour**
11:00-12:00

- Cork Drive
  - 26
  - 44

- Garden Street
  - 478
  - 487

**PM Peak Hour**
17:15-18:15

- Cork Drive
  - 34
  - 72

- Garden Street
  - 499
  - 510
2.3. U-Turn Activity

Table 2.2 summarizes daily U-turn activity observed on Cork Drive over a five (5) day period between Wednesday, October 28, 2015 at midnight and Monday, November 2, 2015 at midnight. The survey was completed through video data collection, and counted any vehicle entering Cork Drive from and returning immediately to Garden Street as a U-turn manoeuvre.

Table 2.2: U-Turn Activity on Cork Drive

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of U-turns</td>
<td>66</td>
<td>89</td>
<td>89</td>
<td>77</td>
<td>39</td>
</tr>
<tr>
<td>Number of Vehicles (both directions)</td>
<td>1,830</td>
<td>1,911</td>
<td>2,029</td>
<td>1,909</td>
<td>1,483</td>
</tr>
<tr>
<td>Percentage of U-turns</td>
<td>3.6%</td>
<td>4.7%</td>
<td>4.4%</td>
<td>4.0%</td>
<td>2.6%</td>
</tr>
</tbody>
</table>

The table illustrates that approximately 4% of vehicles using Cork Drive performed a midblock U-turn manoeuvre.

2.4. Collision History

The Town of Whitby provided collision data for Cork Drive over the ten-year period from January 2005 to September 2015. The following summarizes the relevant observations:

2.4.1. Midblock

Only one (1) midblock collision was reported on Cork Drive over the subject period. The collision occurred on July 31, 2007 when an eastbound vehicle collided with a parked vehicle on a clear and dry day, under dark conditions. The incident was classified as a property damage only (PDO) collision.

2.4.2. Intersection of Cork Drive and Fallingbrook Street

Only one (1) collision was reported at the intersection of Cork Drive and Fallingbrook Street over the subject period. The collision...
occurred on May 27, 2013 when a northbound vehicle ran off the road while turning left on a clear and dry day, under daylight conditions. The incident was classified as a PDO collision.

2.4.3. Intersection of Cork Drive and Garden Street

Three (3) collisions were reported at the intersection of Cork Drive and Garden Street over the subject period.

The first collision occurred on April 10, 2006 when a northbound vehicle hit the curb when turning right on a clear and dry day, under dark conditions. The incident was classified as a PDO collision.

The second collision occurred on October 23, 2009 when a southbound vehicle turning left and a northbound vehicle going ahead collided on a rainy day on wet pavement, under daylight conditions. It was the only reported collision involving more than one vehicle. The incident was classified as a PDO collision.

The third collision occurred on July 1, 2012 when a westbound vehicle was turning right and struck a pedestrian a clear and dry day, under daylight conditions. It was the only reported collision involving a pedestrian. The incident was classified as a non-fatal injury collision.

2.4.4. Collision Patterns

No collision pattern emerged from the analysis.

2.5. Site Visit

Paradigm staff conducted a site visit on Thursday, December 10, 2015 to observe current operations, roadway conditions and adjacent development, and identify any limitations that could prevent or limit the implementation or effectiveness of potential measures.

Observed conditions were considered typical for a residential road in the Town of Whitby, although some undesirable vehicle behaviour was noted, in particular the rapid rate of acceleration. Potential limitations were noted during the visit, and considered in developing the alternatives discussed in further detail in Chapter 3 below.
3. Stakeholder Engagement

The Town held two (2) public meetings over the course of the study to engage interested stakeholders, residents and the public, and solicit feedback on the project. The public meetings were held at the Town of Whitby Town Hall, in the Council Chambers. At the conclusion of each meeting, attendees were invited to offer written comments and were provided a deadline for responses.

The following summarizes the content of the meetings and the feedback received from attendees.

3.1. Public Meeting #1

Public Meeting #1 was held on the evening of November 4, 2015. Approximately 30 individuals, mostly residents of the study area, attended the meeting. Appendix B provides the public notice, presentation, notes and comments sheets from the meeting.

The session began with a presentation of the following information:

► Study background and objectives;
► Study area description;
► Study process;
► Summary of existing conditions;
► Potential measured for Cork Drive; and
► Next steps.

Following the presentation, attendees were invited to offer comments on the material presented and their perceptions of current conditions. Concerns expressed included:

► Speeding on Cork Drive, Fallingbrook Street, Kilbride Drive, Anderson Street;
► Acceleration on Cork Drive;
► Collisions and near misses on Cork Drive;
► Residential streets should not serve as through roadways;
► Traffic signal timings at:
  ► Anderson Street and Taunton Road
• Garden Street and Dryden Boulevard; and
  ▶ School buses on Cork Drive and turning left at Garden Street.

Participants were then asked to rank their concerns, which resulted in the following ordering (number of individuals identifying issue as a concern in brackets):

▶ No concern (4)
▶ Operations and/or safety at Cork Drive and Garden Street intersection (4)
▶ Traffic volumes on Cork Drive (4)
▶ Safety concerns on Cork Drive (2)
▶ Operations and/or safety at Cork Drive and Fallingbrook Street intersection (1)
▶ Safety for youth travelling on Cork Drive (1)
▶ Traffic signals at the Garden Street and Cork Drive intersection (when Garden Street is widened to 4 lanes) (1)

It was interesting to note that some attendees did not believe there was a traffic concern on Cork Drive.

Attendees were also asked to identify their preferred potential solutions, which resulted in the following ranking (number of individuals identifying solution as preferred in brackets).

▶ Textured Crosswalk (3)
▶ Roundabout at Fallingbrook Street and/or Garden Street (2)
▶ Curb Extension (1)
▶ Enforcement (1)

3.2. Public Meeting #2

Public Meeting #2 was held on the evening of April 20, 2016. Approximately 17 individuals attended the meeting, mostly residents of the study area based on the sign-in sheets. **Appendix C** provides the public notice, presentation, notes and comments sheets from the meeting.
Similar to Public Meeting #1, the session began with a presentation, in this case providing:

- Review of study background, objectives, area and process;
- Summary of existing conditions;
- Summary of input received through Public Meeting #1;
- Preliminary options for Cork Drive; and
- Next steps.

Following the presentation, attendees were invited to offer comments on the material presented and their opinions on the preliminary options presented. Section 4.3 summarizes the feedback received on the different options.
4. Development and Assessment of Preliminary Options

4.1. Identified Issues

Based on the review completed and the input received from the public at and following Public Meeting #1, the primary traffic-related issues to be addressed for Cork Drive are:

- (Rapid) acceleration of vehicles;
- Vehicles completing midblock U-turns (arriving from and returning to Garden Street); and
- Preserving access to the neighbourhood.

The options identified below address at least one (and in some instances multiple) of these issues with measures intended to improve traffic safety and operation on Cork Drive.

4.2. Preliminary Options

A short list of preliminary options to address traffic concerns on Cork Drive was identified from the broad range of potential traffic calming measures. Most of these options would be categorized as horizontal deflection or non-intrusive measures. Vertical deflection and obstruction measures were not considered due to their adverse impacts on emergency and municipal services, and given the limited options for access to the neighbourhood.

The list of preliminary options can be classified into two (2) groups: combinable and stand-alone. The combinable options can be combined with any other option, both combinable and stand-alone. Stand-alone options are not typically combined with other stand-alone options.

The following summarizes each option. The expected effectiveness in addressing the three (3) issues noted above and potential implementation impacts are identified.
4.2.1. Combinable Options

Alternative 1: Education

A targeted education program could raise awareness of road safety issues and promote more appropriate driver behaviour amongst neighbourhood residents. The program, likely developed and implemented by or in association with the Town, could include some or all of the following elements:

- Educational materials mailed to neighbourhood residents;
- Activities and education materials provided through area schools;
- A portable radar trailer, used to bring drivers’ attention to their speed; and/or
- Neighbourhood Pace Car (Parachute Canada) program aimed at residents and parents of children attending area schools.

This alternative may help address acceleration concerns, with area residents becoming more aware of the issue and its impacts. An education program is not expected to address the U-turn issue since drivers most likely to complete this manoeuvre will not typically reside in the study area. Finally, this alternative preserves access to the neighbourhood. It also has no impact on on-street parking and road maintenance activities.

Alternative 2: Enforcement

Targeted speed enforcement on Cork Drive and within the broader study area by the Durham Regional Police Service could encourage drivers to accelerate less rapidly and drive more carefully. However, enforcement may not prove effective on Cork Drive, as the latest speed study indicates that the average vehicle speed is 39 km/h and only 5% of drivers exceed the 50 km/h speed limit, and there is nothing illegal with rapid acceleration.

This alternative may help to address acceleration concerns, although benefits are expected to be short lived once enforcement ends. Enforcement is not expected to address the U-turn issue, but would maintain access to the neighbourhood. It also has no impact on on-street parking and road maintenance activities.
Alternative 3: Traffic Signal Timing Review

The Town should request the Region of Durham to review traffic signal timings for the following study area boundary intersections:

- Anderson Street and Taunton Road;
- Garden Street and Dryden Boulevard;
- Anderson Street and Dryden Boulevard;
- Fallingbrook Street and Dryden Boulevard; and
- Garden Street and Taunton Road.

The review should include analysis of volume to capacity (v/c) ratios, levels of service (LOS), delays and queuing, with a focus on movements into and out of the study area.

The review could identify signal timing or other changes that could result in less through traffic on Cork Drive, which would be beneficial to local residents.

This alternative may help to address acceleration concerns if the review shows potential for improvement at any of the signalized intersections and drivers modify their routes to take advantage of the improved conditions. Revised signal timings are not expected to address the U-turn issue, but would have no impact on access to the neighbourhood. Timing changes would also not impact on-street parking and road maintenance activities.

Alternative 4: Patterned Crosswalks

Patterned crosswalks provide a patterned or textured and often coloured surface to a pedestrian crossing. Installing patterned crosswalks across Cork Drive at Garden Street (Option A) and/or Fallingbrook Street (Option B) would better define the crossing location and alert drivers to the potential presence of pedestrians, thereby encouraging slower operating speeds and discouraging rapid acceleration.

This alternative may help to address acceleration and U-turn concerns by drawing drivers’ attention to the presence of pedestrians as they turn from Garden Street and/or Fallingbrook Street onto Cork Drive, forcing vehicles to slow. Patterned crosswalks would not impact access to the neighbourhood. They
also would not impact on-street parking and road maintenance activities, although additional effort may be required to maintain the crossings depending on their design and material.

4.2.2. Stand-Alone Options

Alternative 5: Curb Extensions with Two (2) Lateral Shifts

Constructing curb extensions in three (3) locations and introducing two (2) lateral shifts along Cork Drive would narrow the roadway and require drivers to manoeuvre around the extensions and through the lateral shifts. This configuration is expected to reduce vehicle speeds and acceleration on Cork Drive. The curb extensions will also reduce crossing distances for pedestrians at the Garden Street and Fallingbrook Street intersections.

Figures D.1 and D.2 in Appendix D conceptually illustrate Options A and B, respectively, for Alternative 5. Option A shows two (2) curb extensions on the south side and one (1) on the north side. Conversely, Option B shows two (2) curb extensions on the north side and one (1) on the south side.

This alternative may help to address acceleration concerns by forcing drivers to operate their vehicles more slowly to navigate the road. Curb extensions may also help reduce the number of U-turns as their presence may deter some drivers from making this manoeuvre. While this alternative would maintain access to the neighbourhood, it has significant impacts for on-street parking on Cork Drive, which would need to be eliminated. There is concern that drivers may cross the centreline to minimize the lateral shift and maintain higher speeds. Larger vehicles may also need to cross the centreline at intersections to complete their turning movements. Finally, curb extensions may negatively impact road maintenance activities in winter (e.g. snow clearing) and other seasons (e.g. drainage, leaf and refuse accumulation).

Alternative 6: Curb Extensions with One (1) Lateral Shift

Constructing curb extensions in four (4) locations and introducing one (1) lateral shift along Cork Drive would narrow the roadway and require drivers to manoeuvre around the extensions and through the lateral shift. As noted for Alternative 5, this configuration has the potential to reduce vehicle speeds and pedestrian crossing distances.
Figures D.3 and D.4 in Appendix D conceptually illustrate Options A and B, respectively, for Alternative 6. Option A would require drivers to shift from the north side of Cork Drive at Garden Street to the south side closer to Fallingbrook Street. Option B would reverse the alignment.

This alternative would offer similar benefits and impacts as Alternatives 5, with the exception of parking. Alternative 6 would pose less impact to on-street parking on Cork Drive than Alternative 5. The exact number of parking spaces remaining would be determined at the detailed design stage, but Options A and B are both expected to retain on-street parking for approximately five (5) vehicles.

**Alternative 7: Curb Extensions on One (1) Side**

Constructing curb extensions on one (1) side of Cork Drive and allowing on-street parking between the extensions would narrow the roadway, while permitting some parking to remain. Similar to Alternatives 5 and 6, this configuration has the potential to reduce vehicle speeds and pedestrian crossing distances.

Figures D.5 and D.6 in Appendix D conceptually illustrate Option A and B, respectively, for Alternative 7. Option A would direct drivers to the south portion of Cork Drive, with curb extensions and on-street parking provided on the north side of the roadway. Option B would reverse the alignment.

This alternative would offer similar benefits and impacts as Alternatives 5 and 6, with the exception of parking. Alternative 7 would pose less impact to on-street parking on Cork Drive than the preceding alternatives. The exact amount of parking remaining would be determined at the detailed design stage, but Option A (parking on north side) is expected to retain on-street parking for approximately eight (8) vehicles, while Option B (parking on south side) is expected to retain parking for about 10 vehicles. In addition to parking, Alternative 7 would also alleviate vehicles from crossing the centreline to maintain speed through the curb extensions as there is no lateral shift imposed.

**Alternative 8: Curb Extensions on Both Sides with Parking**

Constructing curb extensions on both sides of Cork Drive near Garden Street and Fallingbrook Street and at a midblock location,
and allowing on-street parking on both sides of the roadway between the curb extensions would narrow the roadway, while permitting some parking to remain. Similar to Alternatives 5, 6 and 7, this configuration has the potential to reduce vehicle speeds and pedestrian crossing distances.

**Figures D.7** in **Appendix D** conceptually illustrates the design.

This alternative would offer similar benefits and impacts as Alternative 7, except for parking. Alternative 8 would pose less impact to on-street parking on Cork Drive than the preceding alternative. The exact amount of parking remaining would be determined at the detailed design stage, but on-street parking for about 11 vehicles is expected to be retained.

**Alternative 9: Median at Garden Street**

Installing a raised median island on Cork Drive at Garden Street would narrow the roadway immediately east of the intersection. This alternative is the same as the one proposed through the Garden Street Class EA\(^1\).

**Figures D.8** in **Appendix D** conceptually illustrates the design.

This alternative may help to address acceleration concerns by forcing drivers to operate their vehicles more slowly as they turn onto Cork Drive from Garden Street, but is unlikely to curb speeding and acceleration east of the intersection and may lead to rear-end collisions. Installing a median will not impact access to the neighbourhood and will preserve most, if not all, on-street parking on Cork Drive. Additional effort may be required to maintain the median depending on its design and materials. A raised median depending on detailed design may limit access to two (2) properties to right turn in and right turn out only. It would not alter existing on-street parking significantly as the Town’s current Traffic By-Law of no parking within 10 metres of any intersection applies at all times.

**Alternative 10: Do Nothing**

In the Do Nothing alternative, no improvements or changes would be made to Cork Drive. Leaving the road in its current state would

\(^1\) More information on the Garden Street EA can be found here: [http://www.whitby.ca/en/townhall/currentstudies.asp#gardenstreet](http://www.whitby.ca/en/townhall/currentstudies.asp#gardenstreet)
not cause any undue impacts and would preserve access to the neighbourhood, but would not address the acceleration and U-turn concerns.

Do nothing alternative does not address the stated concerns and would not alter current conditions.

### 4.3. Assessment of Preliminary Options

#### 4.3.1. Technical

Table 4.1 provides a summary of the impacts of each preliminary option with respect to the following criteria:

- Rapid acceleration of vehicles;
- Vehicles completing midblock U-turns;
- Preserving access to the neighbourhood;
- Maintaining on-street parking; and
- Road maintenance considerations.

The table illustrates that:

- The combinable options pose no adverse consequences, but offer only limited benefit in addressing the identified issues on their own. Most of these measures should be used to supplement/complement other strategies.
- The stand-alone options would help address the issues but presented adverse impacts. All options (other than the Do Nothing) posed negative impacts to on-street parking and road maintenance activities.
- There is no obvious preferred alternative.

#### 4.3.2. Stakeholder

Attendees at Public Meeting #2 were invited to provide feedback on the preliminary options to gauge community support for the different alternatives. Each individual was asked to vote on the options they preferred the most and least by placing green and red dots, respectively, on display boards depicting the alternatives. Table 4.2 summarizes the results.
According to the table, Alternative 6, Option A (Curb extensions with one (1) lateral shift) garnered the most support from attendees. Do nothing also had the support of a number of attendees. It is also noted that it appears based on the number of attendees, that some residents may have provided support more than once, which may be skewing the results.
Table 4.1: Assessment of Options Summary

<table>
<thead>
<tr>
<th>Options</th>
<th>Addresses acceleration</th>
<th>Addresses U-turns</th>
<th>Maintains access to neighbourhood</th>
<th>On-street parking</th>
<th>Maintenance Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Combinable Options</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Education</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>2. Enforcement</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>3. Traffic Signal Timing Reviews</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<td>○</td>
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<tr>
<td>4a. Patterned Crosswalk at Garden Street</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>4b. Patterned Crosswalk at Fallingbrook Street</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td><strong>Stand-alone Options</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5a. Curb extensions with 2 lateral shifts, Option A</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>5b. Curb extensions with 2 lateral shifts, Option B</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>6a. Curb extensions with 1 lateral shift, Option A</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>6b. Curb extensions with 1 lateral shift, Option B</td>
<td>●</td>
<td>○</td>
<td>○</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>7a. Curb extensions on north side</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>7b. Curb extensions on south side</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>8. Curb extensions on both sides with parking</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>9. Median at Garden Street</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>10. Do Nothing</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**LEGEND:**

- ● Significant positive impacts
- ○ Minimum positive impacts
- ○ Minimum negative impacts
- ○ Significant negative impacts
- ○ No impact
## Table 4.2: Attendee Opinion on Preliminary Stand-Alone Options

<table>
<thead>
<tr>
<th>Stand-Alone Options</th>
<th>Number of Attendees in</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Support (Green Dots)</td>
</tr>
<tr>
<td>5a. Curb extensions with 2 lateral shifts, Option A</td>
<td>0</td>
</tr>
<tr>
<td>5b. Curb extensions with 2 lateral shifts, Option B</td>
<td>1</td>
</tr>
<tr>
<td>6a. Curb extensions with 1 lateral shift, Option A</td>
<td>8</td>
</tr>
<tr>
<td>6b. Curb extensions with 1 lateral shift, Option B</td>
<td>0</td>
</tr>
<tr>
<td>7a. Curb extensions on north side</td>
<td>0</td>
</tr>
<tr>
<td>7b. Curb extensions on south side</td>
<td>1</td>
</tr>
<tr>
<td>8. Curb extensions on both sides with parking</td>
<td>0</td>
</tr>
<tr>
<td>9. Median at Garden Street</td>
<td>2</td>
</tr>
<tr>
<td>10. Do Nothing</td>
<td>7</td>
</tr>
</tbody>
</table>
5. Conclusions

The following conclusions were drawn from the technical analyses and stakeholder engagement completed for the Cork Drive Traffic Operations Review:

- Traffic volumes and vehicle speeds on Cork Drive are not inconsistent with a typical residential road in the Town of Whitby. The percentage of U-turning traffic is higher than would be expected for a road of this nature. There is very little reported collision history.

- Local residents and stakeholders identified the following primary traffic-related issues to be addressed for Cork Drive:
  - Rapid acceleration of vehicles;
  - Vehicles completing midblock U-turns (arriving from and returning to Garden Street); and
  - Preserving access to the neighbourhood.

- Individuals attending the public meetings believe some form of traffic calming is warranted for Cork Drive to improve traffic safety and operation, but are unable to reach consensus on the specific measures.

- Intrusive traffic calming measures (vertical deflection and obstruction) are not being considered for Cork Drive due to their adverse impacts on emergency and maintenance vehicles, and given the limited options to access the neighbourhood.

- There is no obvious preferred alternative. The combinable options pose no adverse consequences, but offer only nominal benefit in addressing the identified issues on their own. The stand-alone options would help address the issues but presented impacts on parking and vehicle operation.

On this basis, the Town may wish to consider implementing the following suite of measures:

- Education (Alternative 1);
- Enforcement (Alternative 2); and
- Traffic Signal Timing Reviews (Alternative 3).
- Patterned Crosswalks at Garden Street and Fallingbrook Street (Alternative 4, Option A and B); and
- Curb Extensions with (One) Lateral Shift (Alternative 6, Option A).

Prior to implementation, the Town should offer local residents on Cork Drive a final opportunity to provide their comments on the traffic calming measures that involve major civil work.
Appendix A

Turning Movement Counts for Intersection of Cork Drive and Garden Street
Whitby, 2010

Morning Peak Diagram

<table>
<thead>
<tr>
<th>Specified Period</th>
<th>One Hour Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>From: 6:30:00</td>
<td>From: 7:45:00</td>
</tr>
<tr>
<td>To: 9:30:00</td>
<td>To: 8:45:00</td>
</tr>
</tbody>
</table>

** Municipality:** Whitby  
** Site #:** 0000005010  
** Intersection:** Garden Street & Cork Drive  
** TFR File #:** 3  
** Count date:** 11-Nov-2010

** Weather conditions:** Clear  
** Person(s) who counted:**

** Non-Signalized Intersection **  
** Major Road:** Garden Street runs N/S

<table>
<thead>
<tr>
<th><strong>North Leg Total:</strong> 1020</th>
<th><strong>East Leg Total:</strong> 176</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North Entering:</strong> 444</td>
<td><strong>East Entering:</strong> 133</td>
</tr>
<tr>
<td><strong>North Peds:</strong> 0</td>
<td><strong>East Peds:</strong> 14</td>
</tr>
<tr>
<td><strong>Peds Cross:</strong> ≈</td>
<td><strong>Peds Cross:</strong> ≈</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>9</td>
<td>9</td>
<td>402</td>
<td>420</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>12</td>
<td>423</td>
<td>576</td>
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</table>

<table>
<thead>
<tr>
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<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>East</td>
<td>8</td>
<td>6</td>
<td>562</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>6</td>
<td>576</td>
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</table>

** Garden Street **

<table>
<thead>
<tr>
<th></th>
<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>10</td>
<td>10</td>
<td>130</td>
<td>240</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>15</td>
<td>451</td>
<td>496</td>
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<table>
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<th>Trucks</th>
<th>Cars</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>3</td>
<td>3</td>
<td>494</td>
<td>496</td>
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<table>
<thead>
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<th></th>
<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>9</td>
<td>9</td>
<td>471</td>
<td>496</td>
</tr>
</tbody>
</table>

** Cork Drive **

<table>
<thead>
<tr>
<th></th>
<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
<th>Totals</th>
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</thead>
<tbody>
<tr>
<td>North</td>
<td>6</td>
<td>6</td>
<td>36</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>1</td>
<td>494</td>
<td>496</td>
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<table>
<thead>
<tr>
<th></th>
<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>1</td>
<td>1</td>
<td>471</td>
<td>496</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>8</td>
<td>8</td>
<td>471</td>
<td>496</td>
</tr>
</tbody>
</table>

Comments
**Whitby, 2010**

### Mid-day Peak Diagram

<table>
<thead>
<tr>
<th>Specified Period</th>
<th>One Hour Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>From: 11:00:00</td>
<td>From: 12:00:00</td>
</tr>
<tr>
<td>To: 13:00:00</td>
<td>To: 13:00:00</td>
</tr>
</tbody>
</table>

### Municipality: Whitby

- **Site #:** 0000005010
- **Intersection:** Garden Street & Cork Drive
- **TFR File #:** 3
- **Count date:** 11-Nov-2010

### Weather conditions:

- Clear

### Person(s) who counted:

**Non-Signalized Intersection**

<table>
<thead>
<tr>
<th>North Leg Total:</th>
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<tbody>
<tr>
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<tr>
<td>North Peds:</td>
<td>0</td>
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<tr>
<td>Peds Cross:</td>
<td>≈</td>
</tr>
</tbody>
</table>

North Leg:

- Cars: 321
- Trucks: 8
- Heavys: 6

<table>
<thead>
<tr>
<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>0</td>
<td>347</td>
</tr>
<tr>
<td>Totals</td>
<td>335</td>
<td>27</td>
</tr>
</tbody>
</table>

East Leg:

- Cars: 33
- Trucks: 0
- Heavys: 5

<table>
<thead>
<tr>
<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>0</td>
<td>408</td>
</tr>
<tr>
<td>Totals</td>
<td>408</td>
<td></td>
</tr>
</tbody>
</table>

Major Road: Garden Street runs N/S

**Non-Signalized Intersection**

<table>
<thead>
<tr>
<th>East Leg Total:</th>
<th>83</th>
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<tr>
<td>East Peds:</td>
<td>4</td>
</tr>
<tr>
<td>Peds Cross:</td>
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East Leg:

- Cars: 33
- Trucks: 0
- Heavys: 5

<table>
<thead>
<tr>
<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>0</td>
<td>408</td>
</tr>
<tr>
<td>Totals</td>
<td>408</td>
<td></td>
</tr>
</tbody>
</table>

Cork Drive:

- Cars: 33
- Trucks: 0
- Heavys: 5

<table>
<thead>
<tr>
<th>Heavys</th>
<th>Trucks</th>
<th>Cars</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
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</tr>
<tr>
<td>Totals</td>
<td>408</td>
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</tbody>
</table>

Comments
**Whitby, 2010**

### Afternoon Peak Diagram

**Specified Period**
- **From:** 15:30:00
- **To:** 18:29:00

**One Hour Peak**
- **From:** 15:45:00
- **To:** 16:45:00

### Municipality:
- Whitby

### Site #:
- 0000005010

### Intersection:
- Garden Street & Cork Drive

### TFR File #:
- 3

### Count date:
- 11-Nov-2010

### Weather conditions:
- Clear

### Person(s) who counted:

**Non-Signalized Intersection**

<table>
<thead>
<tr>
<th>North Leg Total: 1042</th>
<th>North Entering: 498</th>
<th>North Peds: 0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavys: 6 0</td>
<td>Trucks: 3 0</td>
<td>Cars: 420 69</td>
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<tr>
<td>Totals: 429 69</td>
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<table>
<thead>
<tr>
<th>South Leg Total: 694</th>
<th>South Entering: 429</th>
<th>South Peds: 0</th>
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</thead>
<tbody>
<tr>
<td>Heavys: 3 0</td>
<td>Trucks: 2 0</td>
<td>Cars: 539 442</td>
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<tr>
<td>Totals: 544 694</td>
<td></td>
<td></td>
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</tbody>
</table>

### Major Road:
- Garden Street runs N/S

### Comments
Whitby, 2010

Total Count Diagram

Municipality: Whitby  Weather conditions: Clear
Site #: 0000005010  Person(s) who counted:
Intersection: Garden Street & Cork Drive
TFR File #: 3
Count date: 11-Nov-2010

** Non-Signalized Intersection **

<table>
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<tr>
<td>North Entering:</td>
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<td>North Peds:</td>
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<td>East Peds: 59</td>
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<td>Peds Cross:</td>
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<table>
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<tr>
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<th>Trucks</th>
<th>Cars</th>
<th>Totals</th>
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<tr>
<td>North Leg</td>
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<td>38</td>
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<td>2605</td>
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<td>North Entering</td>
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<td>38</td>
<td>2525</td>
<td>2605</td>
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<tr>
<td>North Peds</td>
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<td>1</td>
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<td>1</td>
</tr>
<tr>
<td>Peds Cross</td>
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<td>1</td>
<td>0</td>
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<th>Cars</th>
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</thead>
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<tr>
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<table>
<thead>
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Comments
## Traffic Count Summary

**Intersection:** Garden Street & Cork Drive  
**Count Date:** 11-Nov-2010  
**Municipality:** Whitby

### North Approach Totals

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### Calculated Values for Traffic Crossing Major Street

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Appendix B

Public Meeting #1 Materials
Notice of Public Meeting No. 1

Whitby, October, 13, 2015 – Cork Drive Traffic Operational Review Study.

The Study
The Town of Whitby (Town) has retained an engineering consultant, Paradigm Transportation Solutions Limited, to conduct a Traffic Operational Review Study for Cork Drive. Cork Drive is a local road that runs east-west between Garden Street and Fallingbrook Street. The road serves as one of the primary access routes to the residential neighbourhood to the east of Garden Street. This neighbourhood forms the study area as shown in the following figure:

![Study Area](image)

Background
The Town is undertaking a Class Environmental Assessment (Class EA) for Gardan Street between Dryden Boulevard and Taunton Road. The objective of the Class EA study is to identify the existing and future transportation needs on Garden Street to accommodate the anticipated growth in Whitby. During the public consultation phase of the Class EA study, some local residents have raised concerns about speeding and U-turns on Cork Drive. As such, the Town has initiated this Traffic Operational Review Study to examine the concerns, and to identify potential mitigating measures.

Public Consultation
Public consultation is a key component of the Traffic Operational Review Study. Two (2) public meetings will be held to allow the project team to meet with the public to provide project details, obtain public input and address public comments and concerns. Feedback will be sought from interested stakeholders, including regulatory agencies, members of the public and property owners throughout the study area.

Public Meeting No. 1
The first public meeting is intended to introduce the study and to obtain initial public input on the traffic issues. The meeting is scheduled as follows:

**Date:** Wednesday, November 4, 2015  
**Time:** 6:30 p.m. – Project Introduction and Presentation  
7:00 p.m. – Open Discussion

**Location:** Town Hall, 575 Rossland Road East, Town of Whitby

If you are planning to attend this public meeting, please call or email one of the following project team members for registration:

**Gene Chartier, P. Eng.**  
Paradigm Transportation Solutions Limited  
5000 Yonge Street, Suite 1901  
Toronto, Ontario M2N 7E9  
Tel: 416.479.9684, extension 501  
Email: gchartier@ptsl.com

**Horace Loo, P. Eng.**  
Project Engineer - Town of Whitby  
575 Rossland Road East  
Whitby, Ontario L1N 2M8  
Tel: 905.430.4300, extension 2336  
Fax: 905.686.7005  
Email: lookh@whitby.ca

If you cannot attend this public meeting but wish to provide comments, please contact the above project team members directly.

Personal information is collected under the authority of Section 11 of the Municipal Act, 2001 and will be used for information purposes only for this project. Questions regarding the collection and use of personal information should be directed to the Town of Whitby, Office of the Town Clerk at 905.686.2621.
Town of Whitby
Cork Drive Traffic Operational Review

Public Meeting #1

1. Presentation
   - Gene Chartier (GC) provide an overview of the study with the assistance of a PowerPoint slide presentation.
   - During the presentation, the public was given the opportunity to pose questions. Members of the Project Team in attendance – GC, Horace Look (HL) and Tara Painchaud (TP) – provided responses.  
   - The presentation concluded with the public identifying the issue causing them the most concern and their preferred solution to the traffic issues on Cork Drive.

2. Question and Answer Period

The following summarizes the questions (Q) and comments (C) received from the public and the responses (A) provided by the Project Team:

   - Q: How will the Garden Street four-lane configuration affect Cork Drive?
     - A: Southbound left turn movement at the intersection of Garden Street and Cork Drive will have a left-turn lane.
   - Q: Will Garden Street be overused by 2019-2020 without improvement?
     - A: Traffic will become congested at signalized intersections first and extend to the roadway.
   - Q: Are there plans for Anderson Street?
     - A: The widening of Anderson Street is forecast for the year 2024, subject to budget approval.
   - Q: How far north will the Garden Street extension go?
     - A: The Town intends to extend Garden Street northerly. It would connect to an east-west roadway, with environmental features precluding a direct connection to Baldwin Street (Highway 12).
Q: Will Garden Street connect to Highway 401 with a ramp on the east side of the Canadian Tire?
  - A: There is not sufficient property for this connection. The Ministry of Transportation (MTO) has also confirmed that the works are not feasible.

Q: Are there any solutions that have been found to the issues presented?
  - A: The Cork Drive Traffic Operational Review has been initiated as a result of the Garden Street EA. The study is being carried out by an independent consultant.

Q: What department is conducting this study?
  - A: The Public Works Department with the assistance of consulting team.

Q: People speed on Anderson Street, Kilbride Drive and Cork Drive. At the intersection of Anderson Street and Taunton Road, the left turn light sometimes work and sometimes doesn’t. A longer protected left turn signal at Anderson Street during peak hours would help, it currently is maybe 2 seconds long in the morning. At the intersection of Garden Street and Dryden Boulevard, the light to go from westbound to southbound also needs to be improved. People use Cork Drive as a shortcut.
  - A: The study area includes Kilbride Drive. Traffic signal timing will be reviewed in consultation with the Region of Durham.

Q: Could there be stop signs to annoy and break traffic, for example at the park entrance on Kilbride Drive? Speeding is a big problem on Kilbride Drive, and there are lots of schools in the area. Cork Drive, Kilbride Drive and Fallingbrook Street should return to being residential roadways.
  - A: Traffic signal timing will be reviewed in consultation with the Region of Durham.

Q: With Garden Street being widened to four lanes and having a southbound left turn lane at Cork Drive, will this intersection be signalized?
  - A: The intersection of Garden Street and Cork Drive is not planned to be signalized.
C: People use Cork Drive and Kilbride Drive to get to Anderson Street and avoid lights.

Q: Will there be restrictions on Garden Street for heavy trucks?
   • A: It is difficult to enforce truck restrictions. Signs are usually installed in locations supported by enforcement. Permissive truck routes are better than restrictions.

Q: With Garden Street being widened to four lanes, is there a chance there would be a roundabout at the intersection of Garden Street and Cork Drive?
   • A: It is not currently planned.

Q: What is the relation between the Region, the Town, and the Consultant’s report?
   • A: The Consultant will make recommendations to the Town, with implementation the responsibility of the Town or the Region of Durham if the matter falls within their jurisdiction.

Comment from Councillor Steve Yamada: We are currently looking at ways to improve the situation. We do not want band-aid solutions. A report is coming. The development at Dryden Boulevard and Anderson Street will increase the traffic. We are trying to slow down traffic within the community. Maybe we’ll be looking at signs not allowing cars through the subdivision. I will be sitting down with Town staff and will be back in the community. We are looking at it seriously to make sure the community is safe.

Q: We were late, can we get a summary of the presentation?
   • A: GC provided a brief summary of the presentation to this point.

Q: We have had suggestions of lights, roundabout, and three-way stop signs.
   • A: Those matters will be discussed later in the presentation.

Q: What is the purpose of a median? Decrease the traffic?
   • A: Cork Drive is short in length, but has a wide cross-section. Narrowing the lanes can help reduce the speed and could have a side benefit of improving the aesthetics.
Q: There is already parking on both sides, which makes it narrow, we need to wait when meeting another car. If the lane width is reduced, it compounds the problem.

- A: The median would only be considered at the intersection with Garden Street.

Q: There is a neighbour who lives close to the intersection, and when he has company over, they have to park on the street, that wouldn’t work with the median.

- A: There would a No Parking restriction within 10 m of the intersection with a median.

Q: We have been through this two years ago, will we go through it again in two years?

- A: This study builds on the previous work completed for the Garden Street EA and is specific to Cork Drive.

Q: What is the timeline for the final recommendations to council?

- A: No timeline confirmed at this point.

Q: Are you considering pedestrian traffic as well? There are transit stops on Garden Street, and now pedestrians will have to cross 4 to 5 lanes on Garden Street.

- A: This matter will be referred to the Garden Street EA Study.

C: A crosswalk was proposed a couple of years ago to address children and people crossing to the other side of Garden Street.

Q: Will we have another opportunity to provide feedback?

- A: Yes, likely in late winter/early spring 2016.

Q: Do the existing conditions involved trucks and U-turns?

- A: Yes.

Q: How does it compare to other similar areas?

- A: The findings have not been compared to other roads, but typically the PM peak hour traffic represents approximately 10% of daily volumes.

Q: What kind of study was done for volumes at the intersection of Cork Drive and Garden Street?

C: Collision numbers are not accurate. It is like a pyramid, with a lot of minor collisions at the bottom of the pyramid, which are not reported. The Town should have the information on the collisions that needed signs replacement.

Q: These collisions are for Garden Street with 2 lanes. Would four lanes change those conditions?

- A: Yes, likely.

Q: Is the speed limit on Cork Drive 50 km/h?

- A: Yes.

Q: Why is the speed limit 40 km/h on Fallingbrook Street and 50 km/h on Cork Drive?

- A: The default speed limit in an urban area is 50 km/h as prescribed in the Ontario Highway Traffic Act. The Town has not received a formal request to reduce the speed limit on Cork Drive.

C: It is not really a speed concern on Cork Drive – the road is too short – it is more of an acceleration issue.

Q: Will you look at lowering the speed limit on Cork Drive? What about other streets? And lowering the speed limits on other streets, for example Kilbride Drive?

- A: This approach will be considered through the study.

C: We live in the third house on the south side. I have noticed a police officer turning right and accelerating to a high speed and there was a kid crossing, which ended in a near miss. There is no reason for anyone to accelerate so fast.

Q: Why is there no enforcement?

- A: This approach will be considered through the study.

C: I witnessed people on Kilbride Drive who are not even stopping at the stop signs.

Q: We moved here in 1998. At the time it was possible to make a left turn on Taunton Road at the intersection Fallingbrook Street and Taunton Road. How long have they known that it would become restricted?

- A: The plans for Taunton Road date back to the early 2000’s. The median became necessary with the development and growth in traffic volumes.
C: There is speeding on Fallingbrook Street north towards Taunton Road, people driving faster than 70 km/h and there is no enforcement.

C: When my kids were younger and in high school, there was a lot of speeding. I talked to the police and they said “it’s your neighbours”. Then did radar and caught some people.

Q: I have heard that the Town will not use speed bumps, and I would like to know why.
   • A: This will be addressed later in the presentation.

Q: The cars on Cork Drive, we don’t know where they are coming from?
   • A: It is not possible to obtain vehicle information from licence plates.

Q: Are there plans to extend Dryden Boulevard to Thickson Road?
   • A: Extension may be considered in the longer term.

Q: The U-turn study that was done, was it just on Cork Drive?
   • A: Yes.

C: There was a traffic calming sign on Fallingbrook Street, but it got run over in the spring.

Q: Are there any new devices, like Stop signs with surveillance cameras?
   • A: Red-light cameras are the only method of electronic enforcement currently permitted in Ontario.

Q: For Cork Drive, have you determined how many school buses use the street?
   • A: Not specifically. The count data collected provides percentages of heavy vehicles, which includes trucks.

C: School buses on Cork Drive are a concern, especially when making left turns onto Garden Street when it will be widened to 4 lanes.

C: Will traffic signals at the intersection of Cork Drive and Garden Street never happen?
   • A: The intersection of Garden Street and Cork Drive is not planned to be signalized. Future justification may be based on volumes and other circumstances.
Q: Is there a regulation for space required between two traffic signals, like Garden Street at Cork Drive and at Taunton Road?

Q: Are you looking at opening up another road to Garden Street?
- A: Although an option, the Town is not planning to alter the current road pattern.

3. Prioritization of Issues and Solutions

Attendees were requested to identify their primary concern from a list provided and/or other issues raised during the meeting. Table 1 summarizes the input received.

**TABLE 1: PUBLIC PRIORITIZATION OF CONCERNS**

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Attendees were also asked to identify their preferred potential solution from the list provided. **Table 2** summarizes the results:

**TABLE 2: PUBLIC PRIORITIZATION OF POTENTIAL SOLUTIONS**

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Cork Drive Traffic Operational Review Study

Public Meeting #1
November 4, 2015
6:30 PM
Garden Street Class EA Study (Dryden Boulevard to Taunton Road)
- Widening to 4 lanes
- Multi-use path
- Southbound left turn lane
- Implementation planned for ~2019-2020
Study Background

- Turnaround Point
- Traffic Volumes
- Speed

Raised concerns about Cork Drive: Through Garden Street Class EA, Residents
Alternative Solutions for Cork Drive

- Class EA study proposed alternative solutions:
  - ✗ Reduce lane widths through bike lanes
  - ✗ Convert to right-in/right-out intersection
  - ✓ Add median to reduce lane width
Study Objectives

Drive Traffic Operational Review

Study Objectives:
- Reduce or eliminate U-turns
- Alleviate potential speeding
- Maintain connectivity and functionality
- Preserve neighbourhood environment

In response to concerns, Town initiated Cork Drive Traffic Operational Review.
Study Process

Identify Issues
- Collect Data
- Public Meeting #1 – Workshop
- Assess Problem Statement

Develop Solutions
- Identify Potential Solutions
- Assess Potential Solutions
- Provide Preliminary Recommendations

Recommend Approach
- Public Meeting #2
- Provide Final Recommendations

We are here
Existing Conditions

Traffic Volumes (October 2015)

AM Peak Hour
7:45-8:45

Mid-Day Peak Hour
11:00-12:00

PM Peak Hour
17:15-18:15

Garden Street

Cork Drive
## Existing Conditions

### Vehicle Speeds

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<tbody>
<tr>
<td></td>
<td>39 km/h</td>
<td>42 km/h</td>
<td>38 km/h</td>
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<tr>
<td>&gt;50 km/h</td>
<td>5%</td>
<td>13%</td>
<td>7%</td>
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</tbody>
</table>
Existing Conditions

- U-Turns (October 2015)
  - Include information from U-Turn survey (Oct 28-Nov 1)
Existing Conditions

Collisions (January 2005 – September 2015)

Legend: 2010 = year of collision  * = collision with injuries
Potential Measures

- Sidewalk extension
- Textured crosswalk
- Chicane
- Curb extension
Potential Measures

- Curb radius
- On-street parking
- Mini roundabout
- Compact roundabout
Potential Measures

- Traffic calmed neighbourhood sign
- Speed limit sign
- Temporary speed cushions
- Landscaping / street furniture
Potential Measures

- Public education
- Enforcement
- Radar trailer
Potential Measures

- **Restrictions:**
  - Rumble Strips
    - Noise & vibrations
  - Speed Humps/Tables
    - Response time for emergency vehicles
    - New operational problems
    - Shifting of problem to another location
    - Maintenance challenges
  - Unwarranted Traffic Controls
    - Not intended for speed control or traffic calming
    - Decreased safety
Workshop

- Identify and Prioritize Concerns
- Define Potential Solutions:
  - Speed
  - Volumes
  - Turnaround
- Specify by Location:
  - Cork Drive
  - Intersection of Cork Drive and Garden Drive
  - Intersection of Cork Drive and Fallingbrook Street
- Specify by Time:
  - Weekday vs Weekend
  - Time of day
Workshop

Identification of Concerns

- No concern
- Operations and/or safety at Cork Drive and Garden Street intersection
- Operations and/or safety at Cork Drive and Fallingbrook intersection
- Traffic volumes on Cork Drive
- Perceived traffic speeds on Cork Drive
- Safety concerns on Cork Drive
- Pedestrians crossing Cork Drive
- Cyclists using Cork Drive
- Heavy vehicles/large trucks using Cork Drive
- Conflicts between vehicles and cyclists/pedestrians on Cork Drive
- School-related traffic on Cork Drive
- Weekday morning rush hour traffic conditions on area roads
- Weekday afternoon rush hour traffic conditions on area roads
- Weekend traffic conditions on area roads
- Safety for youth travelling on Cork Drive
- On-street parking on Cork Drive
- Others concerns?
Workshop

Prioritization of Concerns

Potential solutions: what would you do?

Other Comments
Cork Drive and Garden Street
Cork Drive and Fallingbrook Street
Next Steps

- Review and analyze workshop input
- Collect any additional data
- Assess Problem Statement
- Identify and assess potential solutions
- Provide preliminary recommendations
- Public Meeting #2
  - Present potential solutions and preliminary recommendations
  - Expected date: Early 2016
Next Steps

► Please sign in to receive updates on the study
► Comments sheets also available
► Additional comments can be sent by November 18, 2015 to:

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Project Engineer
Town of Whitby
575 Rossland Road E.
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Email: gchartier@ptsl.com

Thank You!

Information is collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.
Appendix C

Public Meeting #2 Materials
Notice of Open House

2016 Road Related Construction Projects

Residents are invited to participate in an Open House to get information, ask questions and provide input on the following 2016 road related construction projects:

Road Reconstruction
1. Byron Street South (from Arthur Street to St. John Street).
2. Keith Street (from Centre Street South to Brock Street South).
3. Trent Street West (from Henry Street to Brock Street South).
4. Watson Street East (from Brock Street South to Dufferin Street).

Road Resurfacing
1. Ashburn Road
   - from Columbus Road to Brawley Road.
   - from Myrtle Road to Townline Road.
   - from Spencer’s Road to south end of Highway 407 bridge.

Intersection Improvements
1. Garrard Road/Dundas Street East Intersection (north leg).

Road Drainage Improvements
1. Bowman Avenue (from Dundas Street to Johnson Avenue).

New Sidewalk Construction
1. Baldwin Street (from Canary Street to south of Highway 407 bridge, east side).
2. Cassels Road (from Baldwin Street to Heber Down Crescent, north side).
3. Heber Down Crescent (from Vipond Road to 19 Heber Down Cres., east side).

Downtown Sidewalk Replacement and Boulevard Upgrades
1. Athol Street (from Colborne Street to Dundas Street East).
2. Dundas Street West (from Euclid Street to Byron Street).
3. Green Street (from Colborne Street to Dundas Street East).
4. Perry Street (from Dundas Street East to 150m northerly).

Cycling Facilities
1. Multi-use path on Taunton Road (from Valleywood Drive to east Town limit, north side).
2. Multi-use path on Columbus Road (from Wycombe Street to Burning Springs Place, south side).
3. Paved shoulders on Ashburn Road (from Columbus Road to Brawley Road, from Myrtle Road to Townline Road, and from Spencer’s Road to south end of Highway 407 bridge).

Major Streetlight Installations and Replacements
1. Streetlight replacement in the area bounded by Dundas Street and Rossland Road, and between Thickson Road and Hazelwood Drive/Scott Street.
2. Conlin Road (from Anderson Street to east Town limit).
3. Anderson Street (from Solmar Avenue to Conlin Road).

Open House
Location: Town of Whitby Municipal Building, 575 Rossland Road East, Whitby
Date: Tuesday, April 12, 2016
Time: 6:00pm to 8:00pm

Public Notice

Residents Invited to Open House No. 2

Cork Drive Traffic Operational Review Study
The Town is seeking resident input as it examines potential solutions to address operational and safety concerns related to Cork Drive.

Join us for Open House No. 2 to see the project findings, ask questions and have your say:

Wednesday, April 20, 2016
6:30 pm to 7:00 pm - Project Presentation
7:00 pm to 8:30 pm - Open Discussion
Town of Whitby Municipal Building, Council Chambers
575 Rossland Road East, Whitby

Public input and comments are invited throughout the study. If you have any questions or comments or wish to be added to the project mailing list, please contact:
Gene Chartier, P. Eng.
Paradigm Transportation Solutions Limited
5000 Yonge Street, Suite 1901
Toronto, Ontario M2N 7E9
Tel: 416.479.9684, extension 501
Email: gchartier@ptsl.com

Horace Look, P. Eng.
Project Engineer
Town of Whitby
Public Works Department
575 Rossland Road East
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Email: lookh@whitby.ca

The Town is undertaking a Class Environmental Assessment (Class EA) for Garden Street between Dryden Boulevard and Taunton Road. The objective of the Class EA study is to identify the existing and future transportation needs on Garden Street to accommodate the anticipated growth in Whitby. During the public consultation phase of the Class EA study, residents on Cork Drive raised concerns regarding vehicle travel speed and U-turns. As such, the Town has retained an engineering consultant, Paradigm Transportation Solutions Limited, to conduct a Traffic Operational Review Study to examine traffic operations on Cork Drive, and to identify potential mitigating measures as needed.

Public consultation is a key component of this study. Two (2) Open Houses will be held for local residents to provide input, and to discuss project issues directly with the project team. Open House No. 1 was held on November 4, 2015 to introduce the study and to obtain input from local residents regarding the traffic problems.

Open House No. 2 is intended to present the followings:
• Traffic problems identified based on input provided by local residents;
• Potential solutions to the identified problems; and
• The preferred solution through discussions with local residents.

Information will be collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. Confidentiality of personal information is assured.
Town of Whitby
Cork Drive Traffic Operational Review

Public Meeting #2

1. Presentation
   - Gene Chartier (GC) provided an overview of the study with the assistance of a PowerPoint slide presentation.
   - During the presentation, the public was given the opportunity to ask questions. Members of the Project Team in attendance – GC, Horace Look (HL) and Tara Painchaud (TP) – provided responses.

2. Question and Answer Period

   The following summarizes the questions (Q) and comments (C) received from the public and the responses (A) provided by the Project Team:

   Comments received:
   - C: Acceleration issue is becoming worse, especially with westbound drivers.
   - C: Would like to see raised crosswalks considered as part of the study.
   - C: Intersection of Cork Drive and Garden Street: having a possibility of having 2 cars side by side to exit onto Garden Street.
   - C: Residents of Cork Drive should have more influence.
   - C: Cork Drive resident: prefer option where the curb extension closest to Garden Street is on the south side.

   Q: Alternatives address mostly speed and acceleration?
   - A: Yes, difficult to affect volumes without closing Cork Drive, but Cork Drive is the primary access to the neighbourhood.

   Q: As road is narrower, wouldn’t volumes go down as well?
   - A: Some vehicles may divert if the road is narrowed.

   Q: Have you looked at putting a stop sign at Fallingbrook Drive?
   - A: The intersection of Cork Drive and Fallingbrook Drive does not meet the technical warrants (volumes) for the installation of stop control.
Q: Could there be a signal at the intersection?
  • A: The intersection of Cork Drive and Garden Street does not meet the technical warrants (volumes) for the installation of traffic control signals. Plans for the reconstruction of Garden Street are making provision for the future installation of signals, should warrants be met.

C: First, signals must be implemented as soon as Garden Street is widened. Second, people should not be allowed to make u-turns at Cork Drive when Garden Street is widened.

C: Issue is on Garden Street, not on Cork Drive. So many near-misses on Garden Street

Q: Any thought on not letting people into the plaza at Taunton Road?
  • A: Approved accesses are typically not removed. The Region of Durham is the road authority and would need to take this action.

Q: We want to restrict people coming down Garden Street, turning onto Cork Drive, and travel back up on Garden Street to the plaza. Why not put a median on Garden Street so no southbound left movements are allowed?
  • A: Cork Drive is the primary access to the neighbourhood.

C: Could go onto Taunton Road and into Fallingbrook Drive. But then issue with people turning left out of Cork Drive.

Q: What about roundabout at Garden Street?
  • A: This can be considered through the ongoing EA for Garden Street.

C: Reducing traffic on Cork Drive would mean it goes to Taunton Road then Fallingbrook Drive, then create a speeding issue. It would be opening up a raceway. Doing that would create another problem, would need to slow down traffic on Fallingbrook Drive.

Q: When Garden Street is widened to 4 lanes, it will become a bypass for Brock Street: Do you foresee the speed to increase to 60? Will we have the same problem with the second plaza further south? Garden Street needs to have some sort of traffic calming, roundabout would be a perfect example at keeping traffic moving but slowing them down.
  • A: These matters can be considered through the ongoing EA for Garden Street.
Q. Was there a separate EA for Garden Street? Why weren’t we involved?
- A: The Garden Street EA commenced several years ago. The Town issued notices of commencement and for public meetings.

Q: Two years ago, there was talk of a crosswalk going into the plaza at Meadowglen Drive. What happened?
- A: The Town examined this option through the Garden Street EA.

Q: Can the alternative restricting parking in front of 2 Cork Drive be eliminated, as the resident would like to keep a parking spot available in front of their house?
- A: Parking is not permitted within 30 m of a signalized intersection.
- C: A lot of the residents on Cork Drive chose to park on the street. And Cork Drive is not a priority for snow clearing. Taking away parking spots is not a good option.

Q: Will the parking stalls be visible with islands?
- A: The on-street parking will be designed to allow snow removal, but the quality of summer and winter maintenance could be impacted.
- C: The ideal solution is 5 lanes at Garden Street. Lights at Garden Street and Cork Drive immediately. No southbound left turn at Garden Street and Cork Drive. This configuration would eliminate the need for curb extensions and would relieve the traffic on Cork Drive. Fallingbrook Drive must also be addressed. Possibly stop signs north of Cork Drive and extending the 40 km/h on Fallingbrook Drive, with police enforcement.

Q: What will happen north of Taunton Road after Garden Street is widened to 4 lanes?
- A: Ultimately, Garden Street will be widened north to a planned new east-west arterial road.
- C: The extension of Garden Street will not connect to anything. However, Anderson Street is built for it, as it has woodland on the one
side, and houses with a backyard to the street. It would make sense to widen other streets before Garden Street.

▶ Q: Placing one speed bump in the middle of the street wouldn’t make a big difference on emergency response times, but would make a big difference for speeds. Why was it not considered?
   • A: Speed humps are not commonly used in the Town. They have been used in a few locations, but are not generally well received.

▶ Q: Are curb extensions more common?
   • A: Curb extensions are more common in the Town, specially in the downtown area. Emergency and maintenance services prefer these to vertical deflections (speed humps).

▶ Q: Can we ask the emergency services?
   • A: Yes

▶ C: My wife is a paramedic, and with a patient immobilized in the back, it is not something you want.

▶ Q: I wasn’t there in November. Was there any thought about opening another entrance to the neighbourhood?
   • A: The option was discussed, but not pursued.

▶ C: I live on Patrick Drive. I specifically didn’t want to buy on Cork Drive and paid more money for my property as a result.

▶ C: U-Turns are a huge concern. I can’t let my 9 year-old son play in the front.

▶ Q: What is the main issue? U-Turns or speeding?
   • Both are concerns, but it depends on the location.

▶ C: It is our neighbours who are speeding, how do we change that?
Cork Drive Traffic Operational Review

Public Meeting #2
April 20, 2016
6:30 PM
Study Background

- Garden Street Class EA Study (Dryden Boulevard to Taunton Road)
  - Widening to 4 lanes with path and southbound left turn lane
  - Implementation for ~2019-2020
Study Background

Through Garden Street Class EA, residents raised concerns about Cork Drive:

- Speed
- Traffic volumes
- Turnaround (U-Turn) point
In response to concerns, Town initiated Cork Drive Traffic Operational Review

Study objectives:

- Reduce or eliminate U-turns
- Alleviate potential speeding
- Maintain connectivity and functionality
- Preserve neighbourhood environment
Study Area

Anderson St

Cork Dr

Taunton Road East

Dyden Blvd

Garden St

N
Study Area

Fallingbrook Street

Garden Street

Cork Drive
Study Process

Identify Issues

• Collect Data
• Public Meeting #1 – Workshop
• Assess Problem Statement

Develop Solutions

• Identify Potential Solutions
• Assess Potential Solutions
• Provide Preliminary Recommendations

Recommend Approach

• Public Meeting #2
• Provide Final Recommendations

We are here
Existing Conditions

Traffic Volumes (October 2015)

- **AM Peak Hour** (7:45-8:45)
  - Garden Street: 612, 38
  - Cork Drive: 114, 41
  - Number of cyclists on Cork Drive, AM Peak hour: 550

- **Mid-Day Peak Hour** (11:00-12:00)
  - Garden Street: 440, 28
  - Cork Drive: 44, 26
  - Number of cyclists on Cork Drive, Mid-Day Peak hour: 522

- **PM Peak Hour** (17:15-18:15)
  - Garden Street: 569, 69
  - Cork Drive: 72, 34
  - Number of cyclists on Cork Drive, PM Peak hour: 623

Number of cyclists on Cork Drive, AM Peak hour: 550
Number of cyclists on Cork Drive, Mid-Day Peak hour: 522
Number of cyclists on Cork Drive, PM Peak hour: 623
## Existing Conditions

### Vehicle Speeds

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<tr>
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<th>Oct 2014:</th>
<th>Oct 2010:</th>
<th>June 2010:</th>
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<tbody>
<tr>
<td></td>
<td>Average: 39 km/h</td>
<td>Average: 42 km/h</td>
<td>Average: 38 km/h</td>
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<tr>
<td></td>
<td>&gt; 50 km/h: 5%</td>
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<td>&gt; 50 km/h: 7%</td>
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</table>

Oct 2014: Average: 39 km/h
> 50 km/h: 5%

Oct 2010: Average: 42 km/h
> 50 km/h: 13%

June 2010: Average: 38 km/h
> 50 km/h: 7%
Existing Conditions

U-Turns (October 2015)

Weekday
- 1,900 vehicles (24 hrs)
- 89 U-Turns
- 5% vehicles U-Turn
- Peak:
  - 17:00-19:00
  - 21 U-Turns

Weekend
- 1,900 vehicles (24 hrs)
- 77 U-Turns
- 4% vehicles U-Turn
- Peak:
  - 16:00-18:00
  - 19 U-Turns
Existing Conditions


Legend: 2010 = year of collision  * = collision with injuries
Existing Conditions

Legend:
- Exiting neighbourhood
- Entering neighbourhood
- Signalized intersection
Public Input

- Public Information Centre #1 held on November 4, 2015 at Town
- At least 30 people attended
## Priority ranking of concerns:

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<tr>
<th>Concern</th>
<th>Rank</th>
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<tr>
<td>No concern</td>
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<tr>
<td>Operations and/or safety at Cork Drive and Garden Street intersection</td>
<td>4</td>
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<tr>
<td>Traffic volumes on Cork Drive</td>
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<tr>
<td>Safety concerns on Cork Drive</td>
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<td>Operations and/or safety at Cork Drive and Fallingbrook Street intersection</td>
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<tr>
<td>Safety for youth travelling on Cork Drive</td>
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<tr>
<td>Traffic signals at the Garden Street and Cork Drive intersection (when Garden Street is widened to 4 lanes)</td>
<td>1</td>
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Public Input

- Speeding on Cork Drive, Fallingbrook Street, Kilbride Drive, Anderson Street
- Acceleration on Cork Drive
- Collisions and near misses on Cork Drive
- Residential streets should not serve as through roadways
Public Input

- Traffic signal timings at:
  - Anderson Street and Taunton Road
  - Garden Street and Dryden Boulevard

- School buses on Cork Drive and turning left at Garden Street
<table>
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<tr>
<th>Solution</th>
<th>Votes</th>
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<tr>
<td>Textured Crosswalk</td>
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<tr>
<td>Roundabout at Fallingbrook Street</td>
<td>2</td>
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<tr>
<td>Curb Extension</td>
<td>1</td>
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<tr>
<td>Enforcement</td>
<td>1</td>
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</table>
Preliminary Recommendations

- Address issues and considerations identified:
  - Acceleration on Cork Drive
  - U-Turns on Cork Drive, from Garden Street
  - Access to neighbourhood

- Nine alternatives, with sub-options and combinations
Preliminary Recommendations:

Alternative 1

- Education program for neighbourhood residents
- Use of radar trailer
- Pace car program
Preliminary Recommendations: Alternative 2

Enforcement

- Cork Drive, October 2014:
  - Average speed 39 km/h
  - >50 km/h = 5%
Preliminary Recommendations:

Alternative 3

a) Chicanes – 2 lateral shifts (no on-street parking)
Preliminary Recommendations:

Alternative 3

b) Chicanes – 1 lateral shift (no on-street parking)
Preliminary Recommendations: Alternative 4

a) Parking lane with curb extensions on north side (9 parking spaces)
Preliminary Recommendations: Alternative 4

b) Parking lane with curb extensions on south side (10 parking spaces)
Preliminary Recommendations:

Alternative 5

a) Curb extensions – intersections and midblock aligned (14 parking spaces)
Preliminary Recommendations: Alternative 5

b) Curb extensions – extended intersections and midblock offset (11 parking spaces)
Preliminary Recommendations:

Alternative 6

- Median on Cork Drive approaching intersection with Garden Street

  As suggested in Garden St EA
Preliminary Recommendations: Alternative 7

Patterned crosswalks

a) Crossing Cork Drive at intersection with Fallingbrook Street
b) Crossing Cork Drive at intersection with Garden Street
Preliminary Recommendations: Alternative 8

a) Compact roundabout at Cork Drive and Fallingbrook Street intersection
Preliminary Recommendations: Alternative 8

b) Traffic circle at Cork Drive and Fallingbrook Street intersection
Preliminary Recommendations: Alternative 9

- Traffic signal timing reviews:
  - Anderson Street & Taunton Road
  - Garden Street & Dryden Boulevard
  - Anderson Street & Dryden Boulevard
  - Fallingbrook Street & Dryden Boulevard
  - Garden Street & Taunton Road
## Preliminary Recommendations: Summary

### Options

<table>
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<tr>
<th>Options</th>
<th>Exclusive</th>
<th>Addresses acceleration on Cork Dr</th>
<th>Addresses U-Turns on Cork Dr</th>
<th>Implementation Feasibility</th>
<th>Maintains Access to Neighbourhood</th>
<th>Maintains On-Street Parking</th>
<th>Shortlist</th>
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<td>3a. Chicanes - 2 lateral shifts</td>
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<td>4a. Parking lane and curb extensions, north side</td>
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<td>5b. Curb extensions - extended intersections and midblock offset</td>
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<td>6. Median on Cork Dr approaching Garden St</td>
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<td>7a. Textured crosswalk at Cork Dr &amp; Fallingbrook St</td>
<td><img src="image" alt="Exclusive" /></td>
<td><img src="image" alt="Positive impacts" /> <img src="image" alt="Negative impacts" /></td>
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<td>7b. Textured crosswalk at Cork Dr &amp; Garden St</td>
<td><img src="image" alt="Exclusive" /></td>
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<td>8a. Compact roundabout at Cork Dr &amp; Fallingbrook St</td>
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<td>8b. Traffic circle at Cork Dr &amp; Fallingbrook St</td>
<td><img src="image" alt="Exclusive" /></td>
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<td>9. Review signal timing plans around study area</td>
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Preliminary Recommendations

- Staged implementation:
  - Stage 1:
    - Alternative 1: Education
    - Alternative 2: Enforcement
    - Alternative 9: Traffic Signal Timing Reviews
  - Stage 2 (with Garden Street Improvements):
    - Longitudinal treatment on Cork Drive
    - Alternative 7: Textured Crosswalks
Preliminary Recommendations

Longitudinal treatment on Cork Drive:

- Short list:
  - Alternative 3a: Chicanes - 2 lateral shifts
  - Alternative 3b: Chicanes - 1 lateral shift
  - Alternative 4a: Parking lane and curb extensions, north side
  - Alternative 4b: Parking lane and curb extensions, south side
  - Alternative 5a: Curb extensions - intersections and midblock aligned
  - Alternative 5b: Curb extensions - extended intersections and midblock offset
  - Alternative 6: Median on Cork Drive approaching intersection with Garden Street

- Recommended by project team:
  - Alternative 3b: Chicanes - 1 lateral shift
Preliminary Recommendations

- Combination of alternatives, Stage 1:
  - Stage 1: Education + Enforcement + Traffic Signal Timing Review
Preliminary Recommendations

- Combination of alternatives, Stage 2:
  - Chicanes (or other shortlisted option) + Textured Crosswalks
  - Timed with Garden Street improvements
Short List of Options

Alternative 3a: Chicanes - 2 lateral shifts

Pros:
- Narrower street on whole length helps reduce driving speeds
- 2 lateral shifts helps reduce driving speeds at the chicane

Cons:
- No on-street parking
- Maintenance/Snow clearing
- Some drivers may cross the centreline to maintain higher speed at chicane
- May divert traffic to other streets
- Reduced space for bicyclists
Short List of Options

Alternative 3b: Chicanes – 1 lateral shift

Pros:
- Narrower street on most of the length helps reduce driving speeds
- 1 lateral shift helps reduce driving speeds at the chicane
- Reduced pedestrian crossing distance at intersection with Fallingbrook

Cons:
- No on-street parking
- Maintenance/Snow clearing
- Some drivers may cross the centreline to maintain higher speed at chicane
- May divert traffic to other streets
- Reduced space for bicyclists
- Larger vehicles may need to cross the centreline at intersections

Recommended Option
Short List of Options

▶ Alternative 4a: Parking lane with curb extensions on north side

▶ Pros:
  – Narrower street on whole length helps reduce driving speeds
  – Maintains on-street parking (9 spaces)
  – Reduced pedestrian crossing distance at intersections

▶ Cons:
  – Larger vehicles may need to cross the centreline at intersections
  – Maintenance/Snow clearing
  – Reduced space for bicyclists
Short List of Options

Alternative 4b: Parking lane with curb extensions on south side

Pros:
- Narrower street on whole length helps reduce driving speeds
- Maintains on-street parking (10 spaces)
- Reduced pedestrian crossing distance at intersections

Cons:
- Larger vehicles may need to cross the centreline at intersections
- Maintenance/Snow clearing
- Reduced space for bicyclists
Short List of Options

Alternative 5a: curb extensions – intersections and midblock aligned

Pros:
- Narrower street at intersections and midpoint helps reduce driving speeds
- Maintains on-street parking (14 spaces)
- Reduced pedestrian crossing distance at intersections

Cons:
- Relies on parked vehicles to narrow the driving space
- Larger vehicles may need to cross the centreline at intersections
- Maintenance/Snow clearing
- Reduced space for bicyclists
Short List of Options

Alternative 5b: Curb extensions – extended intersections and midblock offset

Pros:
- Narrower street for part of the length helps reduce driving speeds
- Maintains on-street parking (11 spaces)
- Reduced pedestrian crossing distance at intersections

Cons:
- Relies on parked vehicles to narrow the driving space
- Larger vehicles may need to cross the centreline at intersections
- Maintenance/Snow clearing
- Reduced space for bicyclists
Short List of Options

- Alternative 6: Median on Cork Drive approaching intersection with Garden Street

**Pros:**
- Narrower space for in/out movements on Cork Drive at intersection of Garden Street
- Maintains on-street parking

**Cons:**
- Does not address accelerations and speeding on the rest of the street
Next Steps

- Review and analyze consultation input
- Develop final recommendation
- Draft report
- Town Council approval
- Implementation
Next Steps

- Please sign in to receive updates on the study
- Comments sheets also available
- Additional comments can be sent by May 6, 2016 to:

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  Email: gchartier@ptsl.com

Thank You!

Information is collected in accordance with the Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record.
Appendix D

Conceptual Drawings of Stand-Alone Options
Alternative 5 A
Curb Extensions with Two (2) Lateral Shifts

Figure D.1
Alternative 5 B
Curb Extensions with Two (2) Lateral Shifts

Figure D.2
Alternative 6 A

Curb Extensions with One (1) Lateral Shift

Figure D.3
Alternative 6 B
Curb Extensions with One (1) Lateral Shift

Figure D.4
Figure D.5

Alternative 7A
Curb Extensions on One (1) Side
Alternative 7 B
Curb Extensions on One (1) Side

Figure D.6
Alternative 8

Curb Extensions on Both Sides with Parking

Figure D.7
Figure D.8: Alternative 9
Median at Garden Street