CITY OF SASKATOON 2015 NEIGHBOURHOOD TRAFFIC REVIEWS

Confederation Park

February 12, 2016

Confederation Park Neighbourhood Traffic Review

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Authorization

Prepared By:



Justine Nyen, P.Eng.,

Transportation Engineer

Checked By:



Shirley Matt, P.Eng.,

Senior Transportation Engineer

Acknowledgements

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

- Confederation Park residents
- Confederation Park Community Association
- Saskatoon Police Service
- Saskatoon Light & Power
- Saskatoon Fire Department
- City of Saskatoon Environmental Services
- City of Saskatoon Transit
- City of Saskatoon Planning & Development
- City of Saskatoon Public Works
- City of Saskatoon Community Standards
- City of Saskatoon Transportation
- Great Works Consulting
- Councillor Anne Iwanchuk

Cover Photograph Kara Toews

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 May of 2015 to identify traffic concerns and potential solutions within the Confederation Park 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 2015.

A summary of recommended improvements for the Confederation Park 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 Confederation Park Traffic Management Plan is illustrated in **Exhibit ES-1**.

Item	Location	Recommendation	Justification
1	33 rd Street & Byng Avenue	Standard pedestrian crosswalk (west leg)	Improve pedestrian safety
2 Diefenbaker Drive & Centennial Drive		Add hazard board to stop sign; install oversized pedestrian signs; add zebra crosswalk to south leg with additional pedestrian signs; install 15m parking restriction on northwest corner (on Diefenbaker Drive)	Enhance driver compliance; improve pedestrian safety; improve visibility
3	33 rd Street & Tilley Avenue	Zebra pedestrian crosswalk (west leg)	Improve pedestrian safety
4	John A. MacDonald Road & Steeves Avenue	Change yield sign to stop sign	Improve intersection safety along bus route (as per Policy C07-007: Traffic Control Signs - Use of Stop & Yield Signs, stop signs are warranted along bus routes).
5	Diefenbaker Drive (all intersections between Centennial Drive & Steeves Avenue)	Parking enforcement	Improve driver visibility at intersections
6	Steeves Avenue & 33 rd Street (north intersection)	Add name blade on right side	Improve visibility of street name sign
7	Steeves Avenue between Carter Crescent (north) & Carter Crescent (south)	Speed display board	Reduce speed
8	John A. McDonald Road - in front of Confederation Park School	Send speed data to Police Services to consider enforcement during school hours	Reduce speed near school
9	Diefenbaker Drive, Confederation Drive, 33 rd Street	Send speed data to Police Services to consider enforcement during peak hours	Reduce speed

Table ES-1: Confederation Park Neighbourhood Recommended Improvements





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LIST OF EXHIBITS

1 INTRODUCTION

As the City of Saskatoon continues to grow many neighbourhoods face growing issues such as pedestrian safety, cut-through traffic, and increased speeds on local roads within neighbourhoods. In August 2013, City Council adopted the *City of Saskatoon Traffic Guidelines and Tools* that outlined a procedure for completing traffic reviews on a neighbourhood-wide basis. Prior to this neighbourhood traffic issues were dealt with on a case-by-case basis with mixed results. Since 2013 the formal process has proven to be very successful in providing recommendations that improve neighbourhood traffic conditions and pedestrian safety that were developed by the Administration and residents in collaborative fashion. Accordingly, this report provides the traffic management plan for Confederation Park.

The Confederation Park neighbourhood is located on the west side of the South Saskatchewan River and is bound by Diefenbaker Drive to the south, Confederation Drive to the east, 33rd Street to the north, and Steeves Avenue (including all Crescents on the west side of Steeves Avenue) to the west. The area use is mostly residential, with elementary schools (Confederation Park School on John A. MacDonald School and Bishop Roborecki School on Diefenbaker Drive), and some commercial land use along Diefenbaker Drive.

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 (3 to 5 years) or long-term (5 years plus).

This report present the study findings and recommendations.

2 IDENTIFYING ISSUES, CONCERNS, AND POSSIBLE SOLUTIONS

A public meeting was held in May of 2015 to identify traffic concerns within the neighbourhood. At the meeting, residents were given the opportunity to express their concerns and suggest possible solutions. The meeting minutes are provided in **Appendix A**.

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

2.1 Concern 1 – Speeding and Shortcutting

Shortcutting occurs when non-local traffic passes through the neighbourhood on streets that are designed and intended for low volumes of traffic (i.e. local streets). In the case of Confederation Park, the bordering arterial street (33rd Street, Diefenbaker Drive, Confederation Drive) is designated to accommodate larger traffic volumes.

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

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

- Steeves Avenue
- Diefenbaker Drive
- 33rd Street
- Byng Avenue
- Confederation Drive
- John A. MacDonald Road
- Back lanes:
 - East of 3710 Diefenbaker Drive (near church)

Proposed solutions identified by residents:

Enforcement

2.2 Concern 2 – Pedestrian Safety

It is important to address pedestrian safety concerns to support active transportation. Walking to nearby amenities, as opposed to driving, reduces traffic volumes.

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:

- 33rd Street & Tilley Avenue
- 33rd Street & Hughes Drive
- Diefenbaker Drive & Centennial Drive
- Confederation Drive:
 - o John A. MacDonald Road
 - o Milton Street
 - o Massey Drive

Proposed solutions identified by residents:

- Install standard or zebra pedestrian crosswalk
- Install activated pedestrian device

2.3 Concern 3 – Traffic Control

Traffic control signs are used in order to assign the right-of-way. City of Saskatoon Council Policy C07-007 *Traffic Control – Use of Stop and Yield Signs*, April 26, 2009 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 controls were at the following locations:

- 33rd Street & Hughes Drive
- Diefenbaker Drive & Centennial Drive
- 33rd Street & "new" 33rd Street (eastbound)

Proposed solutions identified by residents:

- Install four-way stop
- Install traffic signals

2.4 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:

- Steeves Avenue
- Diefenbaker Drive
- 33rd Street & "new" 33rd Street

Proposed solutions identified by residents:

- Parking restrictions
- Parking enforcement

2.5 Concern 5 – Maintenance

Condition of the streets in Confederation Park was identified as a concern (i.e. snow clearing, potholes, tree trimming, and temporary traffic calming devices).

Neighbourhood concerns regarding maintenance were:

- Snow clearing (Steeves Avenue)
- Mud on streets (Meighen Crescent)

3 ASSESSMENT

3.1 Methodology

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 studies 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
 - o Pedestrian counts
 - Daily and weekly traffic counts
 - o 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 judgment.

The following sections provide details on the data collected for traffic volumes (peak hours, daily, and weekly), travel speed, and pedestrian movements. A map of the traffic data collection is shown in **Appendix B**.

3.2 Travel 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**.

	Classifications						
Characteristics	Back Lanes		Locals		Collectors		
	Residential	Commercial	Residential	Commercial	Residential	Commercial	
Access function only (trafficTraffic functionmovement not aconsideration)		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 p	ermitted	Generally avoided		Permitted		
Cyclist		ons or special ilities	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			

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

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 Confederation Park neighbourhood 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**.

Street	Between	Class	Average Daily Traffic (vpd)	Speed (kph)
Back lane	East of 3710 Diefenbaker Drive	lane	>100	NA
Byng Avenue	33rd Street & John A. MacDonald Road	local	1,115	44
Steeves Avenue	John A. MacDonald Road & Shea Crescent		4,174	50.1
Steeves Avenue	Carter Crescent & Whelan Crescent	major collector	4,555	50.3
John A. MacDonald Road (school zone)	Dominion Crescent & Cartier Crescent		2,001	school= 43.5; regular= 48.8
Diefenbaker Drive	Fisher Crescent (west) & Fisher Crescent (east)		5,680	57.5
Diefenbaker Drive	Douglas Crescent (west) & Douglas Crescent (east)	minor arterial	8,400	65.8
33rd Street	Byng Avenue & Latrace Road		5,425	60.6
Confederation Drive	Borden Place & Massey Drive	major NA arterial		57.9

Table 3-2: Speed Studies and Average Daily Traffic Counts (2015)

3.3 Traffic Control Assessments

Yield, stop, and all-way stop controls need to the meet City of Saskatoon Council Policy C07-007 *Traffic Control – Use of Stop and Yield Signs*, January 26, 2009.

Turning movement counts were completed to determine the need for an all-way (i.e. three-way or four-way) stop control. Criteria outlined in Council Policy C07-007 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 or 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.

Further conditions that must be met for an all-way stop to be warranted are:

- 1. Traffic entering the intersection from the minor street must be at least 35% for a four-way stop and 25% for a three-way stop.
- 2. No other all-way stop or traffic signals within 200m.

Results of the studies are shown in Table 3-3.

Location	Peak Hour Count	Average Daily Traffic (vpd)	# of Collisions within most recent 12 months	% of Traffic from minor street	Traffic Signals or all-way stop within 200m	All-Way Stop Warranted
Centennial Drive & Diefenbaker Drive	1,718	19,080	1	19%	no	AH 347
33 rd Street & Hughes Drive	699	8,490	0	21%	no	All-Way Stop Not Warranted
33rd Street & Tilley Avenue	644	7,160	0	9%	no	wananteu

Table 3-3: All-Way Stop Assessments

Details of the all-way stop assessments are provided in Appendix C.

3.4 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:

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

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

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

Location	Number of Pedestrians Crossing During Peak Hours	Results
Confederation Drive & Massey Drive	46	Pedestrian Device Warranted (Pedestrian Activated Signal is on
Confederation Drive & Milton Street	147	priority list at Confederation Drive & Milton Street. This intersection is only 330 metres from Massey Drive, therefore only one of the two locations will receive pedestrian device.)
33 rd Street & Tilley Avenue	12	
Centennial Drive & Diefenbaker Drive	15	
33 rd Street & Hughes Drive	7	Pedestrian Device Not Warranted
Confederation Drive & John A. MacDonald Road	6	
John A. MacDonald Road & Cartier Crescent (west)	155	

Table 3-4: Pedestrian Assessment

Details of the pedestrian actuated signal and active pedestrian corridor assessments are provided in **Appendix D**.

3.5 Traffic Signal Assessments

Assessments are conducted to determine the need for traffic signals, in adherence to the Traffic Signal and Pedestrian Signal Head Warrant Handbook. A warrant system assigns points for a variety of conditions, including:

- Number of traffic lanes;
- posted speed limit of the street;
- distance to the nearest protected traffic signal; and
- number of pedestrian and vehicles at the location.

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

If a traffic signal is not warranted, additional measures to improve safety (i.e. parking restrictions, oversized stop signs) may be considered. A summary of the traffic signal assessment are provided in **Table 3-4**.

Table 3-5: Traffic Signal Assessments

Location	Traffic Signal Warrant Points	Results
Centennial Drive & Diefenbaker Drive	88	Traffic Signal Not Warranted

Details of the traffic signal assessments are shown in **Appendix E**.

3.6 Collision Analysis

The most recently available five year collision statistics (2009 to 2013) were provided by SGI. High-collision locations, typically noted as the locations with an average of two or more collisions per year, were reviewed in more depth to identify trends. These include:

- Confederation Drive & Massey Drive
- Diefenbaker Drive & Centennial Drive
- Confederation Drive & John A. MacDonald Road
- Confederation Drive & Milton Street
- Diefenbaker Drive & Steeves Avenue
- Confederation Drive & Confederation Crescent (north)

Details of the collision analysis are provided Appendix F.

4 PLAN DEVELOPMENT

4.1 Methodology

Stage 3 of the review 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.

4.2 Speeding and Shortcutting

As stated in Council Policy C07-007 *Traffic Control* – Use of Stop and Yield Signs, January 26, 2009, "stop signs are <u>not</u> to be used as speed control devices."

The recommended improvements to address speeding and shortcutting are detailed in Table 4-1.

Table 4-1: Recommended Speeding and Shortcutting Improvements

Location	Recommended Improvement	Justification
Steeves Avenue between Carter Crescent (north) & Carter Crescent (south)	Speed display board	Reduce speed
John A. McDonald Road - in front of Confederation Park School	Send speed data to Police Services to consider enforcement during school hours	Reduce speed near school
Diefenbaker Drive, Confederation Drive, 33rd Street	Send speed data to Police Services to consider enforcement during peak hours	Reduce speed

4.3 Pedestrian Safety

The recommended improvements to increase pedestrian safety are detailed in Table 4-2.

Table 4-2: Recommended Pedestrian Safety Improvements

Location	Recommended Improvement	Justification
33 rd Street & Byng Avenue	Standard pedestrian crosswalk (west leg)	Improve pedestrian safety (school route)
Diefenbaker Drive & Centennial Drive	Install oversized pedestrian signs; add zebra crosswalk to south leg with additional pedestrian signs	Improve pedestrian safety
33 rd Street & Tilley Avenue	Zebra pedestrian crosswalk (west leg)	Improve pedestrian safety (school route)

4.4 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	Justification
Diefenbaker Drive & Centennial Drive	Add hazard board to stop sign	Enhance visibility of stop sign & driver compliance
John A. MacDonald Road & Steeves Avenue	Change yield sign to stop sign	Improve intersection safety along bus route (as per Policy C07-007: Traffic Control Signs - Use of Stop & Yield Signs, stop signs are warranted along bus routes)

4.5 Parking Improvements

The recommended improvements to parking that will improve the level of safety are detailed in **Table 4-4**.

Table 4-4: Recommended Parking Improvements

Location	Recommended Improvement	Justification
Diefenbaker Drive (all intersections between Centennial Drive & Steeves Avenue)	Parking enforcement	Improve driver visibility at intersections
Diefenbaker Drive & Centennial Drive	Install 15m parking restriction on northwest corner (on Diefenbaker Drive)	Improve driver visibility

4.6 Miscellaneous Improvements

Visibility of street name signs, and other miscellaneous signs, were identified as a concern during the public consultation. The recommended improvements for miscellaneous signs are detailed in **Table 4-5**.

Table 4-5: Recommended Parking Improvements

Location	Recommended Improvement	Justification
Steeves Avenue & 33 rd Street (north intersection)	Add name blade on right side	Improve visibility of street name sign

4.7 Follow Up Consultation – Presentation of Traffic Management Plan

The initial recommended improvements were presented at a follow-up public meeting in November 2015. Meeting minutes are provided in **Appendix A.** Recommended improvements that were not supported by the residents were eliminated or altered accordingly. A decision matrix detailing the list of recommended improvements presented at the follow-up meeting are included in **Appendix G**. A decision matrix for additional comments received after the draft traffic plan is also included in **Appendix G**.

The recommendations were circulated to the Civic Divisions (including Saskatoon Police Service, Saskatoon Light & Power, Saskatoon Fire Department, Environmental Services, and Saskatoon Transit) to gather comments and concerns. General support was received.

4.8 Major Intersection Reviews and Corridor Studies

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 Confederation Drive and 33rd Street, 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 require 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 secure funding to complete these types of assessments.

5 RECOMMENDED PLAN & COST ESTIMATES

Stage 4, the last stage of the process, is to install the recommended improvements for the Confederation Park 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 signage will be completed short-term (1 to 2 years).

Major intersection reviews are based on the number of other locations to be reviewed city wide and the availability of funding. The timeline for review will be 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: Traffic Control Signs Cost Estimate
- Table 5-3: Pedestrian Safety Signs Cost Estimate
- Table 5-4: Miscellaneous Signs Cost Estimate
- Table 5-5: Total Cost Estimate

Location	Device	Cost Estimate		Time Frame	
Location	Device	Temporary	Permanent	Time Flame	
Steeves Avenue between Carter Crescent (north) & Carter Crescent (south)	Speed display board	\$1,500	\$5,000		
John A. McDonald Road - in front of Confederation Park School	Send speed data to Police Services to consider enforcement during school hours	\$0	\$0	1 to 2 years	
Diefenbaker Drive, Confederation Drive, 33 rd Street	Send speed data to Police Services to consider enforcement during peak hours	\$0	\$0		
	Totals	\$1,500	\$5,000		

Table 5-1: Traffic Calming Cost Estimate

Location	Recommended Improvement	Number of Signs	Cost Estimate	Time Frame
Diefenbaker Drive & Centennial Drive	Add hazard board to stop sign	1	\$250	
John A. MacDonald Road & Steeves Avenue	Change yield sign to stop sign	1	\$250	1 to 2 years
Totals		2	\$500	

Table 5-3: Pedestrian Safety Signs Cost Estimate

Location	Device	Cost Estimate	Time Frame
33 rd Street & Byng Avenue	Standard pedestrian crosswalk (west leg)	\$500	
Diefenbaker Drive & Centennial Drive	Install oversized pedestrian signs; add zebra crosswalk to south leg with additional pedestrian signs	\$1,000	1 to 2 years
33 rd Street & Tilley Avenue	Zebra pedestrian crosswalk (west leg)	\$500	
	Totals	\$2,000	

Table 5-4: Miscellaneous Signs Cost Estimate

Location	Device	Number of Signs	Cost Estimate	Time Frame
Diefenbaker Drive (all intersections between Centennial Drive & Steeves Avenue)	Parking enforcement	NA	\$0	
Diefenbaker Drive & Centennial Drive	"No Parking" sign	1	\$250	1 to 2 years
Steeves Avenue & 33rd Street (north intersection)	Street name sign	1	\$250	
	Totals	2	\$500	

Category	Signing & Temporary Traffic Calming	Permanent
Traffic Calming	\$1,500	\$5,000
Traffic Control Signs	\$500	\$0
Pedestrian Signs	\$2,000	\$0
Miscellaneous Signs	\$500	\$0
Totals	\$4,500	\$5,000

Table 5-5: Total Cost Estimate

The total cost estimate for the signage and temporary traffic calming to be installed in 2016 is **\$4,500**. The total cost estimate for the installation of future permanent devices is **\$5,000**.

Resulting from the plan development process, the recommended improvements, including the location, type of improvement, and schedule for implementation are summarized in **Table 5-6**. The resulting recommended Confederation Park neighbourhood Traffic Management Plan is illustrated in **Exhibit 5-1**.

Item	Location	Recommendation	Justification
1	33 rd Street & Byng Avenue	Standard pedestrian crosswalk (west leg)	Improve pedestrian safety
2	Diefenbaker Drive & Centennial Drive	Add hazard board to stop sign; install oversized pedestrian signs; add zebra crosswalk to south leg with additional pedestrian signs; install 15m parking restriction on northwest corner (on Diefenbaker Drive)	Enhance driver compliance; improve pedestrian safety; improve visibility
3	33 rd Street & Tilley Avenue	Zebra pedestrian crosswalk (west leg)	Improve pedestrian safety
4	John A. MacDonald Road & Steeves Avenue	Change yield sign to stop sign	Improve intersection safety along bus route (as per Policy C07-007: Traffic Control Signs - Use of Stop & Yield Signs, stop signs are warranted along bus routes).
5	Diefenbaker Drive (all intersections between Centennial Drive & Steeves Avenue)	Parking enforcement	Improve driver visibility at intersections
6	Steeves Avenue & 33 rd Street (north intersection)	Add name blade on right side	Improve visibility of street name sign
7	Steeves Avenue between Carter Crescent (north) & Carter Crescent (south)	Speed display board	Reduce speed
8	John A. McDonald Road - in front of Confederation Park School	Send speed data to Police Services to consider enforcement during school hours	Reduce speed near school
9	Diefenbaker Drive, Confederation Drive, 33 rd Street	Send speed data to Police Services to consider enforcement during peak hours	Reduce speed

Table 5-6: Confederation Park Neighbourhood Recommended Improvements







APPENDIX A: MEETING MINUTES

Confederation Park Neighbourhood Traffic Review Thursday, May 7, 2015, 7:00 – 9:00 P.M. Confederation Park School

Facilitators:

• Mitch Riabko & Kathy Dahl (Great Works Consulting)

<u>Agenda</u>

- Welcome & introductions
- Presentation from the Transportation Division
- Small group discussions
- Small group discussion report back to large group
- Next Steps
- Question / Answers

Presentation from Councillor Iwanchuk

Traffic issues raised by residents she's received:

- Tilley Ave & 33r St
- Speeding on Confederation Dr
- Pedestrian safety at Confederation Dr & John A McDonald report went to committee recently and signs, pavement markings will be upgraded.

Presentation from Transportation Division – Confederation Park Neighbourhood Traffic Review

(Presented by Justine Nyen – Traffic Engineer)

Presentation Outline:

- Neighbourhood Review Process
- Timeline for Confederation Park Review
- Sources of Information
- Concerns Received
- Description of Traffic Calming & Pedestrian Safety Devices

Neighbourhood Review Process:

- August 2013 New process; neighbourhood review vs issue by issue; eight neighbourhoods reviewed per year
- Mandate Reduce & calm traffic, improve safety within neighbourhoods
- **2014 –** Varsity View, Nutana, Brevoort Park, Haultain, Holliston, City Park, Westmount, Hudson Bay Park, Caswell Hill
- **2015** Confederation Park, Meadowgreen, Adelaide-Churchill, Montgomery Place, Lakeview, Confederation Park, Greystone Heights, Mount Royal

Timeline for Confederation Park Review:

- Stage 1 Identify issues & possible solutions through community consultation (May to fall 2015)
- Stage 2 Develop a draft traffic plan (fall 2015)
- Stage 3 Present draft traffic plan to community for feedback (fall 2015)
- Stage 4 Implement the changes over time

Sources of Information:

- Past Studies
- Collision Analysis
- Feedback from Public Consultation
- Traffic Counts & Assessments

Concerns Received:

- Confederation Drive
 - speeding and pedestrian safety concerns
 - Pedestrian upgrades at John A McDonald (ie. improved signs and pavement markings)
 - pedestrian-activated signal is recommended and on the list of priority locations; will be installed when funding becomes available
- Tilley Avenue & 33rd St pedestrian safety concerns
- Steeves Avenue speeding concerns
- Back lanes near Diefenbaker Drive speeding and high traffic volumes on weekends (near Church and from bars)

Traffic Calming Devices (Examples of devices used in Saskatoon):

- 1. Speed Display Boards
- 2. Raised Median Island narrows road; provides center refuge for pedestrians
- 3. Curb Extensions narrows road
- 4. Roundabouts
- 5. Diverter used to address high traffic volumes
- 6. Right-in/right-out island used to address high traffic volumes
- 7. Directional Closure restrict movements onto the street from one direction
- 8. Raised median through intersection restrict movements
- 9. Full closure

Pedestrian Devices:

- 1. Standard crosswalk
- 2. Zebra crosswalk (striped pavement markings)
- 3. Active pedestrian corridor (flashing yellow lights)
- 4. Pedestrian-activated signals

Presentation from Saskatoon Police Services

(Constable Kaolanko & Schmidt)

• Saskatoon Police Services: 306-975-8300 <u>OR</u> 306-975-8068 to report a traffic complaint or a concern.

Resident: Drivers aren't stopping from Steeves Avenue onto 33rd St. Speeding from Steeves Avenue.

Police: We'll follow up.

Resident: Speeding on Diefenbaker Drive, mid-morning into mid-afternoon. Around 8am, kids are speeding to school. Drivers coming off of highway. Cars parked near intersections make it difficult to see.

Police: Detailed information is great. Provide a license plate number and we can follow up with particular individuals. Police presence helps slow drivers. A number of tickets are also given out in schools zones.

Resident: Will you write tickets based on a residents word?

Police: Yes. As long as it's a valid source and detailed information is provided.

Resident: Are the ramps in the median on 22nd Street legal pedestrian crossings?

City: Yes. We are undergoing a review to improve pedestrian safety on 22nd Street. The high traffic volumes and number of lanes on 22nd St suggest that activated pedestrian devices are the best option. A couple years ago pedestrian-activated signals were installed at Avenue M and Avenue R to alleviate the pedestrian safety concerns on 22nd Street.

Resident: Shouldn't there be lines to mark the crossings?

City: If we put lines in, motorists wouldn't notice them because traffic is too high these areas. They'd get lost and be ineffective.

Resident: Do you ever do blitzes on signaling?

Police: Since officer has been with the department, they have not done enforcement for signalling.

Resident: Can you set up speed radar coming onto 33rd St?

Police: Not able to answer that question. We can enforce but not able to provide that information.

Small Group Discussions

Breakout into small groups to discuss traffic concerns in Confederation Park and potential solutions

Group 1: Angela Gardiner (City Facilitator) & Justine Nyen (City Facilitator)
- 1. Centennial Drive & Diefenbaker Drive there are no protected pedestrian crossings between Diefenbaker Drive and Pearson Place. There should be traffic signals or a pedestrian device installed.
- 2. Byng Avenue high traffic volumes, especially southbound; contractors shortcutting; difficult to back out of driveways
- 33rd Street between Byng Avenue & Steeves Avenue drivers going through stop signs (eastbound); parking obstructs drivers view
- 4. Steeves Avenue speeding; not stopping at stop signs; lots of construction vehicles; parking within 10m of intersection making it difficult to see; snow clearing makes road narrow to two lanes and snow is being pushed onto sidewalk forcing pedestrians to walk on the road; remove snow banks; snow is being piled in front of pedestrian ramps; traffic volumes will increase due to Kensington and Elk Point development; street sweeping needed; name blade from 33rd Street to get onto Steeves Avenue should be on the right side (currently on left) in the westbound direction.
- 5. Diefenbaker Drive speeding to Steeves Avenue
- 6. Neault Road onto Dalmeny Road provide information on what is proposed here at next meeting
- 7. Meighen Crescent mud on streets needs cleaning

Next Steps

- 1. Continue monitoring traffic issues in your neighbourhood
- 2. Mail-in or email comments no later than June 14/15
- 3. Additional public input via City on-line Community Engagement webpage no later than June 14/15

http://shapingsaskatoon.ca/discussions/confederation-park-neighbourhood-trafficreview-meeting

- 4. Traffic count data collection spring/summer 2015
- 5. City review of public input and data collected from traffic studies and prepare draft Traffic Plan
- 6. Follow-up public input meeting to provide input on draft
- 7. Determine revisions and finalize Traffic Plan
- 8. Present Traffic Plan to City Council for approval

List of Representatives

Mitch Riabko, Kathy Dahl – Great Works Consulting, Facilitators

Angela Gardiner – City of Saskatoon, Transportation & Utilities, Transportation Director Jay Magus – City of Saskatoon, Transportation & Utilities, Engineering Manager Shirley Matt – City of Saskatoon, Transportation & Utilities, Traffic Management Supervisor Justine Nyen – City of Saskatoon, Transportation & Utilities, Traffic Management Mariniel Flores – City of Saskatoon, Transportation & Utilities, Traffic Management Lanre Akindipe – City of Saskatoon, Transportation & Utilities, Infrastructure Engineer Goran Lazic – City of Saskatoon, Transportation & Utilities, Traffic Operations Engineer Marina Melchiorre – City of Saskatoon, Transportation & Utilities, Traffic Engineer David LeBoutillier – City of Saskatoon, Transportation & Utilities, Traffic Engineer Mark Emmons – City of Saskatoon, Planning & Development, Planner – Neighbourhood Planning Konrad Andre – City of Saskatoon Planning & Development, Senior Planner Ellen Pearson – City of Saskatoon Planning & Development, Planner

Confederation Park Neighbourhood Traffic Review Thursday, October 22, 2015, 7:00 – 9:00 P.M. Confederation Park Community School

Facilitators:

• Mitch Riabko & Kathy Dahl (Great Works Consulting)

<u>Agenda</u>

- Welcome & introductions
- Presentation from the Transportation Division
- Small group discussions
- Small group discussion report back to large group
- Next Steps
- Question / Answers

Presentation from Transportation Division – Confederation Park Neighbourhood Traffic Review

(Presented by Justine Nyen – Traffic Engineer)

Presentation Outline:

- Neault Rd / Dalmeny Rd Update
- Neighbourhood Traffic Management Program
- How We Got Here
- What We Heard
- What We Did
- What We Propose

Neault Rd / Dalmeny Rd:

- 4-lane divided arterial
- Phased implementation
- Traffic Signal at 33rd Street (north)
- Potential connection between North Industrial and South Industrial (West Connector Route)

Neighbourhood Traffic Management Program:

- Address neighbourhood traffic issues:
 - Speeding concerns
 - Short-cutting concerns
 - Pedestrian safety
 - Intersection safety
- August 2013 changes to program
 - Neighbourhood-wide review
 - More community / stakeholder feedback
 - Efficient use of staff resources

How We Got Here:

• May 2015 – Initial Traffic Meeting

- May to October 2015 gather feedback, conduct traffic studies, collect data, develop traffic plan
- October 2015 Follow Up Traffic Meeting display proposed traffic plan and gather feedback

What We Heard:

- A. Speeding/Traffic Volumes:
 - Steeves Avenue
 - Diefenbaker Drive
 - 33rd Street
 - Byng Avenue
 - John A. MacDonald Road
 - Confederation Drive
 - Back lanes
- B. Pedestrian Safety:
 - 33rd Street & Tilley Avenue
 - 33rd Street & Byng Avenue/Hughes Drive
 - Diefenbaker Drive & Centennial Drive
 - Confederation Drive:
 - John A. MacDonald Road
 - Milton Street
 - Massey Drive
- C. Intersection Safety:
 - 33rd Street & Byng/Hughes Drive
 - 33rd Street & 33rd Street (stop signs eastbound)

What We Did:

- Collected Data:
 - Past studies
 - 15 attendees at initial meeting
 - 9 resident responses (phone calls, emails, letters)
 - Recorded comments from Shaping Saskatoon discussions
 - 7 Intersection / Pedestrian counts
 - 7 7 day traffic count (24 hour) & Average Speed measurements
 - 1 back lane traffic volume count
 - Collision history
- Field Reviews
- Assessed the Issues
- Generated proposed recommendations

What We Propose:

- Proposed recommendations include:
- Standard pedestrian crosswalk 1 location
- Zebra pedestrian crosswalks 2 locations
- Hazard boards 1 location
- Curb extension 1 location
- Street name blade 1 location
- Speed display boards
- Enforcement

• Saskatoon Police Services: 306-975-8300 <u>OR</u> 306-975-8068 to report a traffic complaint or a concern.

Small Group Discussions

Breakout into small groups to discuss traffic concerns in Confederation Park and potential solutions

Group 1: Mariniel Flores (City facilitator)

- Not if favour of curb extension at Diefenbaker Dr & Steeves Avenue; install traffic signal instead; vehicles can't make southbound left turn
- John A. MacDonald Rd (in front of Confederation Park School) add to list of photo radar locations
- Speed display board locations (make sure they are visible):
 - o John A. MacDonald Rd at Confederation Park School
 - Diefenbaker Dr between Douglas Cres to Steeves Ave
 - Centennial Dr school zones
 - Confederation Dr near Palmer Pl
- Confederation Dr & Milton St consider traffic signal
- Increase traffic and speed on Lisgar Ave look into traffic calming
- 33rd St (south) & Steeves Ave markings to separate northbound & southbound traffic
- Move school bus roll out sign to be more visible
- Consider traffic signal to replace pedestrian signal at Diefenbaker Dr & Pearson PI
- Diefenbaker Dr & Laurier Dr left turn doesn't get activated as much (have to wait for 4 cars lined up to activate left turn signal)
- Many vehicles turning at Palmer PI cul-de-sac; collisions occurring
- Narrow streets in new neighbourhoods should be considered; should make sure there's room for 2 cars to pass (ie. Steeves Ave)
- Superstore driveway onto Laurier Ave restrict northbound left turn
- Relocate yield sign closer to west and south
- Issue of right turning vehicles off 22nd St onto Diefenbaker Dr
- Speed traps at 8pm or 9pm too (not just 3pm/4pm)
- Confederation Dr & 22nd St make 2 lanes instead of one (by Tim's)

Group 2: Mark Emmons (City facilitator)

- Diefenbaker Dr & Steeves Avenue not sure if curb extension is needed. Kensington having major impact on traffic. Especially heavy truck traffic. Perhaps paint crosswalk instead.
- Diefenbaker Dr & Centennial Dr bit of a blind corner. Busy pedestrian crossing. Not necessary to make zebra crosswalk. Focus on funnelling pedestrians to the northwest crossing. Still add oversized pedestrian signs for the northwest crossing. Hazard boards are fine but also consider oversized stop sign.
- 33rd St & Tilley Ave perhaps double-faced pedestrian signs on median.
- Speed display boards:
 - 33rd St place board for westbound traffic between Tilley Ave & curve
 - Confederation Dr focus on northbound traffic near Milton St or Massey Dr

• Diefenbaker Dr – near Mac's store

Group 3: Shirley Matt (City facilitator)

- Steeves Ave & Diefenbaker Dr busy intersection; missing pavement on Diefenbaker; slow down at corner; overhead signs or pavement markings; need signals for westbound traffic
- Diefenbaker Dr & Centennial Dr hazard boards will not benefit; install larger signs for zebra crossings; back corner is hard to walk; will be worse with new developments; still needs traffic signals
- 33rd St & 33rd St (eastbound) close it off to traffic; see collisions; rolling through stop sign
- Steeves Ave speeding; study in July; high school students; gravel trucks; heavy trucks; trucks going to and from Kensington; police enforcement needed
- Diefenbaker Dr & back alley (west of Steeves Ave) parking restriction needed because there are visibility issues
- Back lane west of Whelan Cres 20kph speed signs needed; jersey barriers causing some issues for vehicles setting in; maintenance needed
- Confederation Dr & John A. Macdonald Rd traffic signals needed; difficult to turn left

Group 4: Justine Nyen (City facilitator)

- Diefenbaker Dr & Steeves Ave not in favour of curb extension; difficult to turn left from Steeves Ave; parking on northwest corner obstructs driver's view
- Diefenbaker Dr & Centennial Dr sightlines are a concern, particularly looking northwest from Centennial Dr; review sightlines and consider parking restrictions to improve sightlines
- Speed display boards, where to install:
 - Steeves Ave southbound at Carter Cres (north); or northbound at Carter Cres (south)
 - 33rd St eastbound before Byng Ave
 - Diefenbaker Dr northbound before curve; westbound near Fisher Cres (Mac's Store); northbound south of Centennial Dr
- Diefenbaker Dr send out parking enforcement to enforce 10m rule (ie. according to Bylaw 7200 vehicles are not to park within 10m of on intersection)
- Steeves Ave & John A. MacDonald Rd school buses stopping to drop off students; pedestrian safety concern
- 33rd St & 33rd St (eastbound at stop signs) drivers stopping or slowing down on north leg because stop sign is visible; difficult to see behind at stop sign
- Diefenbaker Dr & Steeves sanding needed in winter; very icy
- Steeves Ave remove snow bank in winter; this is a transit / school bus route
- Drivers don't stop for pedestrians on Confederation Dr or Diefenbaker Dr
- Laurier Dr to Circle Dr increased volumes
- Diefenbaker Dr concerns at Superstore entrance

Next Steps

1. Mail-in or email comments no later than Nov 22/15

2. Additional public input via City on-line Community Engagement webpage no later than Nov 22/15

http://shapingsaskatoon.ca/discussions/confederation-park-neighbourhood-traffic-review-meeting

- 3. Additional consultation if required
- 4. Present traffic plan to City Council for approval
- 5. What happens after City Council approval? Implementation begins. Signs and temporary traffic calming will be installed as early as next spring (2016)
- 6. What if I don't agree? Request time to speak at City Council meeting

<u>Q&A</u>

Resident: When did the traffic monitoring take place?

City: Some counts were during the summer months. Some were during school months.

Resident: When you drive down Diefenbaker Dr past Steeves, there's a road block and no signs to warn you of dead end. Need warning signs. A lot of drivers are frustrated.

Resident: Westbound on 33rd Street turning to eastbound on Confederation Dr look at yield signs.

Resident: What do SGI collision stats look like? Where were high collision locations?

City: Top locations are typically intersections with higher volumes. Confederation Dr & Massey, Diefenbaker Dr & Centennial Dr etc. These were reviewed as part of the study.

Resident: Corner of John A. MacDonald Rd & Steeves Ave there's a yield sign. Can this be changed to a stop sign?

City: Since this is on a transit route we can change it to a stop sign.

List of Representatives

Mitch Riabko, Kathy Dahl – Great Works Consulting, Facilitators Shirley Matt, Justine Nyen, Mariniel Flores – City of Saskatoon, Transportation & Utilities Mark Emmons – City of Saskatoon, Planning & Development

APPENDIX B: TRAFFIC DATA COLLECTION













APPENDIX C: ALL-WAY STOP ASSESSMENTS

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

Step 1:

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: % of Traffic from minor street	Condition 2: Traffic Signals or all-way stop within 200m	All-Way Stop Warrant
Centennial & Diefenbaker	19% (no)	no	
33rd & Hughes	21% (no)	no	Conditions NOT met.
33rd St & Tilley Ave	9% (no)	no	met.

Conditions not met. No need to proceed to Step 2.

APPENDIX D: PEDESTRIAN DEVICE ASSESSMENTS

Active Pedestrian Corridor Warrant

Confederation Drive & Massey Drive:

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Total Warranted PC Points: or / period Highest PC point value: 1,192 at Average PC point value: 321				High	est PC po	int value:	1,192			/ period			

Centennial Drive & Diefenbaker Drive:

Time	Vehicle	Counts		Tot	al Both Si	estrian Co ides	unts	Factore	d Counts	P.C. Warrant	Periods Wrnt'd	11
(15 minute intervals)	15 min.	30 min.	Child	Teen	Adult	Senior /	Total	15 min.		Points	(1=Yes)	
7:00						Impaired					()	
7:15												
7:30												
7:45												
8:00	298	298	1				1	1	1	298		
8:15	321	619	4				4	4	5	3,095		
8:30	360	681							4	2,724		
8:45	262	622										
9:00		262										
9:15												
9:30												
9:45												
AM Totals	1,241		5				5					
11:30	226	477	2				2	2		054		
11:45	251	477	1						2	954		
12:00	245	496	1				1	1	1	496 481	<u> </u>	
12:15 12:30	236 262	481 498							1	481	<u> </u>	
12:30	252	498 518										
13:00	230	473										
13:15	217	473	2				2	2	2	856		
Noon Totals	1,904	120	5				5			0.50		
14:00	_,											
14:15												
14:30												
14:45												
15:00	275	275										
15:15	356	631	1				1	1	1	631		
15:30	394	750	1				1	1	2			
15:45	376	770	1				1	1	2	1,540		
16:00	370	746							1	746		
16:15	363	733										
16:30	341	704	1				1	1	1	704		
16:45	433	774	1				1	1	2	1,548		
17:00		433							1	433		
17:15												
17:30												
17:45												
18:00 18:15												
18:30												
18:45												
19:00											<u> </u>	
19:15							-					
19:30							-					
19:45												
20:00							•					
20:15												
20:30												
20:45							<u> </u>					
PM Totals	2,908		5				5					
Totals	6,053		15				15					
			100%				100%					
					h Crosswa		11	<<< instal	l crosswall	on this sid	de of the ii	nt.
				Sout	h Crosswa	alk =	4					
					9	SUMMARY	Y					
					C Points:		or		/ period			
					int value:	3,095	at					
			Avera									

33rd Street & Hughes Drive:

Time (15 minute	Vehicle	Counts		Tot	tal Both Si	estrian Co des	unts	Factore	d Counts	P.C. Warrant	Periods Wrnt'd	Wrnt'd
(15 minute intervals)	15 min.	30 min.	Child	Teen	Adult	Senior /	Total		30 min.	Points	(1=Yes)	
7.00	15 IIII.	50 mm.	Child	Teen	Adult	Impaired	Total	15 mm.	30 mm.	Points	(1=res)	Periou
7:00												
7:15												
7:30												
7:45												
8:00	122	122	1				1	1	1	122		
8:15	139	261							1	261		
8:30	127	266	2				2	2	2	532		
8:45	106	233							2	466		
9:00		106										
9:15												
9:30												
9:45												
AM Totals	494		3				3					
11:30	100											
11:45	100	200										
12:00	98	198	1				1	1	1	198		
12:15	129	227	1				1	1	2	454		
12:30	114	243							1	243		
12:45	115	229										
13:00	99	214										
13:15	105	204										
Noon Totals	860		2				2					
14:00												
14:15												
14:30												
14:45												
15:00	107	107										
15:15	131	238										
15:30	168	299										
15:45	108	325										
16:00	165	323										
16:15	141	306										
16:30	150	291					2		-			
16:45	198	348	2				2	2	2	696		
17:00		198							2	396		
17:15												
17:30												
17:45												
18:00												
18:15												
18:30												
18:45												
19:00							-					
19:15												
19:30												
19:45							-					
20:00												
20:15												
20:30												
20:45												
PM Totals	1,217		2				2					
Totals	2,571		7				7					
			100%				100%					
			-	Wes	t Crosswa	lk =	5	<<< instal	l crosswall	c on this sid	le of the ii	nt.
					Crosswa		2					
		I	1					L				
						SUMMAR	I					
			Total Wa				or		/ period			
					int value:	696	at					
				DC	int volue.	225						
			Avera	ge PC poi	int value:	225						

Confederation Drive & John A. MacDonald Road:

Time (15 minute	Vehicle	Counts	<u> </u>	Tot	al Both Si	estrian Co des	unts	Factore	d Counts	P.C. Warrant	Periods Wrnt'd	11
intervals)	15 min.	30 min.	Child	Teen	Adult	Senior /	Total	15 min.	30 min.	Points	(1=Yes)	
7:00	175					Impaired					(1 100)	
7:15	223	398										
7:30	262	485										
7:45	317	579										
8:00	349	666	1				1	1	1	666		
8:15	331	680					-	-	1	680		
8:30	374	705										
8:45	333	707										
9:00		333										
9:15												
9:30												
9:45					1							
AM Totals	2,364		1				1					
11:30	205				1							
11:45	185	390										
12:00	302	487			1		1	0.5	0.5	244		
12:15	240	542							0.5	271		
12:30	264	504		1			1	0.67	0.67	338		
12:45	246	510							0.67	342		
13:00	289	535										
13:15	253	542										
Noon Totals	1,984			1	1		2					
14:00												
14:15												
14:30												
14:45												
15:00	340	340										
15:15	378	718										
15:30	396	774										
15:45	391	787		1			1	0.67	0.67	527		
16:00	372	763	1				1	1	1.67	1,274		
16:15	388	760							1	760		
16:30	426	814										
16:45	448	874			1		1	0.5	0.5	437		
17:00	460	908							0.5	454		
17:15	460	920										
17:30	451	911										
17:45	439	890										
18:00 18:15		439										
18:30												
18:45												
19:00 19:15				<u> </u>								
19:15			1	1			,					
19:30										<u> </u>		
20:00												
20:00							-	1				
20:13				<u> </u>								
20:30												
PM Totals	4,949		1	1	1		3					
Totals	9,297		2	2	2		6					1
	-,=,,		33%	33%	33%		100%	1				
			0070		h Crosswa	alk =	4	<	l crosswall	c on this sid	le of the ir	nt.
					h Crosswa		2					
		Ц				SUMMAR	Y	1				
			Total W	monte J F					/ no=== 1			
					C Points:	1 274	or		/ period			
					int value: int value:	1,274 399	at					

Periods Points of Pedestrian Counts P.C. Vehicle Counts Time Wrnt'd Wrnt'd **Total Both Sides** Factored Counts Warrant (15 minute intervals) Senior / 15 min. 30 min. Child Teen Adult Total 15 min. 30 min. Points (1=Yes) Periods Impaired 7:00 7:15 7:30 7:45 8:00 8:15 8:30 1,862 8:45 3,740 9:00 1,008 9:15 9:30 9:45 AM Totals 11:30 11:45 12:00 12:15 12:30 12:45 13:00 13:15 Noon Totals 14:00 14:15 14:30 14:45 15:00 15:15 1,420 15:30 5,418 15:45 7,198 7,198 2,184 16:00 16:15 16:30 16:45 17:00 17:15 17:30 17:45 18:00 18:15 18:30 18:45 19:00 19:15 19:30 19:45 20:00 20:15 20:30 20:45 7,198 PM Totals Totals 100% 100% West Crosswalk = <<< install crosswalk on this side of the int. East Crosswalk = SUMMARY

John A. MacDonald Road & Cartier Crescent (west):

Total Warranted PC Points:7,198Highest PC point value:7,198Average PC point value:1,835No. of periods warranted:1

7,198 / period

or

at

Pedestrian Actuated Signal Warrant

Confederation Drive & Massey Drive:

tion & Roadway Classification:	Confederation & Massey					
Date of Count:	Day of wk: Wed/Thurs	Mth, Day, Y	r: May 27/15			
Weather:	fair					
Traffic Control Devices:	stop sign					
Current Pedestrian Control:	standard					
Other Notes:	-					_
Number of travel lar	nes passing through the cro	osswalk(s) 5	lanes			
Is there a physical m	nedian in this crosswalk(s)	? y	(y or n)			
Speed limit (or 85th	percentile speed)	50	km/h			
🗌 85th pe	ercentile (check one)					
Posted	Limit					
Distance to nearest J	protected crosswalk	450	m			
Location:						
Туре:						
Is the orientation of	this crosswalk(s) N-S?	۳ n	(y or n)			
			() or m			
Duration of pedestri	ian count	5	hrs			
Flowentow		Total Warranted PC Point			11 044	(noriod
Elementary: High School:		Highest PC point value		or at	11,844	/ period
Adult:		Active Ped Corridor Point		at		
Senior		ian Actuated Signal Point				
Vehicles passing through	,	in the second of the second se				
crosswalk(s):	/ 0//					

ACTIVE PEDESTRIAN CORRIDOR WARRANTED PEDESTRIAN ACTUATED SIGNAL NOT WARRANTED

**Install device at the North Crosswalk **

(Note: Standard and Zebra crosswalks can be installed on both sides if pedestrian volumes are approximately equal.)

nume IntervalNomNomResPate	Time		Vehic	e Counts		Pedestrian Counts							
internallyimageimageAdultYeapMult<	(15						North C	rosswalk			South Cı	osswalk	
Implementation Impleme		SB	WB	NB	EB	Child	Teen	Adult		Senior /	Adult	Teen	Child
7.30 7.30 7.30 7.30 7.30 7.40						r	r	r	Impaired	Impaired	r	r	r
735 735 736 737 738 737 737 738 737 737 737 737 737 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td>•</td> <td>r</td> <td>-</td> <td></td> <td></td> <td>-</td>						-	-	•	r	-			-
748						-		-	r	-	-	-	
8430 224 27 143 2 0 0 0 0 0 8430 191 15 140 0 0 0 0 0 0 900 0 0 0 0 0 0 0 0 0 915 0 0 0 0 0 0 0 0 0 930 0 0 0 0 0 0 0 0 0 930 0 0 0 0 0 0 0 0 0 930 0 0 0 0 0 0 0 0 0 935 0 0 0 0 0 0 0 0 0 1130 08 15 144 2 0 0 0 0 0 1200 112 12 148 12 0 0 0 0 0 0 1230 100 10 130 1 0 0 0 0 0 0 1340 10 130 14 10 0 0 0 0 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td>						-				-			
838 239 31 143 2 0 0 0 0 0 845 191 15 143 0 0 0 0 0 0 0 915 0 0 0 0 0 0 0 0 0 930 0 0 0 0 0 0 0 0 933 0 0 0 0 0 0 0 0 945 0 0 0 0 0 0 0 0 945 15 144 0 2 0 0 0 0 1130 108 15 144 0 2 0 0 0 0 1240 12 12 14 0 0 0 0 0 0 1230 10 17 133 0 0 0 0 0 0 0 1315 104 17 102 9 0 0 0 0 0 1443 0 10 139 4 0 0 0 0 1443 0 <td< td=""><td>8:00</td><td>223</td><td>25</td><td>137</td><td></td><td>1</td><td></td><td></td><td>r</td><td></td><td></td><td></td><td></td></td<>	8:00	223	25	137		1			r				
8845 191 15 10 10 10 10 10 10 10 10 10 10 910 10 10 10 10 10 10 10 10 10 913 10 10 10 10 10 10 10 10 10 930 10 10 10 10 10 10 10 10 10 945 877 98 563 5 10 10 10 10 945 10 116 124 10 10 10 10 10 10 1130 108 15 144 2 10 10 10 10 10 1200 117 18 112 10 2 10 10 10 10 10 1310 10 17 133 10 1 102 10 10 10 10 1340 104 17 102 4 10 10 10 10 1340 104 10 10 10 10 10 10 14400 12 100 10	8:15	224	27	143		2							
9.90 Image	8:30	239	31	143		2							
9:15 1 1 1 1 1 1 1 1 1 1 9:30 1 1 1 1 1 1 1 1 1 1 1 1 9:30 37 98 563 5 1 <td></td> <td>191</td> <td>15</td> <td>140</td> <td></td> <td></td> <td>[</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		191	15	140			[
9:30 9:40							[
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AM Torks977988563556666666711-301281612477 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td><td></td><td>[</td></t<>										-			[
11.130 108 15 144 2 10 10 10 10 11.45 128 16 124 10 12 148 10 10 10 10 10 12.100 117 18 112 2 10 <t< td=""><td></td><td><u> </u></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>		<u> </u>											
1146 128 16 124 124 124 124 124 12 148 12 148 148 148 148 148 148 148 148 148 148 122 1 140 17 133 123 140 17 133 17 133 147 133 147 133 147 133 147 133 147 133 147 133 147 133 147 133 147 133 147 133 147 133 147 133 147 143 147 140 141						1. Contract (1. Co	-	-		-	-	-	
12:00 112 12 148 12 2 1 1 1 1 1 12:30 140 19 122 1						2		-	-	-	-	-	<u>├</u> ───
12:15 117 18 112 2 7 6 7 7 7 12:35 100 17 133 1									-	-			
140 149 122 1 1 1 1 1 1 1 1 1 1 1 1 1 1245 130 106 10 139 4 1 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>2</td> <td>r</td> <td>-</td> <td>·</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td>						2	r	-	·	-	-	-	-
12:45 130 17 133 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td>							-	-	-	-	-	-	
13:00 106 10 139 4 6 6 6 6 6 6 13:15 104 17 102 9 6 6 6 6 6 14:00 5 124 1024 9 6 6 6 6 6 6 14:00 6 6 6 6 6 6 6 6 6 14:15 6 6 6 6 6 6 6 6 6 14:30 7 7 6 6 6 6 6 6 6 14:45 7 7 8 6 6 6 6 6 6 15:15 147 24 200 6 6 6 6 6 6 15:15 147 18 236 6 7 6 6 6 7 6 15:15 147 24 200 3 6 6 6 6 3 15:15 157 29 207 7 6 6 6 6 6 16:00 177 20 34 1 6						- <u>-</u>		-	-				
13:15 104 17 102 100 101 100 101 100 101 100 101 100 101 100 101 100 101 100 101 100 101 100 101 100 101 100 101 100 101 100 101 100 101 100 101 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>4</td> <td>r</td> <td>-</td> <td></td> <td>•</td> <td>-</td> <td>-</td> <td></td>						4	r	-		•	-	-	
Noon Totals9451241.0241.0299 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>· · ·</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>						· · ·							
14:00Image	Noon Totals					9							
14:15 Image	14:00			,									
1445 Image <													
15:00137191811441414142420014162920716331616161629207172031416161616161629207172031416	14:30												
15:1514724200ICI	14:45												
15:30174188236Image<		137	19	181		4							
15:451822725799111													
16:00177222503316:15156292077116:30163202543116:4517720314 <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>				1									
16:15156292071071010101116:301632025433101													
16301632025433111<				1									
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17:00Image of the sector of the s													
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PM Totals 1,313 179 1,899 27 Image: Constraint of the constraint of													
Totals 3,135 401 3,486 41 5		1.949	470	1.000		27							-
	Totals	3,135	401	3,480		41	North C		41		Couth C		5

Confederation Drive & Milton Drive:

tion & Roadway Classification:	Milton & Confed					
Date of Count:	Day of wk: Tues	Mth, Day, Yr:	January-24-12			
Weather:	Mainly Clear -13 degrees					
Traffic Control Devices:	Standard pedestrian crosswalk 8	& signage				
Current Pedestrian Control:	#REF!					
Other Notes:	if PAS is warranted, install on so	outh side				_
Number of travel lar	nes passing through the crossw	alk(s) <u>5</u>	lanes			
Is there a physical m	edian in this crosswalk(s)?	y y	(y or n)			
Speed limit (or 85th		30	km/h			
🗖 85th pe	ercentile (check one)					
Posted	Limit					
Distance to nearest p Location: Type:	Bennet Pl	220	m			
Is the orientation of	this crosswalk(s) N-S?	n n	(y or n)			
Duration of pedestri	an count	5	hrs			
Elementary: High School: Adult: Senior: Vehicles passing through crosswalk(s):	Acti Pedestrian	ll Warranted PC Points: Highest PC point value: ve Ped Corridor Points: Actuated Signal Points:	157,362 19,526 16 122	or at	9,835	/ period
	ACTIVE PEDESTR	IAN CORRIDOR WA	RRANTED			

PEDESTRIAN ACTUATED SIGNAL WARRANTED

**Install device at the South Crosswalk **

(Note: Standard and Zebra crosswalks can be installed on both sides if pedestrian volumes are approximately equal.)

Time		Vehic	le Counts		Pedestrian Counts							
(15						North Ci	osswalk	_		South Cr	osswalk	
minute	SB	WB	NB	EB	Child	Teen	Adult	Senior /	Senior / Impaired	Adult	Teen	Child
intervals) 7:00					r	r		Impaired	Impaired	-		
7:15					-	-	-	-	-		-	
7:30					-				-	-		
7:45					-		-		-			
8:00	159	21	70		3							3
8:15	190	30	103	2	1							4
8:30	201	26	141		4							2
8:45	178	26	140	3	1	[[
9:00												
9:15								[
9:30						[[
9:45												
AM Totals	728	103	454	5	9	-	-	,	-	_		9
11:30	80	8	118		1	-	•	r	-	-	-	1
11:45	111	10	105	1	3	-	-	r	-		-	3 2
12:00 12:15	88	10 8	131	1 1	4	-	-	-				-
12:15	101 100	8 9	134 121	1	5 1	-	-	-	-	-		3 2
12:30	100	9 19	121		5	r	-	r	-		-	4
13:00	126	11	129	1	2	-	-	-	-			4
13:15	90	14	120	2	6							3
Noon Totals	837	89	1,004	6	27							22
14:00	007		1,001									
14:15												
14:30												
14:45												
15:00	123	21	162	1	5							2
15:15	135	19	211	2	4							11
15:30	172	20	197	1								8
15:45	119	18	170	1	3							1
16:00	126	22	199	2	2							7
16:15	136	14	193	2	2							9
16:30	136	12	219		3							7
16:45	131	17	235	1	4							12
17:00												
17:15												
17:30 17:45												
17:43												
18:15												
18:30												
18:45												
19:00												
19:15												
19:30												
19:45												
20:00												
20:15												
20:30												
20:45												
PM Totals	1,078	143	1,586	10	23							57
Totals	2,643	335	3,044	21	59							88
						North Cr	osswalk =	59		South Cro	osswalk =	88

33rd Street & Tilley Avenue:

tion & Roadway Classification:	33rd St & Tilley Ave				
Date of Count:	Day of wk: Wed	Mth, Day, Yr:	May 27/15		
Weather:	fair				
Traffic Control Devices:	stop sign				
Current Pedestrian Control:	non				
Other Notes:					
Number of travel lar	nes passing through the crosswalk	(s) 5	lanes		
Is there a physical n	nedian in this crosswalk(s)?	У	(y or n)		
Speed limit (or 85th	percentile speed)	50	km/h		
🗌 85th p	ercentile (check one)				
Posted	Limit				
Distance to nearest	protected crosswalk	500	m		
Location:	Confederation				
Туре:	TS				
Is the orientation of	this crosswalk(s) N-S?	У	(y or n)		
Duration of pedestri	ian count	5	hrs		
Elementary	: 12 Total W	arranted PC Points:		or	/ period
High School:		hest PC point value:	1,192	at	, x
Adult	: Active I	Ped Corridor Points:			
Senior		uated Signal Points:	39		
Vehicles passing through crosswalk(s)					
	ACTIVE PEDESTRIAN (CORRIDOR N <mark>OT V</mark>	WARRANTED		

PEDESTRIAN ACTUATED SIGNAL NOT WARRANTED

**Install device at the West Crosswalk ** (Note: Standard and Zebra crosswalks can be installed on both sides if pedestrian volumes are approximately equal.)

Time		Vehicl	e Counts					Pedestria	estrian Counts					
(15					West Crosswalk				East Crosswalk					
minute	SB	WB	NB	EB	Child	Teen	Adult	Senior /	Senior /	Adult	Teen	Child		
intervals) 7:00							· · · · ·	Impaired	Impaired		-			
7:15					-	-	-	-	-	-	-	-		
7:30						-	-	-		-				
7:45					-	-	-	r	-	-	-	-		
8:00		39	14	69	-				-					
8:15		42	24	72	-		-	·						
8:30		41	16	86	r			r						
8:45		45	18	46				·						
9:00														
9:15														
9:30														
9:45					·		·	·						
AM Totals		167	72	273	-	-	-	-		_				
11:30		36	5	48								3		
11:45		40	8	41	2				,					
12:00		44	7	41	-	·					-			
12:15		49	7	50			-	-				,		
12:30		39	7	44	1	-	-	r		-	-			
12:45		36	6	42	-	-	-		-	-	-	-		
13:00 13:15		56	9	44										
Noon Totals		34 334	10 59	44 354	3							3		
14:00		554		554	5							3		
14:00														
14:30														
14:45														
15:00		57	6	39	1									
15:15		52	7	66	1									
15:30		86	18	69	2							1		
15:45		85	9	61										
16:00		70	12	44										
16:15		94	9	54										
16:30		89	11	60										
16:45		91		57	1									
17:00														
17:15														
17:30														
17:45														
18:00														
18:15 18:30														
18:30 18:45														
18:45														
19:15														
19:30														
19:45														
20:00														
20:15														
20:30														
20:45														
PM Totals		624	72	450	5							1		
Totals		1,125	203	1,077	8							4		
						West Cr	osswalk =	8		East Cro	osswalk =	4		

Centennial Drive & Diefenbaker Drive:

tion & Roadway Classification:	Centennial & Diefenbaker			
Date of Count:	Day of wk: Mon	Mth, Day, Yr: Jun 15/15		
Weather:	fair			
Traffic Control Devices:	stop sign			
Current Pedestrian Control:	*			
Other Notes:	r			
	nes passing through the crosswalk(s)	6 lanes		
Is there a physical n	nedian in this crosswalk(s)?	y (y or n)		
Speed limit (or 85th		<u>50 </u>		
🗖 85th p	ercentile (check one)			
Posted	Limit			
Distance to nearest Location:	protected crosswalk Confederation	<u>400</u> m		
Туре:	TS			
Is the orientation of	this crosswalk(s) N-S?	(y or n)		
Duration of pedestri	an count	5 hrs		
Elementary High School Adult Senior Vehicles passing through crosswalk(s)	Highes Active Ped Pedestrian Actuat 6,053	-	or at	/ period
	ACTIVE PEDESTRIAN COL	RRIDOR NOT WARRANTED		

PEDESTRIAN ACTUATED SIGNAL NOT WARRANTED

**Install device at the North Crosswalk **

(Note: Standard and Zebra crosswalks can be installed on both sides if pedestrian volumes are approximately equal.)

minuter NSSBWBNBEBInitTeenAultSenior/AultTeenAult	Time		Vehicl	e Counts					Pedestria	ian Counts				
intervals	(15	(D		ND							South Cr	osswalk		
7.05 \sim <th></th> <th>SB</th> <th>WB</th> <th>NB</th> <th>EB</th> <th>Child</th> <th>Teen</th> <th>Adult</th> <th></th> <th>Senior / Impaired</th> <th>Adult</th> <th>Teen</th> <th>Child</th>		SB	WB	NB	EB	Child	Teen	Adult		Senior / Impaired	Adult	Teen	Child	
7:30 7:45						r	r	r	Impaneu	- Impaneu	,			
7.45						•		-		-		-		
7.48									r	·				
Bits 124 133 64 2 1 1 1 8:30 143 125 92 6 6 6 7						·			r					
836 93 125 92	8:00	132		97	69	1				·				
B485 93 106 63 C <thc< th=""> C <thc< t<="" td=""><td></td><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td>2</td></thc<></thc<>						2							2	
900 <td></td>														
9:15		93		106	63	[[[
9:30 Image: state of the state										-			-	
946 <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td>F</td> <td></td> <td></td> <td>-</td> <td></td>						-			F			-		
AM Tools 492 461 288 3 <						-	-	-	r	-	-	-	-	
11:30 65 102 59 1 Image: constraint of the second		402		461	200	2							2	
11:45 78 119 54 78 119 54 12:00 61 143 41 78 78 78 12:15 56 122 58 78 78 78 78 12:43 76 135 45 78 79 79 71 78 78 78 79 79 71 78 78 79 79 71 78 78 <							r	-	r	-	-	-	1	
12:00 61 143 41 Image: constraint of the second sec						- 1	-	-		-	-	-	1	
12:15 56 122 58 Image: constraint of the second sec						-	-	-	-	-	-	-	1	
12:30 80 120 62 Image: constraint of the second sec				1		r	r		r	-	-	-	-	
12:45 76 135 45						-	r	-	·	-	-	-		
13:00 83 96 38 7 2 7 7 13:15 65 109 37 2 7 7 7 14:00 7 2 7 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>r</td> <td></td> <td>-</td> <td>r</td> <td></td> <td>-</td> <td></td> <td></td>						r		-	r		-			
13:15 65 109 37 2						-		-	r	-				
Non Totals 564 946 394 3 M						2								
14:15 Image: constraint of the second se						3							2	
14:30 Image: state of the state of th	14:00													
14:45														
15:00 72 164 39														
15:15 87 190 79 1 Image: constraint of the second														
15:30 101 231 62 1 Image: constraint of the second														
15:45 105 219 52 1 Image: constraint of the second														
16:00 104 215 51														
16:15 89 222 52 <td></td> <td></td> <td></td> <td></td> <td></td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						1								
16:30 64 220 57 1 Image: state s														
16:45 79 283 71 1 Image: state s						1								
17:00														
17:15 Image: state s		15		205	/1	1								
17:30 Image: state s														
17:45 Image: state s														
18:15Image: selection of the sel														
18:15Image: selection of the sel														
18:45Image: selection of the sel	18:15													
$\begin{array}{c c c c c c c c c c c c c c c c c c c $														
$\begin{array}{c c c c c c c c c c c c c c c c c c c $														
19:30 Image: state of the state of th														
19:45 Image: Sector of the														
20:00 Image: Constraint of the state														
20:15 Image: Constraint of the system of														
20:30														
20:45 Image: Constraint of the state of the														
PM Totals 701 1,744 463 5														
Totals 1,757 3,151 1,145 11 Image: Constraint of the second se		701		1 744	463	5								
													4	
NOLITI LI UNNWAIK = 11 AOUTO LI POSSWAIK =	100013	1,707		0,101	1,110		North Cr	osswalk =	11		South Cre	osswalk =	4	

33rd Street & Hughes Drive:

tion & Roadway Classification:	33rd St & Hughes Dr				
Date of Count:	Day of wk: Tues	Mth, Day, Yr:	Jun 23/15		
Weather:	fair				
Traffic Control Devices:	stop sign				
Current Pedestrian Control:	none				
Other Notes:					
Number of travel lar	nes passing through the crosswalk(s) <u>6</u>	lanes		
Is there a physical m	redian in this crosswalk(s)?	y y	(y or n)		
Speed limit (or 85th	percentile speed)	60.6	km/h		
🗖 85th pe	ercentile (check one)				
Posted	Limit				
Distance to nearest J	protected crosswalk	1,000	m		
Location:					
Туре:					
Is the orientation of	this crosswalk(s) N-S?	у у	(y or n)		
Duration of pedestri	an count	5	hrs		
Elementary :	7 Total Wa	arranted PC Points:		or	/ period
High School:		est PC point value:	696	at	/ portou
Adult:		ed Corridor Points:			
Senior:	Pedestrian Actu	ated Signal Points:	45		
Vehicles passing through	2.5/1				
crosswalk(s):	- , - , - , - , - , - , - , - , - , - ,				
	ACTIVE PEDESTRIAN C	ORRIDOR NOT V	VARRANTED		

PEDESTRIAN ACTUATED SIGNAL NOT WARRANTED

**Install device at the West Crosswalk ** (Note: Standard and Zebra crosswalks can be installed on both sides if pedestrian volumes are approximately equal.)

Time		Vehicl	e Counts					Pedestria	ian Counts				
(15					West Crosswalk					East Cro	osswalk		
minute intervals)	SB	WB	NB	EB	Child	Teen	Adult	Senior / Impaired	Senior / Impaired	Adult	Teen	Child	
7:00					-		-	Impaneu	- Impaneu F	-	·		
7:15					•		•	r			-		
7:30								·					
7:45													
8:00	17	38	14	53								1	
8:15	24	51	14	50				[
8:30	16	44	11	56	2				-				
8:45	14	40	6	46			-	r		,	-		
9:00 9:15					-	-	-	-	-		-	-	
9:15					-	-	-	•	-		-		
9:45					-	-	-	-	-			-	
AM Totals	71	173	45	205	2							1	
11:30	6	44	3	47	_	-	-	r	-			-	
11:45	8	40	6	46	•	-			-				
12:00	15	33	1	49	1								
12:15	10	57	1	61	·							1	
12:30	6	51	9	48									
12:45	7	53	7	48									
13:00	7	40	6	46			·	· · · · · ·					
13:15	8	50	5	42									
Noon Totals	67	368	38	387	1							1	
14:00													
14:15 14:30													
14:45													
15:00	9	38	7	53									
15:15	10	64	4	53									
15:30	3	78	15	72									
15:45	11	73	6	67									
16:00	9	76	6	74									
16:15	9	67	5	60									
16:30	10	69	10	61									
16:45	15	91	14	78	2								
17:00													
17:15													
17:30 17:45													
17:45													
18:00													
18:30													
18:45													
19:00													
19:15													
19:30													
19:45													
20:00													
20:15													
20:30													
20:45	76	556	67	518	2								
PM Totals Totals	⁷⁶ 214	1,097	67 150	1,110	<u> </u>							2	
I ULAIN	414	1,097	130	1,110	J							4	

Confederation Drive & John A. MacDonald Road:

tion & Roadway Classification:	Confederation	Dr (Major Arterial) & John A	MacDonald Rd (Major Collector)		
Date of Count:	Day of wk: Thu	rsday	Mth, Day, Yr:	November-06-14		
Weather:		(no snow on ground)				
Traffic Control Devices:	Stop sign on Joh	n A MacDonald Rd giving r	ight-of-way to C	onfederation Dr		
Current Pedestrian Control:	None					
Other Notes:						
Number of travel lar	ies passing thro	ugh the crosswalk(s)	<u> </u>	lanes		
Is there a physical m	nedian in this cr	osswalk(s)?	y y	(y or n)		
Speed limit (or 85th 85th po Vosted	ercentile (chec		50	km/h		
	protected cross Confederation D Traffic Signals		215	m		
Is the orientation of	this crosswalk(s) N-S?	n	(y or n)		
Duration of pedestri	an count		7	hrs		
Elementary	: 2	Total Warran	ted PC Points:		or	/ period
High School:		Highest P	C point value:	1,274	at	, 1
Adult	2	Active Ped Co	orridor Points:			
Senior		Pedestrian Actuated	Signal Points:	21		
Vehicles passing through crosswalk(s):	4/4/					
	ACTIVE	PEDESTRIAN CORR	IDOR NOT V	VARRANTED		

PEDESTRIAN ACTUATED SIGNAL NOT WARRANTED

**Install device at the North Crosswalk **

(Note: Standard and Zebra crosswalks can be installed on both sides if pedestrian volumes are approximately equal.)

Time		Vehicl	e Counts					Pedestria	rian Counts					
(15					North Crosswalk				South Crosswalk					
minute	SB	WB	NB	EB	Child	Teen	Adult	Senior /	Senior /	Adult	Teen	Child		
intervals) 7:00	02			27		r	r	Impaired	Impaired	-		-		
7:00	83		55	37		-			-	-	-	-		
7:15	122		64	37		-	-	r	-	-	-			
7:30	145 193		71 90	46 34	-	-	r	r	-		-			
8:00	195		116	34	1	-	-		-	-	-	-		
8:15	190		116	29		-			-	-	-	-		
8:30	198		125	51		-	-	r	-	-	-			
8:45	168		118	47	•			r	-		-	-		
9:00	100		110		-	-	-	-	•		-	-		
9:15					-		-	·	•	-				
9:30					r	•	•	r	-	-				
9:45					-		r	r	·					
AM Totals	1,291		755	318	1									
11:30	82		104	19	·		r	r	·					
11:45	69		88	28	•		r	r	·					
12:00	107		167	28			1							
12:15	100		120	20	•		r		·					
12:30	120		111	33							1			
12:45	103		115	28										
13:00	111		155	23			·	r		<u> </u>				
13:15	117		117	19										
Noon Totals	809		977	198							1			
14:00														
14:15														
14:30														
14:45														
15:00	129		186	25										
15:15	131		199	48										
15:30	162		217	17										
15:45	150		213	28							1			
16:00 16:15	143 143		198 221	31	1									
16:15	143		221	24 31										
16:30	130		245	25			1							
17:00	163		247	23			1							
17:15	156		285	19										
17:30	150		253	31										
17:45	182		235	26										
18:00														
18:15														
18:30														
18:45														
19:00														
19:15														
19:30														
19:45														
20:00														
20:15														
20:30														
20:45														
PM Totals	1,852		2,770	327	1						1			
Totals	3,952		4,502	843	2		2				2			
						North Cr	osswalk =	4		South Cro	osswalk =	2		

John A. MacDonald Road & Cartier Crescent (west):

tion & Roadway Classification:	John A. MacDonald Rd (Major	Collector) & Cartier Cres (W) (Local)			
Date of Count:	Day of wk: Tuesday	Mth, Day,	Yr: April-01-14			_
Weather:	Fair					
Traffic Control Devices:	Yield giving right-of-way to Jo	hn A. MacDonald Rd				
Current Pedestrian Control:	Pedestrian corridor					
Other Notes:						_
	nes passing through the cros	swalk(s) 2	lanes			
Is there a physical m	redian in this crosswalk(s)?	уу	(y or n)			
Speed limit (or 85th		<u>30</u>	km/h			
-	ercentile (check one)	(Posted Li	mit)			
Posted	Limit					
	protected crosswalk John A. MacDonald Rd & Dom Yield & standard crosswalks	inion Cres (E)	m			
Is the orientation of	this crosswalk(s) N-S?	УУ	(y or n)			
Duration of pedestri	an count	5	hrs			
Elementary: High School: Adult:	:	otal Warranted PC Poin Highest PC point valı ctive Ped Corridor Poin	ie: 7,198	or at	7,198	/ period
Senior: Vehicles passing through crosswalk(s):	818	an Actuated Signal Poin	ts: 18			
	ACTIVE PEDESTR	IAN CORRIDOR NO	T WARRANTED			

PEDESTRIAN ACTUATED SIGNAL NOT WARRANTED

**Install device at the West Crosswalk **

(Note: Standard and Zebra crosswalks can be installed on both sides if pedestrian volumes are approximately equal.)

(15 minute intervals) 7:00 7:15 7:30	SB	WB												
intervals) 7:00 7:15	SB	WB			West Crosswalk				East Crosswalk					
7:00 7:15			NB	EB	Child	Teen	Adult	Senior / Impaired	Senior / Impaired	Adult	Teen	Child		
7:15					r		r	Impaired	Impaired		r	r		
					-		•	r	-	-	-			
/:30						-	-	-	-		-			
7:45					-	-			-		-			
8:00	1	12		24	1							1		
8:15		11		25	6									
8:30	2	18		42	13									
8:45		17		31	21									
9:00														
9:15										[[
9:30							-	r			-			
9:45 AM Totals	3	FO		122	41							1		
11:30		58			41 5		-	r	-	-	-			
11:30	1	15 15		13 8	5 6	-	-	-	•	-	-	-		
12:00	1	27		21	1		-		-					
12:15		8		18	7	-	-	-	-	-	-	-		
12:30	1	11		19	1	-			-			1		
12:45		12		12	1		-							
13:00		9		11					·			1		
13:15		13		17										
Noon Totals	3	110		119	21							2		
14:00														
14:15														
14:30														
14:45		22		10	2									
15:00 15:15	1	22 15		16 17	3 16							1		
15:15	1	27		26	46							1		
15:45		36		33	13									
16:00		18		17	8									
16:15		38		22										
16:30		30		19	3									
16:45		46		20										
17:00														
17:15														
17:30														
17:45														
18:00														
18:15														
18:30 18:45														
18:45														
19:15														
19:30														
19:45														
20:00														
20:15														
20:30														
20:45														
PM Totals	1	232		170	89							1		
Totals	7	400		411	151		osswalk =	151			osswalk =	4 4		

APPENDIX E: TRAFFIC SIGNAL ASSESSMENTS

City of Saskatoon Canadian Matrix Traffic Signal Warrant Analysis

City of Saskatoon	Saskatoon	2015 Jul 02, Thu		(yyyy-mm-dd)			Challenged (y/n) y	u (n/y)	u (n/y)	1 (#) 250,000	ct (y/n) n				Ped3 Ped4	EW EW	N Side S Side	3 1	3 2	1	2 2	2	1
Ū						Demographics	Elem. School/Mobility Challenged	Senior's Complex	Pathway to School	Metro Area Population	Central Business District				Ped1 Ped2	NS NS	W Side E Side						
Road Authority:	City:	Analysis Date:	Count Date:	Date Entry Format:		<u>ם</u>	Ш	S	P	4	0			I			\mathbf{RT}	342	281	205	178	225	375
Road		Ana	Ŭ	Date Ent												EB	LT Th	5	7	7	4	6	10
NS	EW				# of Thru Lanes	2	2										RT						
/ or NS)	/ or NS)	N			DPStream Signa (m)	1,000	170									WB	ЧТ						
Direction (EW or NS)	Direction (EW or NS)	Nſ			Excl RT		1		1	u							LT						
Direc	Direc				TA & AT												RT	10	32	6	3	12	5
		Comments			ТЛ+ТЯ+АТ							Median	(m) 4.2			SB	ЧТ	486	460	251	301	324	907
		ŭ	_		Through	2	2					Bus Rt	(u/x)	y			LT						
er	al		EET		TJ & AT				1			Truck	1.0%	1.0%			\mathbf{RT}						
Diefenbaker	Centennial		CHECK SHEET		Excl LT	1						Speed	(Km/h) 50	50		NB	ЧТ	138	266	315	276	605	416
			C			NB	SB	WB	EB				SN	EW			LT	176	195	171	184	335	VVV
Main Street (name)	Side Street (name)	Quadrant / Int #	for Warrant Calculation	kesuus, piease mu rage Down'	Lane Configuration	Diefenbaker	Diefenbaker	Centennial	Centennial			Other input	Diefenhaker	Centennial	Set Peak Hours	Traffic Input		7:00 - 8:00	8:00 - 9:00	11:30 - 12:30	12:30 - 13:30	16:00 - 17:00	17.00 - 18.00

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Average (6-hour peak)



APPENDIX F: COLLISION ANALYSIS

			All	All collisions -	RA, LT, RT	RA, LT, RT -	Average	Collector
Street 1	Street 2	Ugrid	Collisions	2013		2013 only	-	or Arterial
Confederation Dr	Massy Dr	B6-15	18	5	4	1		yes
Diefenbaker Dr	Centennial Dr	B7-19	17	2	6	0		yes
Confederation Dr	John A McDonald	B6-24	17	5	6	2		yes
Confederation Dr	Milton St	B6-19	16	4	4	1		yes
Diefenbaker Dr	Steeves Ave	AA6-11	15	3	4	1		yes
Confederation Dr		B7-46	8	0	1	0		yes
Steeves Ave	33rd St	AA5-4	7	1	0	0		no
Steeves Ave	Shea Cres (north)	AA6-25	5	1	3	1	1	no
John A McDonald	Dominion Cres (west)	A6-75	5	1	1	0	1	yes
Confederation Dr	Borden Pl	B6-21	5	0	0	0	1	yes
Steeves Ave	Carter Cres (north)	AA6-65	3	0	2	0	1	no
Diefenbaker Dr	Douglas Cres (east)	A6-68	3	1	1	1	1	yes
John A McDonald	Cartier Cres (east)	B6-89	3	0	1	0	1	yes
Confederation Dr	Galt Crt	B6-61	3	1	1	0	1	yes
Diefenbaker Dr	Fisher Cres (west)	AA6-73	3	0	0	0	1	yes
Steeves Ave	Carter Cres (south)	AA6-49	3	1	0	0	1	no
Steeves Ave	John A McDonald	AA6-10	3	1	0	0	1	no
Steeves Ave	Blakeney Cres (north)	AA6-79	3	0	0	0	1	no
John A McDonald	Dominion Cres (east)	A6-23	3	0	0	0	1	yes
33rd St	Tilley Ave	A5-4	3	0	0	0	1	yes
Diefenbaker Dr	Fisher Cres (mid)	AA6-19	2	0	2	0	0	yes
Diefenbaker Dr	St. Laurent Cres (west)	A6-19	2	2	1	1	0	yes
John A McDonald	McCully Cres (west)	AA6-71	2	1	1	0	0	yes
33rd St	Byng Ave	A5-1	2	0	1	0	0	yes
Diefenbaker Dr	Smallw ood Cres (south)	B7-16	2	0	0	0	0	yes
Douglas Cres	Douglas Cres (400/500 bloc	A6-13	2	0	0	0	0	no
Steeves Ave	Whelan Cres (south)	AA6-68	2	0	0	0	0	no
Steeves Ave	Bernard Cres	AA6-67	2	1	0	0	0	no
John A McDonald	Tilley Ave	A6-2	2	1	0	0	0	yes
Diefenbaker Dr	Smallw ood Cres (north)	A7-7	1	0	1	0	0	yes
Diefenbaker Dr	Fisher Cres (east)	A6-11	1	1	1	1	0	yes
John A McDonald	Meighen Cres (east)	A6-45	1	1	1	1	0	yes
Diefenbaker Dr	St. Laurent Cres (east)	A6-26	1	0	0	0	0	yes
Steeves Ave	Whelan Cres (north)	AA6-69	1	0	0	0	0	no
John A McDonald	Bernard Cres	AA6-70	1	0	0	0	0	yes
Confederation Dr	Confederation Pl	B6-64	1	0	0	0	0	yes
Confederation Dr	Chandler Pl	B6-31	1	0	0	0	0	yes
Smallw ood Cres	Smallw ood Cres	B7-45	0	0	0	0		no
Douglas Cres	Douglas Cres (east)	A6-79	0	0	0	0	0	no
Douglas Cres	Douglas Cres (300/500 bloc	A6-7	0	0	0	0	0	no
Diefenbaker Dr	Douglas Cres (west)	A6-8	0	0	0	0	0	yes
Diefenbaker Dr	Pearson Pl	A6-48	0	0	0	0		yes
St. Laurent Cres	St. Laurent Cres (400/100 b		0	0	0	0		no
Shea Cres	Shea Cres (100/500 block)		0	0	0	0		no
John A McDonald	McCully Cres (east)	AA6-3	0	0	0	0		yes
John A McDonald	Meighen Cres (west)	AA6-17	0	0	0	0		yes
	Meighen Cres (300/400 bloc		0	0	0	0		no
John A McDonald	Byng Ave	A6-35	0	0	0	0		yes
John A McDonald	Cartier Cres (west)	A6-76	0	0	0	0		yes
John A McDonald	Tupper Cres (west)	A6-12	0	0	0	0		yes
John A McDonald	Tupper Cres (east)	A6-4	0	0	0	0		yes
John A McDonald	McGee Cres (west)	A6-77	0	0	0	0		yes
John A MODULIAIU			0	0	0	0	0	,00

APPENDIX G: DECISION MATRIX

Decision Matrix – Additional Issues raised at October 22, 2015 meeting

Item	Location	Concern	Recommendation
1	33rd St (old) & Steeves Ave	marking separate northbound & southbound traffic	Lane markings not recommended on local roadways.
2	Diefenbaker Dr & Pearson Pl	Replace pedestrian activated signal with traffic signal	Traffic signals are typically recommended on collector or arterial roadways to facilitate higher traffic flows; since Pearson PI is a local roadway that ends only 90m from the intersection, traffic signals are not recommended.
3	Diefenbaker Dr & Laurier Dr	Left turn doesn't get activated as much (takes 4 cars to activate left-turn signal)	Documented for further review as part of Major Intersection Reviews.
4	Diefenbaker Dr (westbound past Steeves)	Need warning signage to indicate dead end	This leads to Kensington, which is still being developed. No further recommendations.
5	33rd St & Confederation Dr	Westbound on 33rd St onto Confederation Dr - issues with yield signs. Needs to be reviewed	No issues noted during site check.
6	John A. MacDonald Rd & Steeves Ave	Change yield sign to stop sign	As per Policy C07-007, stop signs are warranted along bus routes. Add to list of recommendations.
7	Diefenbaker Dr	Parking enforcement for "10m rule"	Forwarded to Parking Enforcement
8	Steeves Ave & John A. MacDonald Rd	School buses stopping near intersection to drop off students; pedestrian safety concerns	Forwarded comments to School Division.
9	33rd St & 33rd St (eastbound at stop signs)	Drivers stopping on north leg because stop sign is visible; difficult to look back (from south leg) to see drivers on north leg	Request sent to sign shop to add a board on the left side of the stop sign so it isn't visible from the north side. No issues noted for driver visibility looking back (from south leg) to see drivers on north leg. Drivers can stop further back from the stop line to see back.
10	Steeves Ave	Snow bank left on road. Snow removal needed. This is a transit / school bus route.	Forwarded to Public Works
11	Confederation Dr and Diefenbaker Dr	Icy conditions; dangerous intersection	Collision analysis indicated "Road Conditions" were a contributing factor; forwarded to Public Works and requested priority snow clearing

ltem	Location	Recommendation	Reason	Group 1	Group 2	Group 3	Group 4	Decision
1	33rd St & Byng Ave	Standard pedestrian crosswalk (west leg)	Improve pedestrian safety					Carried.
7	Steeves Ave & Diefenbaker Dr	Curb extension on northeast corner (on Diefenbaker Dr)	Reduce speed when turning from Diefenbaker (westbound) to Steeves Ave (northbound)	Not in favour	Not in favour	Not in favour. Difficult to turn left from Steeves. Address sightlines by installing parking restrictions (especially on northwest corner). Sanding needed in winter because it's very icy.	Not in favour	Removed.
3	Steeves Ave & 33rd St (north intersection)	Add name blade on right side	Improve visibility of street name sign					Carried.
4	Diefenbaker Dr & Centennial Dr	Add hazard board to stop sign; install oversized pedestrian signs; add zebra crosswalk to south leg with additional pedestrian signs	Enhance driver compliance at stop sign; improve pedestrian safety			Difficult to make left-turn from Centennial Dr. Sightlines need to be reviewed. Difficult to see north from Centennial Dr. Parking restrictions may help.		Carried. 15m parking restriction will be added on northwest corner (on Diefenbaker Dr) to improve sightlines.
Ŋ	33rd St & Tilley	Zebra pedestrian crosswalk (west leg)	Improve pedestrian safety (connects to Confederation Park School)					Carried.
9	John A McDonald - in front of Confederation Park School	Send speed data to Police Service to consider enforcement during school hours	Reduce speed (during school hours)	Add to photo radar locations				Carried. Photo radar program is operated by SGI.
7	33rd St; Confederation Dr; Diefenbaker Dr	Install speed display boards; Send speed data to Police Services to consider enforcement	Reduce speed	John A MacDonald (in front of school); Diefenbaker Dr - Douglas to Steeves Ave; Centennial Dr school zones; Confederation Dr near Palmer Pl		Add Steeves Ave (southbound install at Carter Cres (south) & northbound install on Carter Cres (north)); 33rd St install before Byng Ave (eastbound); Diefenbaker Dr install at curve (northbound), Fisher Cres (westbound), or south of Centennial Dr (northbound)		Carried. See Speed Board & Enforcement Location Selection

Decision Matrix – Recommendations proposed at October 22, 2015 meeting