

# City of Saskatoon

## **Holliston Neighbourhood Traffic Review**



January 13, 2015

Transportation & Utilities Department

## **Acknowledgements**

The completion of this review would not be possible without the contribution of the following organizations and individuals:

- Holliston residents
- Holliston Community Association
- Saskatoon Police Service
- Saskatoon Light & Power
- City of Saskatoon Fire Department
- City of Saskatoon Environmental Services
- City of Saskatoon Transit
- City of Saskatoon Transportation
- Great Works Consulting
- Councillor Charlie Clark

## Executive Summary

The objective of the Neighbourhood Traffic Management Program is to address traffic concerns within neighbourhoods such as speeding, shortcutting, and pedestrian safety. The program was revised in August 2013 to address traffic concerns on a neighbourhood-wide basis. The revised program involves additional community and stakeholder consultation that provides the environment for neighbourhood residents and City staff to work together in developing solutions that address traffic concerns. The process is outlined in the *Traffic Calming Guidelines and Tools*, City of Saskatoon, 2013.

A public meeting was held in March of 2014 to identify traffic concerns and potential solutions within the Holliston neighbourhood. As a result of the meeting a number of traffic assessments were completed to confirm and quantify the concerns raised by the residents. Based on the residents input and the completed traffic assessments, a Traffic Management Plan was developed and presented to the community at a follow-up meeting held in October 2014.

A summary of recommended improvements for the Holliston neighbourhood are included in **Table ES-1**. The summary identifies the locations, the recommended improvement, and a schedule for implementation. The schedule to implement the Traffic Management Plan can vary depending on the complexity of the proposed improvement. According to the *Traffic Calming Guidelines and Tools* document, the time frame may range from short-term (1 to 2 year); medium-term (3 to 5 years) and long-term (5 years plus). Accordingly, the specific time frame to implement the improvements for these neighbourhoods ranges from 1 to 5 years.

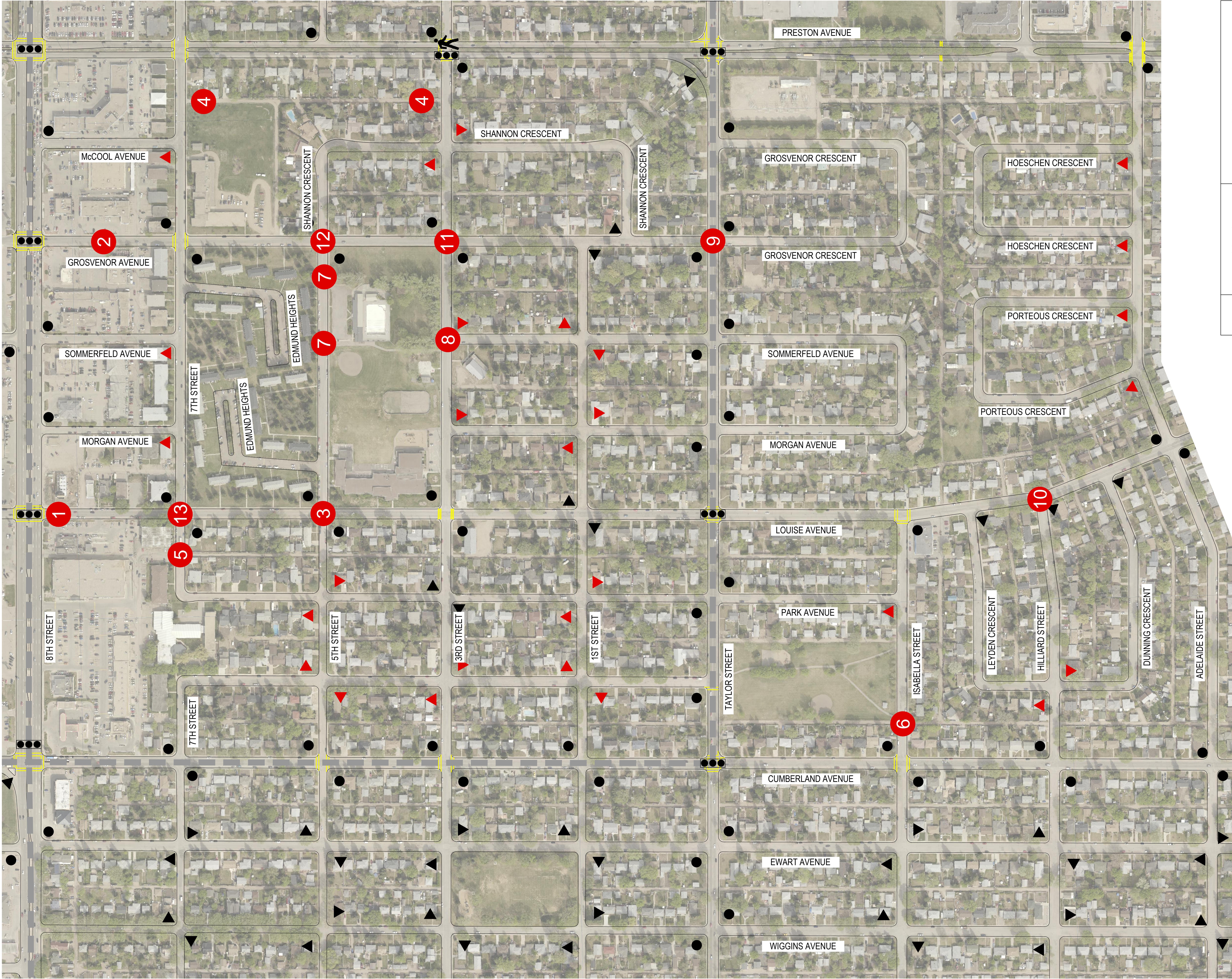
The resulting proposed Holliston Traffic Management Plan is illustrated in **Exhibit ES-1**.



**Table ES-1: Holliston Neighbourhood Recommended Improvements**

Location	Recommended Improvement	Time Frame
Louise Avenue (20m south of 8th Street)	"No parking" sign on west side	1 to 2 years
Grosvenor Avenue (beside The Keg & Jerry's access)	"No parking" signs 5m on either side	
Louise Avenue & 5th Street	"No parking" signs on Louise Avenue (10m on southwest corner, 15m on northwest corner)	
Back Lane (between 7th / 3rd Streets & Preston / Grosvenor Avenues)	20kph speed signs	
Back Lane (behind Sobeys & beside 1615 - 7th Street E)	"Local Traffic Only" sign, 20kph speed sign & stop sign	
Isabella Street near Canon Smith Park	Playground sign	
5th Street between Louise Avenue & Grosvenor Avenue	Playground signs	
3rd Street & Sommerfeld Avenue	Standard crosswalk (west leg)	
Taylor Street & Grosvenor Avenue	Zebra crosswalks; "no parking" sign 15m on Taylor Street (southwest corner)	
All uncontrolled intersections	Yield signs	
Louise Avenue & Hilliard Street	Raised median island (south leg)	3 to 5 years (traffic calming devices will be installed temporarily until proven effective)
Grosvenor Avenue & 3rd Street	Raised median islands & zebra crosswalks	
Grosvenor Avenue & 5th Street	Zebra crosswalk, curb extension & Raised median island (south leg)	
Louise Avenue & 7th Street	Zebra crosswalk (north leg); Raised median islands (north & south leg); "no parking" sign (northeast corner of Louise Avenue to fire hydrant - approximately 20m)	





LEGEND

- EXISTING STOP SIGN
- ▼ EXISTING YIELD SIGN
- ▲ PROPOSED YIELD SIGN
- BUS ROUTE
- EXISTING TRAFFIC SIGNAL
- ▲ PEDESTRIAN ACTUATED SIGNAL LOCATION

ITEM	LOCATION	PROPOSED MEASURE
1	Louise Ave (20m south of 8th Street)	"No parking" sign on west side
2	Grosvenor Ave (beside The Keg & Jerry's access)	"No parking" signs 5m on either side
3	Louise Ave & 5th Street	"No parking" signs on Louise Ave (10m on southwest corner, 15m on northwest corner)
4	Back Lane (between 7th/3rd St & Preston/Grosvenor Ave)	20kph speed sign
5	Back Lane (behind Sobeys & beside 1615 -7th St E	"Local Traffic Only" sign, 20kph speed sign & stop sign
6	Isabella St near Canon Smith Park	Playground sign

ITEM	LOCATION	PROPOSED MEASURE
7	5th St between Louise Ave & Grosvenor Ave	Playground sign
8	3rd St & Sommerfeld Ave	Standard crosswalk (west leg)
9	Taylor St & Grosvenor Ave	Zebra crosswalks, "no parking" sign 15m on Taylor Street(southwest corner)
10	Louise Ave & Hilliard Street	Median island (south leg)
11	Grosvenor Ave & 3rd Street	Median islands & zebra crosswalks
12	Grosvenor Ave & 5th Street	Zebra crosswalk, curb extension & median island (south leg)
13	Louise Avenue & 7th Street	Zebra crosswalk (north leg), median islands (north & south leg), "no parking" sign (northeast corner of Louise Ave to fire hydrant - approximately 20m)
14	All uncontrolled intersections	Yield signs



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## 1. Introduction

The purpose of this project was to develop a Traffic Management Plan for the Holliston neighbourhood following the implementation procedure outlined in the *City of Saskatoon Traffic Calming Guidelines and Tools* adopted by City Council in August 2013.

The Holliston neighbourhood is located on the east side of the South Saskatchewan River and is bound by Preston Avenue to the east, 8<sup>th</sup> Street East to the north, Adelaide Street to the south, and Wiggins Avenue / Cumberland Avenue to the west. The area use is mostly residential, with a commercial area on the north end along 8<sup>th</sup> Street. Schools in the area include Holliston School (Louise Avenue, 3<sup>rd</sup> Street, and 5<sup>th</sup> Street). Parks in the area include Holliston Park (Grosvenor Avenue, 3<sup>rd</sup> Street, and 5<sup>th</sup> Street), Wiggins Park (Wiggins Avenue, Ewart Avenue, 1<sup>st</sup> Street, and 3<sup>rd</sup> Street), Jeffery Park, and Canon Smith Park (Taylor Street and Isabella Street).

The development and implementation of the traffic management plan includes four stages:

- **Stage 1** - Identify existing problems, concerns and possible solutions through the initial neighbourhood consultation and the Shaping Saskatoon Website.
- **Stage 2** - Develop a draft traffic plan based on resident's input and traffic assessments.
- **Stage 3** - Present the draft traffic plan to the neighbourhood at a follow-up meeting; circulate the plan to other civic divisions for feedback; make adjustments as needed; and present the plan to City Council for approval.
- **Stage 4** - Implement the proposed measures in specific time frame, short-term (1 to 2 years), medium-term (1 to 5 years) or long-term (5 years plus).

## 2. Identifying Issues, Concerns, & Possible Solutions

A public meeting was held in March of 2014 to identify traffic concerns within the neighbourhood. At the meeting, residents were given the opportunity to express their concerns and suggest possible solutions.

The following pages summarize the concerns and suggested solutions identified during the initial consultation with the neighbourhood residents.

## CONCERN 1 – SPEEDING AND SHORTCUTTING

Shortcutting occurs when non-local traffic passes through the neighbourhood on local streets which are designed and intended for low volumes of traffic. In the case of Holliston, the bordering arterial streets (8th Street and Preston Avenue) and intersecting arterial street (Taylor Street) are designated to accommodate larger volumes of traffic.

As speeding often accompanies shortcutting, these concerns have been grouped into one category.

### **Neighbourhood concerns for speeding and shortcutting were at the following locations:**

- Preston Avenue
- Louise Avenue
- Taylor Street: motorists are driving as if there are two lanes instead of one; speed and heavy traffic flow between Preston Avenue & Cumberland Avenue
- Isabella Street near park; between Cumberland Avenue to Louise Avenue
- Grosvenor Avenue
- Cumberland Avenue
- Shannon Crescent: shortcutting to avoid Taylor Street / Preston Avenue intersection
- Dunning Crescent
- Hilliard Street
- Adelaide Street
- Jackson Avenue
- 5<sup>th</sup> Street near park
- 7<sup>th</sup> Street: shortcutting to access 8<sup>th</sup> Street; speeding along Park Avenue and Jackson Avenue Back lane east of Louise Avenue between Taylor Street & Adelaide Street; shortcutting to avoid traffic signal at Taylor Street & Louise Avenue; speeding near Jeffery Park
- Sommerfeld Avenue (& 3<sup>rd</sup> Street): George Ward Pool and Holliston School; speeding through uncontrolled intersections
- Back lanes near Shannon Crescent / Preston Avenue & 3<sup>rd</sup> Street / 7<sup>th</sup> Street
- Back lanes near Canon Smith Park
- Back lane by Sobeys

**Proposed solutions identified by residents:**

- Speed humps (including locations near parks and around curves)
- Better coordination of traffic signals on 8<sup>th</sup> Street to prevent shortcutting on 7<sup>th</sup> Street
- 4-way stop



## CONCERN 2 - PEDESTRIAN SAFETY & ACTIVE TRANSPORTATION

A majority of the residents were concerned about pedestrian safety surrounding school sites (Holliston School), parks (Canon Smith Park), and the George Ward Pool.

Pedestrian crosswalks need to adhere to the City of Saskatoon Council Policy C07-018 *Traffic Control at Pedestrian Crossings*, November 15, 2004 which states the following:

“The installation of appropriate traffic controls at pedestrian crossings shall be based on warrants listed in the document entitled “Traffic Control at Pedestrian Crossings – 2004” approved by City Council in 2004.”

### **Neighbourhood concerns regarding pedestrian safety were at the following locations:**

- Preston and 3<sup>rd</sup> Street: no need for pedestrian-actuated signal
- Grosvenor Avenue & 3<sup>rd</sup> Street: children cross on their way to Holliston School & park
- Isabella Street: near park
- 5<sup>th</sup> Street: near pool
- Need a crossing on 8<sup>th</sup> Street between Clarence Avenue & Cumberland Avenue
- Louise Avenue: disregard for pedestrians; unsafe for cyclists
- Taylor Street: children crossing to pool/schools; driver stops for pedestrian and driver passes on right nearly hitting them; unsafe for cyclists
- Larger intersections where drivers can pass on the right

### **Proposed solutions identified by residents:**

- Install “while children present” sign with school zone sign rather than time restrictions
- City should initiate a public “share the road” campaign
- Remove school zone speed reduction from high schools
- Install barriers near high schools to prevent jaywalking
- Traffic calming devices at intersections so drivers can’t pass on right

### CONCERN 3 - TRAFFIC CONTROL

Traffic control signs are used in order to assign the right-of-way and must meet guidelines in City of Saskatoon Council Policy C07-007 *Traffic Control – Use of Stop and Yield Signs*, January 26, 2009 which states that stop and yield signs are not to be used as speed control devices, to stop priority traffic over minor traffic, on the same approach to an intersection where traffic signals are operational, or as a pedestrian crossing device.

An all-way stop must meet the conditions for traffic volume, collision history, and must have a balanced volume from each leg to operate sufficiently.

**Neighbourhood concerns regarding traffic control improvements were at following locations:**

- 1<sup>st</sup> Street: proposed yield signs between Louise Avenue and Grosvenor Avenue will cause speeding
- Southbound left turn needed at 8<sup>th</sup> Street and Cumberland Avenue
- Drivers failing to yield at uncontrolled intersections (i.e. Jackson Avenue)
- 7<sup>th</sup> Street & Louise Avenue
- Grosvenor Avenue & 3<sup>rd</sup> Street
- Shannon Crescent & 3<sup>rd</sup> Street
- Louise Avenue & 8<sup>th</sup> Street
- Grosvenor Avenue & 8<sup>th</sup> Street: left lane is unserviceable

**Proposed solutions identified by residents:**

- Alter direction of yield signs on 1<sup>st</sup> Street between Louise Avenue & Grosvenor Avenue
- Install protected left turn arrow at Louise Avenue & 8<sup>th</sup> Street

## CONCERN 4 – PARKING

Parking is allowed on all city streets unless signage is posted. According to City of Saskatoon Bylaw 7200, *The Traffic Bylaw*, December 16, 2013, vehicles are restricted from parking within 10 metres of an intersection and one metre of a driveway crossing.

**Neighbourhood concerns regarding parking were at the following locations:**

- Taylor Street: parking near St. Stevens Church impedes traffic flow
- Cumberland Avenue: parked cars obstruct driver's view
- Grosvenor Avenue: parked cars obstruct driver's view at driveways to businesses (i.e. The Keg, Jerry's)
- 5<sup>th</sup> Street: parked longer than legal time
- Louise Avenue: parking near McDonalds obstructs right-turning traffic from 8<sup>th</sup> Street



## **CONCERN 5 – MAINTENANCE**

A majority of the residents were concerned about the condition of the streets in Holliston (i.e. snow clearing, potholes, tree trimming, and temporary traffic calming devices).

**Neighbourhood concerns regarding maintenance were at the following locations:**

- Preston Avenue: snow banks need to be lower on medians near intersections to improve sightlines (especially near Adelaide Street)
- Shrubs on boulevards obstruct driver's view

### 3. Assessment

Stage 2 of the plan development included developing a draft traffic management plan. This was completed through the following actions:

- Create a detailed list of all the issues provided by the residents.
- Collect historical traffic data and information the City has on file for the neighbourhood.
- Prepare a data collection program that will provide the appropriate information needed to undertake the assessments.
- Complete the data collection, which may include:
  - Intersection turning moving counts
  - Pedestrian counts
  - Daily and weekly traffic counts
  - Average speed measurements
- Assess the issues by using the information in reference with City policies, bylaws, and guidelines, transportation engineering design guidelines and technical documents, and professional engineering judgement.

The following sections provide details on the data collected for traffic volumes (peak hours, daily, and weekly), travel speed, and pedestrian movements.

#### 1. Traffic Volumes and Travel Speeds

Traffic volumes and travel speeds were measured to assist in determining the need for traffic calming devices. In Saskatoon the neighbourhood streets are classified typically as either local or collector streets. Traffic volumes (referred to as Average Daily Traffic) on these streets should meet the City of Saskatoon guidelines shown in **Table 3-1**.

**Table 3-1: City of Saskatoon Street Classifications and Characteristics**

Characteristics	Classifications					
	Back Lanes		Locals		Collectors	
	Residential	Commercial	Residential	Commercial	Residential	Commercial
Traffic function	Access function only (traffic movement not a consideration)		Access primary function (traffic movement secondary consideration)		Traffic movement and land access of equal importance	
Average Daily Traffic (vehicles per day)	<500	<1,000	<1,000	<5,000	<5,000	8,000-10,000
Typical Speed Limits (kph)	20		50		50	
Transit Service	Not permitted		Generally avoided		Permitted	
Cyclist	No restrictions or special facilities		No restrictions or special facilities		No restrictions or special facilities	
Pedestrians	Permitted, no special facilities		Sidewalks on one or both sides	Sidewalks provided where required	Typically sidewalks provided both sides	Sidewalks provided where required
Parking	Some restrictions		No restrictions or restriction on one side only		Few restrictions other than peak hour	

Travel speeds were measured to determine the 85th percentile speed, which is the speed at which 85 percent of vehicles are travelling at or below. The speed limit in the Holliston area is 50kph, except for school zones where the speed limit is 30kph from September and June, 8:00am to 5:00pm, excluding weekends.

The speed studies and Average Daily Traffic (ADT) on streets where speeding was identified as an issue are summarized in **Table 3-2**.



**Table 3-2: Speed Studies and Average Daily Traffic Counts (2014)**

Street	Between	Classification	Average Daily Traffic (vpd)	Speed (kph)
Back lane east of Canon Smith Park	Taylor Street & Isabella Street	lane	10	NA
Back Lane north of 7th Street	Sobeys & apartment buildings		548	26.8
Isabella Street	Park Avenue & Cumberland Avenue	local	434	45.5
Grosvenor Avenue	3rd Street & 5th Street		688	48
5th Street	Louise Avenue & Grosvenor Crescent		327	45.6
Adelaide Street	Louise Avenue & Preston Avenue		782	45.6
Park Avenue	5th Street & 7th Street		466	NA
5th Street	Park Avenue & Jackson Avenue		729	36.9
Louise Avenue	Leyden Crescent & Hilliard Street	major collector	2358	51.3
Taylor Street	Sommerfeld Avenue & Grosvenor Avenue	minor arterial	8300	53.9

## 2. Turning Movement Counts

Turning movement counts were completed to determine the need for an all-way (i.e. 3-way or 4-way) stop control. All-way stop controls need to meet City of Saskatoon Council Policy C07-007 *Traffic Control – Use of Stop and Yield Signs*, January 26, 2009. Criteria outlined in the policy that may warrant an all-way stop include a peak hour count greater than 600 vehicles or an ADT greater than 6,000 vehicles per day. Results of the studies are shown in **Table 3-3**.

**Table 3-3: All-way Stop Assessments**

Location	Peak Hour Traffic Count	Average Daily Traffic (vpd)	Results
Louise Avenue & 7th Street	486	5630	All-way Stop Not Warranted
Grosvenor Avenue & 3rd Street	190	2090	

As a result of the assessment there are no an all-way stop controls recommended. Details of the all-way stop assessments are provided in **Appendix A**.

### 3. Pedestrian Assessments

Pedestrian assessments are conducted to determine the need for pedestrian actuated signalized crosswalks which, in adherence to the City of Saskatoon Council Policy C07-018 *Traffic Control at Pedestrian Crossings*, November 15, 2004, are typically active pedestrian corridor (flashing yellow lights) or pedestrian-actuated signals. A warrant system assigns points for a variety of conditions that exist at the crossing location, including:

- The number of traffic lanes to be crossed;
- the presence of a physical median;
- the posted speed limit of the street;
- the distance the crossing point is to the nearest protected crosswalk point; and
- the number of pedestrian and vehicles at the location.

Pedestrian and traffic data is collected during the five peak hours of: 8:00am-9:00am, 11:30am-1:30pm, and 3:00pm-5:00pm.

In addition, if a pedestrian actuated crosswalk is not warranted, a standard marked pedestrian crosswalk, or a zebra (i.e. striped crosswalk) may be considered. A summary of the pedestrian studies are provided in **Table 3-4**.

**Table 3-4: Pedestrian Assessment**

Location	Number of Pedestrians Crossing	Results
Taylor Street & Sommerfeld Avenue	8	Pedestrian Device Not Warranted
Louise Avenue & 7th Street E	78	
Grosvenor Avenue & 3rd Street	22	

As a result of the assessment, no pedestrian devices are recommended. Details of the pedestrian device assessments are provided in **Appendix B**.

#### **4. Plan Development**

Stage 3 of the project included finalizing the recommended plan. This was achieved by completing the following steps:

- Based on the assessments, prepare a plan that illustrates the appropriate recommended improvement
- Present the draft plan to the residents at a follow-up public meeting
- Circulate the draft plan to the Civic Divisions for comment
- Revise the draft plan based on feedback from the stakeholders
- Prepare a technical document summarizing the recommended plan and project process

The tables in the following sections provide the details of the recommended traffic management plan, including the location, recommended improvement, and the justification of the recommended improvement.

##### 1. Shortcutting and Speeding

Traffic volume and the 85<sup>th</sup> percentile speed were higher than expected in the back lane south of the Sobeys grocery store (north of 7<sup>th</sup> Street). Speeding in the back lanes between 7<sup>th</sup> Street / 3<sup>rd</sup> Street and Preston Avenue / Grosvenor Avenue was also a concern. The recommended improvements and justification to address speeding and shortcutting are detailed in **Table 4-1**.

**Table 4-1: Recommended Improvements to Reduce Speeding and Shortcutting**

<b>Location</b>	<b>Recommended Improvement</b>	<b>Justification</b>
Back Lane (behind Sobeys & beside 1615 - 7th Street E)	Install "Local Traffic Only", 20kph speed sign, & stop sign (facing back lane)	Reduce shortcutting; enhance compliance (southbound)
Back Lane (between 7 <sup>th</sup> / 3rd Streets & Preston / Grosvenor Avenues)	Install 20kph speed limit signs	Reduce speeds in back lane

## 2. Pedestrian Safety

Holliston residents identified pedestrian safety as a priority near Holliston School, George Ward Pool, and various parks. The safety of the pedestrian environment near schools is important to encourage people to walk to school, as opposed to being dropped off. Accordingly, the recommended improvements to increase pedestrian safety are detailed in **Table 4-2**.

**Table 4-2: Recommended Pedestrian Safety Improvements**

Location	Recommended Improvement <sup>1</sup>	Purpose
Louise Avenue & 7th Street	Install zebra crosswalk (north side); install Raised median islands (north & south leg); install "no parking" sign on northeast corner of Louise Avenue to fire hydrant (approximately 20m)	Improve pedestrian safety; reduce speeds; enhance visibility
Grosvenor Avenue & 5th Street	Install zebra crosswalk; install curb extension & Raised median island (south leg)	Improve pedestrian safety near school & park; reduce speeds
5th Street between Louise Avenue & Grosvenor Avenue	Install playground signs	Improve pedestrian safety
3rd Street & Sommerfeld Avenue	Install standard pedestrian crosswalk (west leg)	Improve pedestrian safety near school & connecting to park path
Grosvenor Avenue & 3rd Street	Install Raised median islands & zebra crosswalks (north & south legs)	Improve pedestrian safety near school & park; reduce speeds
Taylor Street & Grosvenor Avenue	Install zebra crosswalk (east & west legs); install "no parking" sign 15m on Taylor Street (southwest corner)	Improve pedestrian safety; enhance visibility
Louise Avenue & Hilliard Street	Install Raised median island (south leg)	Improve pedestrian safety; reduce speed
Isabella Street near Canon Smith Park	Install playground sign	Improve pedestrian safety

<sup>1</sup> For details on these devices refer to the *City of Saskatoon Traffic Calming Guidelines and Tools*

### 3. Traffic Control

The recommended improvements to intersections that will improve the level of safety by clearly identifying the right-of-way through traffic controls are provided in **Table 4-3**.

**Table 4-3: Recommended Traffic Control Improvements**

Location	Recommended Improvement	Purpose
All uncontrolled intersections	Install yield signs (Stop & Yield Retrofit Program)	Improve safety; enhance driver compliance
1st Street & Sommerfeld Avenue	Install east-west yield signs	Ensure 1st Street is not a thoroughfare

The Traffic Control Neighbourhood Retrofit Program was initiated in 2008 as a pilot project in City Park. Yield signs were installed at all uncontrolled intersections to mitigate collisions. Collision history results have shown to be favourable with an overall reduction in collision frequency; therefore, the program was expanded to other neighbourhoods. Holliston was selected in 2014 based on a high average number of collisions per uncontrolled intersection per year.

During the public consultation a yield sign plan for the area was shown to the residents. Residents were concerned about speeding caused by the proposed orientation of the yield signs at 1<sup>st</sup> Street and Sommerfeld Avenue. The plan was altered accordingly.



#### 4. Parking Improvements

The recommended improvements to parking will improve the level of safety at specific intersections by enhancing sightlines. Further details are provided in Table 4-4.

**Table 4-4: Recommended Parking Improvements**

Location	Recommended Improvement	Purpose
Louise Avenue (20m south of 8th Street)	Install "no parking" sign on west side	Improve traffic flow; enhance sightlines
Grosvenor Avenue (beside The Keg & Jerry's access)	Install "no parking" signs 5m on either side	Enhance sightlines to and from access to parking lots
Louise Avenue & 5th Street	Install "no parking" signs on Louise Avenue (10m on southwest corner; 15m on northwest corner)	Enhance sightlines

#### 5. Major Intersection Reviews

The mandate for the Neighbourhood Traffic Management Reviews is to focus on neighbourhood streets such as local roads and collector roads. As almost all neighbourhoods are bound by arterial streets, such as 8<sup>th</sup> Street or Preston Avenue, it is not uncommon to have residents raise issues regarding these streets. However, arterial streets are much more complex than local or collector streets due to larger traffic volumes, different types of drivers (commuters), coordinated traffic signals, transit accommodation, and potentially many commercial accesses. To properly address these, the typical transportation engineering approach would require a corridor study or a major intersection review, both of which are expensive and requires significant resources. Through the Neighbourhood Traffic Reviews, the City is compiling a list of issues on arterial streets. The Transportation Division is working to prioritize the issues, identify the work requirements, and securing funding to complete these types of assessments.

#### Follow up Consultation – Presentation of Traffic Management Plan

The initial recommended improvements were presented at a follow-up public meeting in October 2014. Recommended improvements that were not supported by the residents were eliminated or altered accordingly. A decision matrix detailing the list of recommended improvements included in the draft traffic plan (and comments received

during the follow-up consultation) is displayed in **Appendix C**. A decision matrix detailing additional comments received during the follow-up consultation is also displayed in **Appendix C**.

The following table displays a list of the improvements that were adjusted based on the feedback received at the October 2014 follow up meeting.

**Table 4-5: Adjusted Recommended Improvements**

Location	Improvement	Reason	Resident feedback	Decision
Back Lane (behind Sobeys & beside 1615 - 7th Street E)	Install "Local Traffic Only" sign	Reduce shortcutting	Address speeding issues.	Add stop sign (exiting back lane) & 20kph speed sign
Grosvenor Avenue (beside The Keg & Jerry's access)	Install "no parking" signs 4m on either side	Improve sightlines	Increase distance to further improve sightlines	Increase distance to 5m on either side.
Grosvenor Avenue & 3rd Street	Install Raised median islands (north & south legs)	Improve pedestrian safety	More improvements needed to enhance pedestrian safety (near park, pool, school etc)	Add zebra crosswalks
Louise Avenue & Isabella Street	Install Raised median island (south leg)	Reduce speeds; improve pedestrian safety	Isabella isn't a good location for a Raised median island; pedestrian safety isn't an issue here; drivers will stop for pedestrians as is; Raised median island will only force drivers towards sidewalks; there's a mailbox where people stop nearby daily; ponding occurs in spring and drivers avoid it by driving into centre of roadway; Raised median island would restrict movements	Move Raised median island to Hilliard Street (one block south) to reduce speeds on Louise Avenue
1st Street & Sommerfeld Avenue	Install north-south yield signs (part of Stop & Yield Retrofit Program)	Clearly identify right-of-way; enhance compliance	Orientation of proposed yield signs on 1st Avenue had 3 blocks of north-south facing yields. Residents were concerned this would create speeding/thoroughfare.	Switch yield signs at 1st Street & Sommerfeld Avenue to prevent thoroughfare on 1st Street

After finalizing the plan it was circulated to the Civic Divisions to review. No concerns were received.

## **5. Recommended Plan and Cost Estimates**

Stage 4, the last stage of the process, is to install the recommended improvements for the Holliston neighbourhood within the specified timeframe. The timeframe depends upon the complexity and cost of the solution. A short term time frame is defined by implementing the improvements within 1 to 2 years; medium-term is 3 to 5 years; and long-term is 5 years plus.

The placement of pedestrian and traffic control signage will be completed short-term (1 to 2 years).

All traffic calming measures will be installed temporarily using rubber curbing until proven effective, and will be implemented short-term (1 to 2 years).

Permanent traffic calming often includes removing the temporary barriers and reconstructing with concrete. The timeline for permanent traffic calming may depend on the complexity of the device and the availability of funding; therefore the timeline is medium-term (3 to 5 years).

The estimated costs of the improvements included in the Neighbourhood Traffic Management Plan are outlined in the following tables:

- **Table 5-1:** Traffic Calming Cost Estimate
- **Table 5-2:** Marked Pedestrian Crosswalks Cost Estimate
- **Table 5-3:** Traffic Control Signage – Stop & Yield Cost Estimate
- **Table 5-4:** Miscellaneous Signage Cost Estimate

**Table 5-1: Traffic Calming Cost Estimate**

Location	Traffic Calming Device (s)	Cost Estimate		Time Frame
		Temporary	Permanent	
Louise Avenue & Hilliard Street	1 Raised median island	\$500	\$6,000	3 to 5 years
Grosvenor Avenue & 3rd Street	2 Raised median islands	\$1,000	\$12,000	
Grosvenor Avenue & 5th Street	1 Curb extension & 1 Raised median island	\$1,000	\$36,000	
Louise Avenue & 7th Street	2 Raised median islands	\$1,000	\$12,000	
Total		\$3,500	\$66,000	

Temporary traffic calming will be installed in 2015 and will be monitored to determine its effectiveness. If proven effective, the devices will be made permanent. Until they are made permanent, the devices will remain temporary and maintained on a yearly basis. An estimated cost for maintenance is about \$5,000 per year. The maintenance typically involves the replacement of damage curbs as result of the winter snow removal, damage from vehicle impact, etc.

**Table 5-2: Marked Pedestrian Crosswalks Cost Estimate**

Location	Devices (s)	Cost Estimate	Time Frame
3rd Street & Sommerfeld Avenue	Standard crosswalk	\$1,200	1 to 2 years
Taylor Street & Grosvenor Avenue	Zebra crosswalks	\$1,600	
Grosvenor Avenue & 3rd Street	Zebra crosswalks	\$1,600	
Grosvenor Avenue & 5th Street	Zebra crosswalk	\$1,400	
Louise Avenue & 7th Street	Zebra crosswalk	\$1,400	
Total		\$7,200	

The operating impact on an annual basis to maintain a painted crosswalk is approximately \$60 each.

**Table 5-3: Traffic Control Signage – Stop & Yield Cost Estimate**

Location	Device (s)	Number of Signs	Cost Estimate	Time Frame
All uncontrolled intersections	Yield signs	28	\$7,000 (Funded through Stop & Yield Retrofit Program)	1 to 2 years
Back Lane (behind Sobeys & beside 1615 - 7th Street E)	Stop sign	1	\$250	
Total			\$250	

**Table 5-4: Miscellaneous Signage Cost Estimate**

Location	Device (s)	Number of Signs	Cost Estimate	Time Frame
Louise Avenue (20m south of 8th Street)	"No parking" sign	1	\$250	1 to 2 years
Grosvenor Avenue (beside The Keg & Jerry's access)	"No parking" signs	2	\$500	
Louise Avenue & 5th Street	"No parking" signs	2	\$500	
Back Lane (between 7th/3rd Street & Preston/Grosvenor Avenue)	20kph speed signs	2	\$500	
Back Lane (behind Sobeys & beside 1615 - 7th Street E)	"Local Traffic Only" sign & 20kph speed sign	2	\$500	
Isabella Street near Canon Smith Park	Playground sign	1	\$250	
5th Street between Louise Avenue & Grosvenor Avenue	Playground signs	2	\$500	
Taylor Street & Grosvenor Avenue	"No parking" sign	1	\$250	
Louise Avenue & 7th Street	"No parking" sign	1	\$250	
Total			\$3,500	

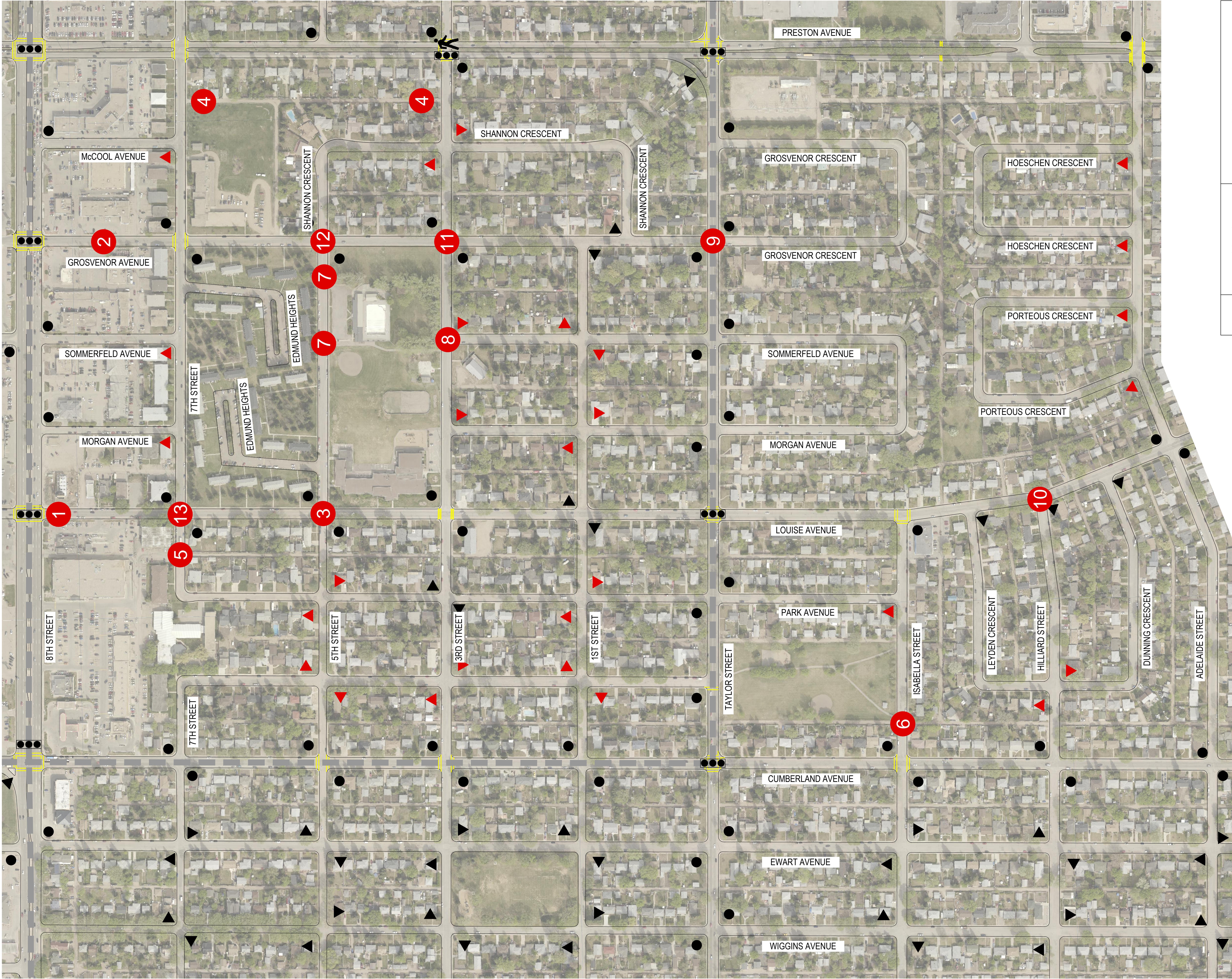
The total cost estimate for the signage and temporary traffic calming devices to be installed in 2015 is **\$14,450**. The yield sign installations will be funded through the Stop & Yield Retrofit Program (\$7,000). The total cost estimate, including the installation of permanent traffic calming is **\$80,450**.

Resulting from the plan development process, the recommended improvements, including the location, type of improvement, and schedule for implementation are summarized in **Table 5-5**. The resulting recommended Holliston Traffic Management Plan is illustrated in **Exhibit 5-1**.

**Table 5-5: Holliston Neighbourhood Recommended Improvements**

Location	Recommended Improvement	Time Frame
Louise Avenue (20m south of 8th Street)	"No parking" sign on west side	1 to 2 years
Grosvenor Avenue (beside The Keg & Jerry's access)	"No parking" signs 5m on either side	
Louise Avenue & 5th Street	"No parking" signs on Louise Avenue (10m on southwest corner, 15m on northwest corner)	
Back Lane (between 7th / 3rd Streets & Preston/Grosvenor Avenues)	20kph speed signs	
Back Lane (behind Sobeys & beside 1615 - 7th Street E)	"Local Traffic Only" sign, 20kph speed sign & stop sign	
Isabella Street near Canon Smith Park	Playground sign	
5th Street between Louise Avenue & Grosvenor Avenue	Playground signs	
3rd Street & Sommerfeld Avenue	Standard crosswalk (west leg)	
Taylor Street & Grosvenor Avenue	Zebra crosswalks; "no parking" sign 15m on Taylor Street (southwest corner)	
All uncontrolled intersections	Yield signs	
Louise Avenue & Hilliard Street	Raised median island (south leg)	3 to 5 years (traffic calming devices will be installed temporarily until proven effective)
Grosvenor Avenue & 3rd Street	Raised median islands & zebra crosswalks	
Grosvenor Avenue & 5th Street	Zebra crosswalk, curb extension & raised median island (south leg)	
Louise Avenue & 7th Street	Zebra crosswalk (north leg); raised median islands (north & south leg); "no parking" sign (northeast corner of Louise Avenue to fire hydrant - approximately 20m)	





LEGEND

- EXISTING STOP SIGN
- ▼ EXISTING YIELD SIGN
- ▲ PROPOSED YIELD SIGN
- BUS ROUTE
- EXISTING TRAFFIC SIGNAL
- ▲ PEDESTRIAN ACTUATED SIGNAL LOCATION

ITEM	LOCATION	PROPOSED MEASURE
1	Louise Ave (20m south of 8th Street)	"No parking" sign on west side
2	Grosvenor Ave (beside The Keg & Jerry's access)	"No parking" signs 5m on either side
3	Louise Ave & 5th Street	"No parking" signs on Louise Ave (10m on southwest corner, 15m on northwest corner)
4	Back Lane (between 7th/3rd St & Preston/Grosvenor Ave)	20kph speed sign
5	Back Lane (behind Sobeys & beside 1615 -7th St E	"Local Traffic Only" sign, 20kph speed sign & stop sign
6	Isabella St near Canon Smith Park	Playground sign

ITEM	LOCATION	PROPOSED MEASURE
7	5th St between Louise Ave & Grosvenor Ave	Playground sign
8	3rd St & Sommerfeld Ave	Standard crosswalk (west leg)
9	Taylor St & Grosvenor Ave	Zebra crosswalks, "no parking" sign 15m on Taylor Street(southwest corner)
10	Louise Ave & Hilliard Street	Median island (south leg)
11	Grosvenor Ave & 3rd Street	Median islands & zebra crosswalks
12	Grosvenor Ave & 5th Street	Zebra crosswalk, curb extension & median island (south leg)
13	Louise Avenue & 7th Street	Zebra crosswalk (north leg), median islands (north & south leg), "no parking" sign (northeast corner of Louise Ave to fire hydrant - approximately 20m)
14	All uncontrolled intersections	Yield signs



## **Appendix A**

### All Way Stop Assessments

## All-way Stop Assessment (Policy C07-007 – Traffic Control – Use of Stop & Yield Signs)

The following conditions must be met for all-way stop control to be considered:

- i) The combined volume of traffic entering the intersection over the five peak hour periods from the minor street must be at least 25% of the total volume for a three-way stop control, and at least 35% of the total volume for a four-way stop control.
- ii) There can be no all-way stop control and traffic signal within 200 metres of the proposed intersection being considered for all-way stop control on either of the intersecting streets.

Location	Condition 1: Combined volume of traffic entering intersection from minor street is at least 25% for 3-way stop or 35% for 4-way stop	Condition 2: There can be no all-way stop or traffic signal within 200m	Results
Louise Avenue & 7th Street	30% - Condition NOT met	170m from traffic signal at 8 <sup>th</sup> Street – Condition NOT met	Conditions not met therefore all-way stop NOT warranted
Grosvenor Avenue & 3rd Street	34% - Condition NOT met	No all-way stop or traffic signals within 200m – Condition met	Since Condition 1 is only 1% less than requirement check additional warrant criteria.

Provided the above criteria are met, the following conditions, singly or in combination, may warrant the installation of all-way stop signs:

- i) When five or more collisions are reported in the last twelve month period and are of a type susceptible to correction by an all-way stop control.
- ii) When the total number of vehicles entering the intersection from all approaches averages at least 600 per hour for the peak hour or the total intersection entering volume exceeds 6,000 vehicles per day.
- iii) The average delay per vehicle to the minor street traffic must be 30 seconds or greater during the peak hour.
- iv) As an interim measure to control traffic while arrangements are being made for the installation of traffic signals.

Location	Criteria 1: 5 or more collisions in last twelve months	Criteria 2: at least 600 vehicles per peak hour OR 6,000 vehicles per day	Criteria 3: average delay per vehicle greater than 30sec during peak hour	Criteria 4: Interim for traffic signals	Results
Grosvenor Ave & 3rd Street	1 collision – Criteria NOT met	190 peak hour, 2,090 – Criteria NOT met	Below 30sec – Criteria NOT met	No plans for traffic signals – Criteria NOT met	All-way stop NOT warranted

## **Appendix B**

### Pedestrian Device Assessments



## Pedestrian device assessment (Traffic Controls at Pedestrian Crossing, 2004)

Taylor Street & Sommerfeld Avenue:

<b>1. Lanes Priority Points:</b>			
L =	2	lanes	= number of lanes.
LANF =	0.0	points	= (L-2) x 3.6 to a max of 15 points, urban x-section only.
<b>2. Median Priority Points:</b>			
MEDF =	6.0	points	= indicating there is no physical median here.
<b>3. Speed Priority Points:</b>			
S =	50	kph	= speed limit or 85th percentile speed.
SPDF =	6.7	points	= (S-30) / 3 to a maximum of 10 points.
<b>4. Pedestrian Protection Location:</b>			
D =	210	m	= distance from study location to nearest protected crosswalk.
LOCF =	0.8	points	= (D-200) / 13.3 to a maximum of 15 points.
<b>5. Pedestrian/Vehicle Volume Priority Points:</b>			
H =	5.0		= ( hours ) duration of counting period.
Ps =	8.0		= total number of children, teenagers, seniors and/or impaired counted.
Pa =	0.0		= total number of adults counted.
Pw =	12.0		= weighted average of pedestrians crossing the main street.
Pcm =	2.4		= weighted average hourly pedestrian volume crossing the main street.
V =	3855.0		= volume of traffic passing through the crossing(s).
Vam =	771.0		= average hourly volume of traffic passing through the crossing(s).
VOLF =	3.7	points	= Vam x Pcm / 500
<b>6. Satisfaction of Installation Criteria:</b>			
SUMF =	( LANF + MEDF + SPDF + LOCF + VOLF )		
=	17	points	
(P.A. Signal Warrant Points)			

**The total of the warrant points is less than 100 indicating that a pedestrian actuated signal is NOT warranted.**

Louise Avenue & 7<sup>th</sup> Street:

<b>1. Lanes Priority Points:</b>			
L =	2	lanes	= number of lanes.
LANF =	0.0	points	= (L-2) x 3.6 to a max of 15 points, urban x-section only.
<b>2. Median Priority Points:</b>			
MEDF =	6.0	points	= indicating there is no physical median here.
<b>3. Speed Priority Points:</b>			
S =	50	kph	= speed limit or 85th percentile speed.
SPDF =	6.7	points	= (S-30) / 3 to a maximum of 10 points.
<b>4. Pedestrian Protection Location:</b>			
D =	165	m	= distance from study location to nearest protected crosswalk.
LOCF =	0.0	points	= (D-200) / 13.3 to a maximum of 15 points.
<b>5. Pedestrian/Vehicle Volume Priority Points:</b>			
H =	5.0		= ( hours ) duration of counting period.
Ps =	78.0		= total number of children, teenagers, seniors and/or impaired counted.
Pa =	0.0		= total number of adults counted.
Pw =	117.0		= weighted average of pedestrians crossing the main street.
Pcm =	23.4		= weighted average hourly pedestrian volume crossing the main street.
V =	0.0		= volume of traffic passing through the crossing(s).
Vam =	0.0		= average hourly volume of traffic passing through the crossing(s).
VOLF =	0.0	points	= Vam x Pcm / 500
<b>6. Satisfaction of Installation Criteria:</b>			
SUMF =	( LANF + MEDF + SPDF + LOCF + VOLF )		
=	13	points	
(P.A. Signal Warrant Points)			

**The total of the warrant points is less than 100 indicating that a pedestrian actuated signal is NOT warranted.**



Grosvenor Avenue & 3rd Street:

<b>1. Lanes Priority Points:</b>			
L =	2	lanes	= number of lanes.
LANF =	0.0	points	= (L-2) x 3.6 to a max of 15 points, urban x-section only.
<b>2. Median Priority Points:</b>			
MEDF =	6.0	points	= indicating there is no physical median here.
<b>3. Speed Priority Points:</b>			
S =	50	kph	= speed limit or 85th percentile speed.
SPDF =	6.7	points	= (S-30) / 3 to a maximum of 10 points.
<b>4. Pedestrian Protection Location:</b>			
D =	225	m	= distance from study location to nearest protected crosswalk.
LOCF =	1.9	points	= (D-200) / 13.3 to a maximum of 15 points.
<b>5. Pedestrian/Vehicle Volume Priority Points:</b>			
H =	5.0		= ( hours ) duration of counting period.
Ps =	22.0		= total number of children, teenagers, seniors and/or impaired counted.
Pa =	0.0		= total number of adults counted.
Pw =	33.0		= weighted average of pedestrians crossing the main street.
Pcm =	6.6		= weighted average hourly pedestrian volume crossing the main street.
V =	812.0		= volume of traffic passing through the crossing(s).
Vam =	162.4		= average hourly volume of traffic passing through the crossing(s).
VOLF =	2.1	points	= Vam x Pcm / 500
<b>6. Satisfaction of Installation Criteria:</b>			
SUMF =	( LANF + MEDF + SPDF + LOCF + VOLF )		
=	17	points	
(P.A. Signal Warrant Points)			

**The total of the warrant points is less than 100 indicating that a pedestrian actuated signal is NOT warranted.**

## **Appendix C**

### Recommendation Review Matrix

Decision Matrix – Recommendations proposed at initial meeting

Item	Location	Recommendation	Group 1	Group 2	Group 3	Group 4	Additional letters, phone calls, emails	Decision
1	Back Lane (behind Sobeys & beside 1615 - 7th Street E)	Install "Local Traffic Only" sign	more than just sign	speeding in back lanes (Shannon to Grosvenor)	(50/50)needs to more restrictive; stop sign for southbound; turn is narrow due to garbage bin; slippery in winter and lane is sloped downhill southbound; Tim Hortons causes a lot of traffic; not in favour of full restriction			Carried. Add stop sign (facing back lane) & 20kph speed limit sign.
2	Louise Avenue (20m south of 8th Street)	Install "no parking" sign on west side	make sure McDonalds staff is aware of changes; trim shrubs to improve sightlines					Carried.
3	Louise Avenue & 7th Street	Install zebra crosswalk (north side); install raised median islands (north & south leg); install "no parking" sign on northeast corner of Louise Avenue to fire hydrant (approximately 20m)						Carried.
4	Grosvenor Avenue (beside The Keg & Jerry's access)	Install "no parking" signs 4m on either side	increase to 6m					Carried. Increase distance to 5m.
5	Back Lane (between 7th/3rd Street & Preston/Grosvenor Avenue)	Install 20kph speed limit signs	investigate further measures		in favour but consider something more restrictive; enforcement		also install "local traffic only" sign to emphasize the dual statements of "slow down" & "this is not a thoroughfare"	Carried. "Local traffic only" signs not recommended because these are residential/not a route to commercial
6	Grosvenor Avenue & 5th Street	Install zebra crosswalk; install curb extension & Raised median island (south leg)						Carried.
7	5th Street between Louise Avenue & Grosvenor Avenue	Install playground signs	install 30kph signs around park					Carried. Comment noted for city-wide review (park/playground speed 30kph speed zone)
8	Louise Avenue & 5th Street	Install "no parking" signs on Louise Avenue (10m on southwest corner; 15m on northwest corner						Carried.
9	3rd Street & Sommerfeld Avenue	Install standard pedestrian crosswalk (west leg)						Carried.
10	Grosvenor Avenue & 3rd Street	Install raised median islands (north & south legs)	add zebra crosswalk & curb extension					Carried. Add zebra crosswalks. Curb extensions not necessary with addition of raised median islands.

Item	Location	Recommendation	Group 1	Group 2	Group 3	Group 4	Additional letters, phone calls, emails	Decision
11	Taylor Street & Grosvenor Avenue	Install zebra crosswalk (east & west legs); install "no parking" sign 15m on Taylor St (southwest corner)	no parking south all way & tree trim					Carried. Additional parking removal not recommended due to church.
12	Louise Avenue & Isabella Street	Install raised median island (south leg)					Isabella isn't a good location for a raised median island; pedestrian safety isn't an issue here; drivers will stop for pedestrians as is; raised median island will only force drivers towards sidewalks; there's a mailbox where people stop nearby daily; ponding occurs in spring and drivers avoid it by driving into centre of roadway; raised median island would restrict movements; if speeding on Louise is a concern then move it to Hilliard because this is where speeding is worst	Move raised median island to Louise Avenue & Hilliard Street
13	Isabella Street near Canon Smith Park	Install playground sign						Carried.
14	All uncontrolled intersections	Install yield signs	3rd Street & Shannon Crescent - flip yield signs; 1st Street has two intersections back-to-bacl which may create speeding	5th Street - yield signs should be reversed			Having yield signs for the north-south streets off 3rd Street may help reduce collisions, but it won't slow the traffic down on 3rd. Although there are only two blocks between Preston and Grosvenor on 3rd, cars can (and do) get going very fast very quickly on that part of the street. Having the yield signs oriented east-west might result in slower overall speeds on 3rd.	Carried. 1st Street & Sommerfeld Avenue changed to east-west facing to continue alternating pattern as part of the Stop & Yield Retrofit Program. Yield signs at Shannon Crescent and 3rd Street will remain north-south to continue alternating pattern (must stop on 3rd Street at Grosvenor Avenue only 105m from Shannon Crescent)

Decision Matrix – Additional comments

Item	Location	Concern	Decision
1	Back lane east of Louise between Taylor Street & Adelaide Street	Shortcutting to avoid traffic signal at Taylor & Louise; speeding near Jeffrey Park; install speed humps in north-south & east-west lane near Jeffrey Park	Rejected. Traffic Signal at Taylor Street & Louise Avenue is satisfactory. Speed humps are not used in back lanes.
2	School zones/playgrounds	Use "while children present" rather than time restrictions	Noted. Will be included in city-wide review for reduced speeds around parks & playgrounds.
3	Back lanes near Shannon Crescent to Grosvenor Avenue	Speeding	Rejected. Residential area.
4	7th Street along Park/Jackson	Speed humps around curve leading to 5th Street	Rejected. Speed humps not recommended on curves.
5	8th Street & Cumberland Avenue	Southbound left turn required	Noted. Will be included in major intersection reviews.
6	Preston Avenue & 3rd Street	Review pedestrian-actuated signal; no need for it, timing, U-turns	Timing was reviewed and is satisfactory. U-turns are illegal at and signalized intersection as per Bylaw 7200.
7	NA	Larger intersections - issue with drivers passing on right	Noted.
8	NA	public "share the road" campaign	Noted.
9	School zones around high schools (ie. Walter Murray, Aden Bowman)	Remove school zone speed reduction from high schools	Noted. Will be reviewed as part of city-wide review for reduced speeds around parks & playgrounds.
10	High schools	Install barriers to prevent jaywalking	Rejected. Administration will continue to monitor the situation.