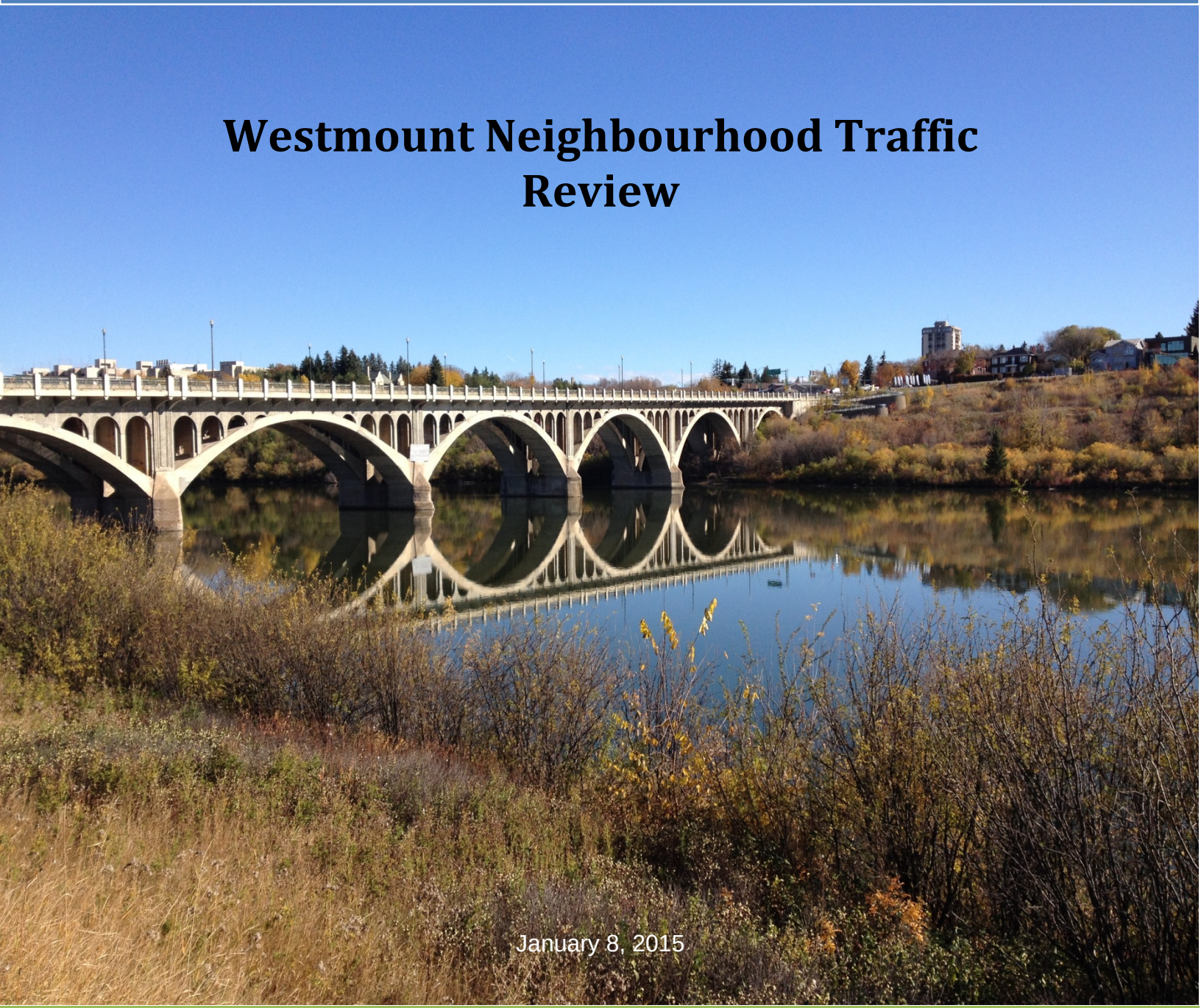
City of Saskatoon

Westmount Neighbourhood Traffic Review



January 8, 2015

Transportation & Utilities Department

Acknowledgements

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

- Westmount residents
- Westmount 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 Troy Davies

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 April of 2014 to identify traffic concerns and potential solutions within the Westmount 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 Westmount 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 Westmount Traffic Management Plan is illustrated in **Exhibit ES-1**.

Table ES-1: Westmount Neighbourhood Recommended Improvements

Location	Recommended Improvement	Time Frame
All uncontrolled intersections	34 yield signs	1 to 2 years
Bedford Road & Avenue K; Bedford Road & Avenue I	4 stop signs (east-west facing)	
Rusholme Roadd between Avenue M & Avenue K	Extend school zone	
Avenue H & 31st Street	2 zebra crosswalks on Avenue H	
29th Street & McMillan Avenue	2 zebra crosswalks on 29th Street	
29th Street & Avenue L	2 zebra crosswalks on 29th Street	
29th Street & Avenue I	1 zebra crosswalk on 29th Street & move mailboxes on southeast corner	
McMillan Avenue & Trotter Crescent	1 raised median island on McMillan Avenue	3 to 5 years (devices will be installed temporarily until proven effective)
McMillan Avenue & curve north of 31st Street	2 raised median islands on McMillan Avenue	
29th Street & McMillan Avenue	2 curb extensions on 29th Street	
29th Street & Avenue L	2 curb extensions on 29th Street	
Avenue M between 22nd Street & 23rd Street	Sidewalk (west side)	5 years plus

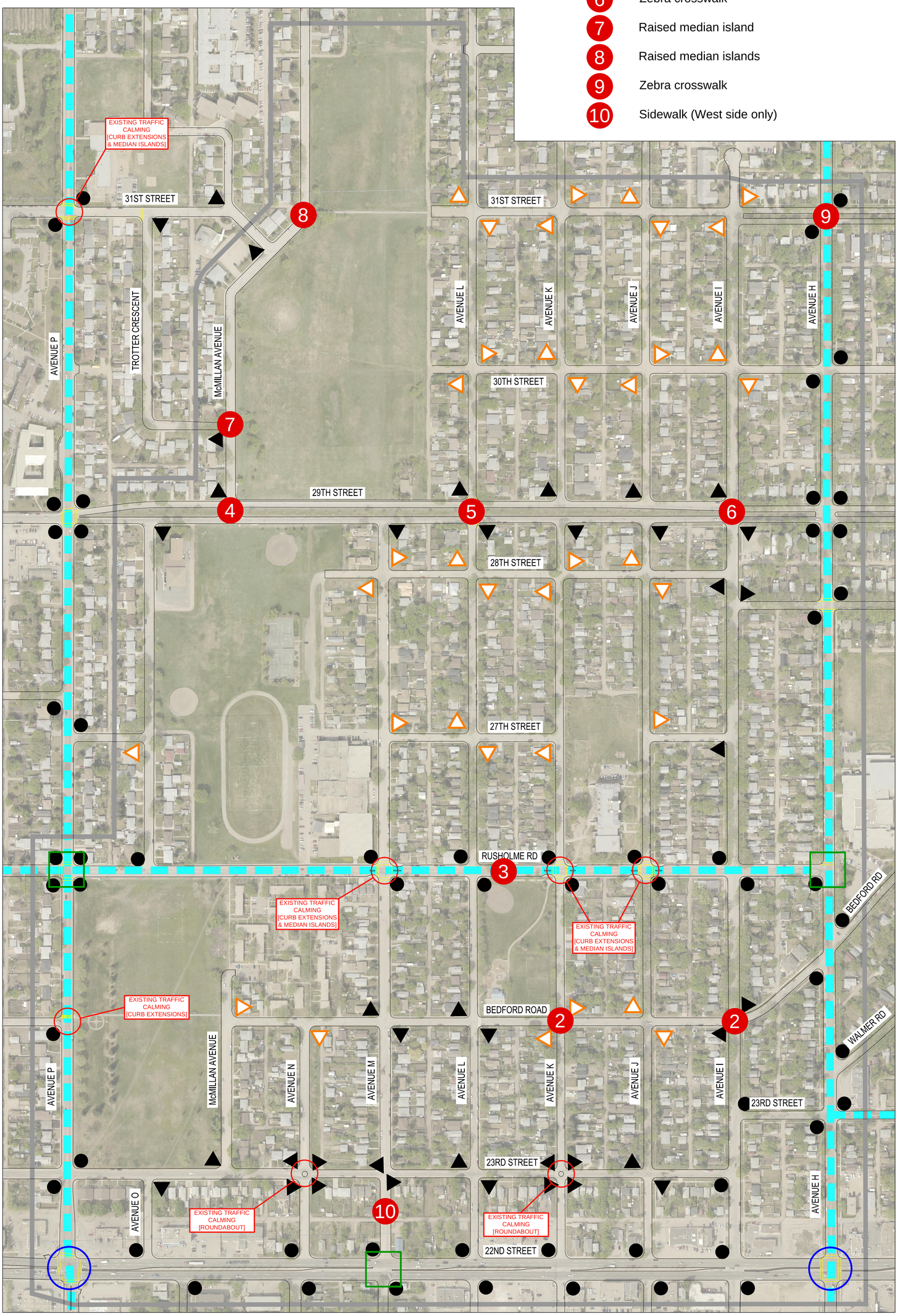
WESTMOUNT TRAFFIC PLAN

City of Saskatoon

LEGEND

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

LOCATION	MEASURE PROPOSED
1	Proposed Yield signs (various locations)
2	Stop signs
3	School zone expansion
4	Zebra crosswalks & curb extensions
5	Zebra crosswalks & curb extensions
6	Zebra crosswalk
7	Raised median island
8	Raised median islands
9	Zebra crosswalk
10	Sidewalk (West side only)



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1. Introduction

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

The Westmount neighbourhood is located on the west side of the South Saskatchewan River and is bound by Avenue H North to the east, 22nd Street West to the south, 31st Street West to the north, and a skewed border on the west which runs along Avenue P North, Avenue O North, and McMillan Ave. The area use is mostly residential, with schools along Rusholme Road (E.D. Feehan Catholic High School and Westmount Community School), and some commercial land use adjacent to 22nd 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 (3 to 5 years) or long-term (5 years plus).

2. Identifying Issues, Concerns, & Possible Solutions

A public meeting was held in April 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 Westmount, the nearby arterial streets (Avenue H, Avenue P, 22nd Street, and 33rd 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:

- McMillan Avenue between 29th Street & 33rd Street: speeding near park; shortcutting to and from 33rd Street.
- McMillan Avenue between 23rd Street & Bedford Road
- 29th Street: increased traffic volumes as a result of 25th Street opening; speeding
- Bedford Road & Avenue K (near park): coming onto Bedford Road from Avenue H is a shortcut going west; speeding
- Rusholme Road
- Avenue L between 29th Street & 33rd Street

Proposed solutions identified by residents:

- 29th Street between Avenue P and McMillan Avenue: narrow the road; install a stop sign
- Bedford Road & Avenue K: yield sign should be changed to stop sign; install speed humps.
- Avenue L between 29th Street & 33rd Street: install speed humps or roundabouts.
- Implement 40kph speed zone in particular areas.
- Install “Traffic-calmed Neighbourhood” signage (or something similar that reminds motorists they are in a neighbourhood and to drive slower) at major entrances into the neighbourhood.
- Consider snow removal / graders before implementing traffic calming devices.
- Consider stop signs instead of yield signs.

CONCERN 2 - PEDESTRIAN SAFETY

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:

- Avenue H: no one slows down in the school zone at Bedford Road and cars pass on the right when one is making a left turn into Rusholme Road; there are no safe crossings between 29th Street & 33rd Street.
- McMillan Avenue & 29th Street: children cross here; improve crossing
- McMillan Avenue & 31st Street: unsafe to cross; daycare nearby
- 29th Street & Avenue I: parked vehicles obstructs view of pedestrians; busy pedestrian crossing due to the convenience store.
- Bedford Road & Avenue K: a lot of children in the area
- Rusholme Road: the entire length should be a school zone; it's 50kph for one block, then 30kph for one block etc.

Proposed solutions identified by residents:

- Avenue H & Rusholme Road: put curbing or a diverter in front of the bus stop on the east side of Avenue H just before the Rusholme Road crosswalk.
- McMillan Avenue & 29th Street: roundabout may help
- McMillan Avenue & 31st Street: install traffic calming to improve crossing
- Better pedestrian crossing signs (or possibly crossing lights) where kids are crossing for schools.
- Bedford Road Collegiate: construct a drop off/pickup zone for students.
- Rusholme Road: extend school zone all the way from Avenue H to Avenue W. There are a number of schools adjacent to this roadway.
- Install sidewalk between 22nd Street & 23rd Street.

CONCERN 3 – MAINTENANCE

Residents were concerned about the condition of the streets in Westmount (i.e. snow clearing, potholes, tree trimming, and temporary traffic calming devices), particularly 23rd Street where a number of temporary traffic calming devices were installed as part of the Blairmore Bikeway.

Neighbourhood concerns regarding maintenance were at the following locations:

- 23rd Street bike route is a great idea however from Avenue N to Idylwyld Drive is in deplorable shape, not safe for bikes or cars as people try to avoid the numerous potholes.
- 23rd Street: Roundabouts are a hazard and the temporary barriers should not be used; graders tear them up; broken barriers and bolts are left scattered on the road; in the winter they're buried in snow, dirt, and gravel and garbage collects over them; they are never cleaned out which makes them an eyesore.
- New homes are being constructed in the area are causing more heavy vehicle traffic from 22nd Street; trucks can't pass temporary roundabouts on 23rd Street.

Proposed solutions identified by residents:

- Remove temporary traffic calming devices on 23rd Street.
- Resurface 23rd Street to make it smoother for cyclists.

CONCERN 4 – BORDERING ARTERIAL STREETS

22nd Street is a major arterial which borders Westmount on the south end. Specific concerns were identified during the public consultation.
Neighbourhood concerns regarding maintenance were at the following locations along 22nd Street: • Avenue H: high traffic volumes causing congestion; collisions; need for a left turn signal phase for northbound & southbound. • Avenue P: high pedestrian location
Proposed solutions identified by residents: • Avenue H: install left turn signal phase for northbound & southbound. • Avenue P: install left turn signal phase (may give pedestrians opportunity to cross)

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 Westmount 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)
McMillan Avenue	23rd Street & Bedford Road	Local	130	43.4
Bedford Road	Avenue K & Avenue L		170	40.1
McMillan Avenue	29th Street & 30th Street		490	46.6
Avenue L	29th Street & 30th Street		570	38.7
29th Street	Avenue O & McMillan Avenue	Major Collector	4,775	53.6
29th Street	Avenue M & McMillan Avenue		3,410	59.6
Avenue H	30th Street & 31st Street	Arterial	2,930	52.2

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 the 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
29th Street & McMillan Avenue	482	4,820	All-way Stop Not Warranted
31st Street & McMillan Avenue	55	610	
29th Street & Avenue I	585	6,880	
Avenue H & 31st Street	596	5,960	
29th Street & Avenue L	599	6,390	
28th Street & Avenue H	572	5,740	

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
29th Street & McMillan Avenue	6	Pedestrian Devices Not Warranted
31st Street & McMillan Avenue	4	
29th Street & Avenue I	36	
Avenue H & 31st Street	27	
29th Street & Avenue L	24	
28th Street & Avenue H	14	

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 volumes and the 85th percentile speed was higher than expected on 29th Street. McMillan Avenue was also a concern for shortcutting between 29th Street and 33rd Street. 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

Location	Recommended Improvement[1]	Justification
Rusholme Road between Avenue M & Avenue K	Extend School Zone	Reduce speed near schools
29th Street & McMillan Avenue	Curb extensions on 29th Street	Reduce speed between parks
29th Street & Avenue L	Curb extensions on 29th Street	Reduce speed
McMillan Avenue & Trotter Crescent	Raised median island on McMillan Avenue	Reduce speed near park
McMillan Avenue & curve north of 31st Street	Raised median islands on McMillan Avenue	Reduce speed near park (connects to multi-use path)

[1] For details on these devices refer to the *City of Saskatoon Traffic Calming Guidelines and Tools*

2. Pedestrian Safety

Westmount residents identified pedestrian safety near the school sites and parks (E.D. Feehan Catholic High School, Westmount Community School, Pierre Radisson Park, and Westmount Park) as a concern. 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 – School Sites

Location	Recommended Improvement	Purpose
29th Street & McMillan Avenue	Zebra crosswalks & curb extensions (noted in previous section) on 29th Street	Improve pedestrian safety near parks
29th Street & Avenue L	Zebra crosswalks & curb extensions (noted in previous section) on 29th Street	Improve pedestrian safety
29th Street & Avenue I	Zebra crosswalk on 29th Street & move mailboxes on southeast corner	Improve pedestrian safety near convenience store & enhance visibility
McMillan Avenue & curve north of 31st Street	Raised median islands (noted in previous section) on McMillan Avenue	Improve pedestrian safety near park & daycare
Avenue H & 31st Street	Zebra crosswalks on Avenue H	Improve pedestrian safety (currently no marked crossings on Avenue H between 29th Street & 33rd Street)
Avenue M between 22nd Street & 23rd Street	Sidewalk on both sides	Improve pedestrian safety

It should be noted, implementation of the Drop-off & Pick-up Zone is based on the discretion of the schools (more information provided at saskatoon.ca click on "S" for School Zones).

3. Maintenance

The concerns regarding potholes and roadway maintenance were forwarded to the Public Works Division for further consideration.

Concerns regarding the Blairmore Bikeway (23rd Street cycling route) have been forwarded for further consideration as part of that project.

4. 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 neighbourhood are bound by arterial streets, such as 22nd 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 securing funding to complete these types of assessments.

5. Traffic Control Retrofit

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. Westmount was one of the neighbourhoods selected in 2014 based on a highest average number of collisions per uncontrolled intersection, per year.

During the initial public consultation a yield sign plan for the area was shown to the residents. The residents were in favour of the recommendations, asking only that the yield signs be upgraded to stop signs at two intersections (Bedford Road at Avenue K & Avenue I) to enhance compliance.

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.

The improvement that was added based on the feedback received at the follow up meeting held in October 2014 is shown in **Table 4-3**.

Table 4-3: Added Improvements

Location	Improvement	Reason
Avenue M between 22nd Street & 23rd Street	Install sidewalk	Added crossing at Avenue M & 22nd Street has introduced higher pedestrian volumes on Avenue M north of 22nd Street. There's currently no sidewalk in this section of road therefore pedestrian safety is a concern.

All Civic Divisions supported the Traffic Management Plan.

5. Recommended Plan and Cost Estimates

Stage 4, the last stage of the process, is to install the recommended improvements for the Westmount 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).

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:** Marked Pedestrian Crosswalks Cost Estimate
- **Table 5-3:** Traffic control signage – Stop & Yield Cost Estimate (Funded by Stop & Yield Retrofit Program)
- **Table 5-4:** Miscellaneous Signage Cost Estimate
- **Table 5-5:** Sidewalk Cost Estimate

Table 5-1: Traffic Calming Cost Estimate

Location	Traffic Calming Device (s)	Cost Estimate		Time Frame
		Temporary	Permanent	
29th Street & Avenue L	2 curb extensions	$1,000	$60,000	1 to 5 years
29th Street & McMillan Avenue	2 curb extensions	$1,000	$60,000	
McMillan Avenue & Trotter Crescent	1 raised median island	$500	$6,000	
McMillan Avenue & curve north of 31st Street	2 raised median islands	$500	$12,000	
	Total	$3,500	$138,000	

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	Device (s)	Cost Estimate	Time Frame
29th Street & Avenue L	4 signs & zebra markings	$1,200	1 to 2 years
29th Street & Avenue I	4 signs & 2 zebra markings	$1,400	
29th Street & McMillan Avenue	4 signs & 2 zebra markings	$1,400	
Avenue H & 31st Street	4 signs & zebra markings	$1,200	
	Total	$5,200	

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 (Funded by Stop & Yield Retrofit Program)

Location	Device (s)	Number of Signs	Cost Estimate	Time Frame
All uncontrolled intersections	Yield signs	34	$8,500	1 to 2 years
Bedford Road & Avenue K; Bedford Road & Avenue I	Stop signs	4	$1,000	
		Total	$9,500	

Table 5-4: Miscellaneous Signage Cost Estimate

Location	Device (s)	Number of Signs	Cost Estimate	Time Frame
Rusholme Road between Avenue M & Avenue K	Extend school zone; remove existing signs	0	$0	3 to 5 years
		Total	$0	

Table 5-5: Sidewalk Cost Estimate

Location	Device (s)	Cost Estimate	Time Frame
Avenue M between 22nd Street & 23rd Street	Sidewalk (west side)	$37,400	3 to 5 years
	Total	$37,400	

The total cost estimate for the signage and temporary traffic calming devices to be installed in 2015 is **$18,200**. The addition of permanent traffic calming devices and sidewalks results in a total cost estimate of **$175,400**.

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 Westmount Traffic Management Plan is illustrated in **Exhibit 5-1**.

Table 5-6: Westmount Neighbourhood Recommended Improvements

Location	Recommended Improvement	Time Frame
All uncontrolled intersections	34 yield signs	1 to 2 years
Bedford Road & Avenue K; Bedford Road & Avenue I	4 stop signs (east-west facing)	
Rusholme Road between Avenue M & Avenue K	Extend school zone	
Avenue H & 31st Street	2 zebra crosswalks on Avenue H	
29th Street & McMillan Avenue	2 zebra crosswalks on 29th Street	
29th Street & Avenue L	2 zebra crosswalks on 29th Street	
29th Street & Avenue I	1 zebra crosswalk on 29th Street & move mailboxes on southeast corner	
McMillan Avenue & Trotter Crescent	1 raised median island on McMillan Avenue	3 to 5 years (devices will be installed temporarily until proven effective)
McMillan Avenue & curve north of 31st Street	2 raised median islands on McMillan Avenue	
29th Street & McMillan Avenue	2 curb extensions on 29th Street	
29th Street & Avenue L	2 curb extensions on 29th Street	
Avenue M between 22nd Street & 23rd Street	Sidewalk (west side)	5 years plus

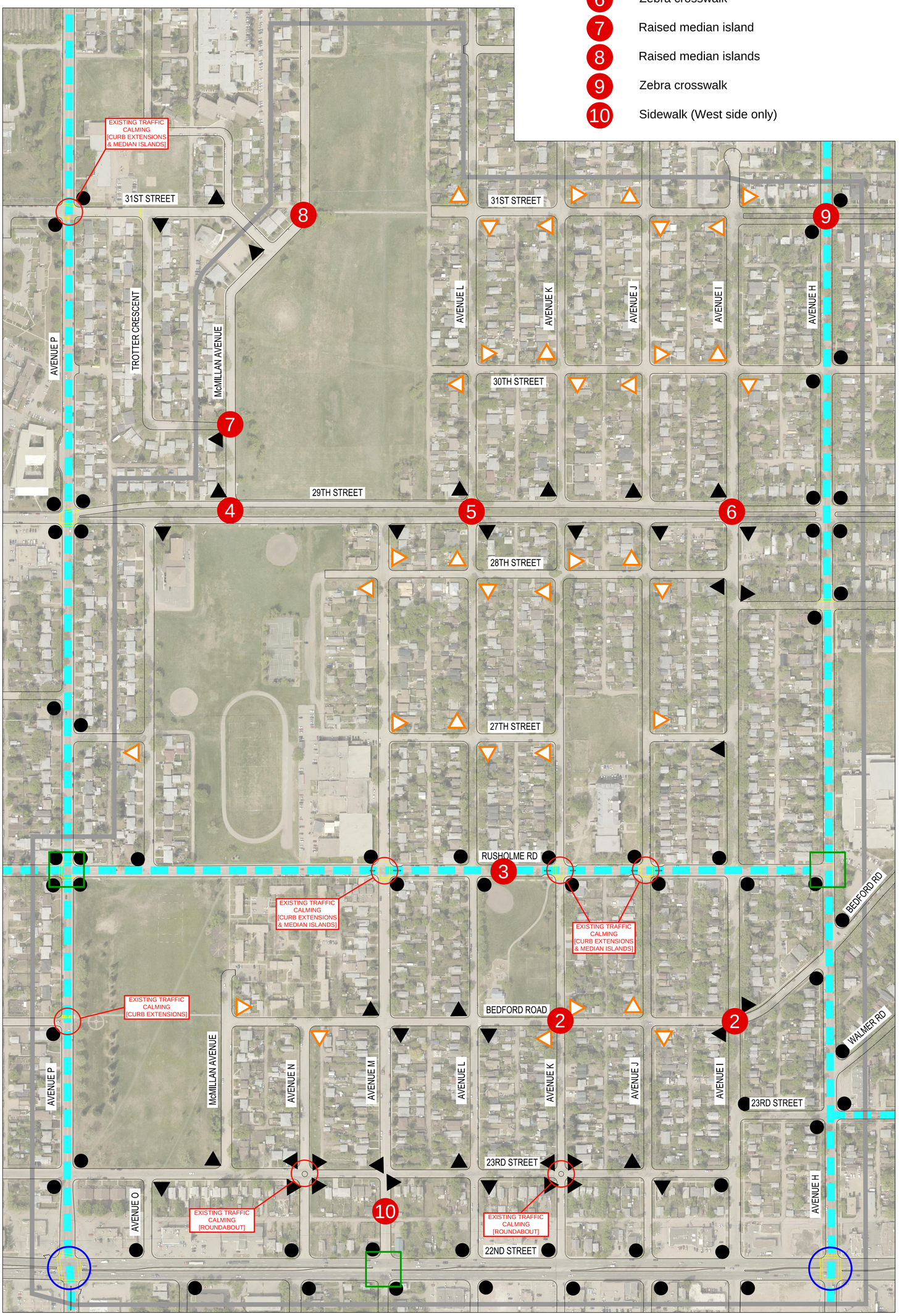
WESTMOUNT TRAFFIC PLAN

City of Saskatoon

LEGEND

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

LOCATION	MEASURE PROPOSED
1	Proposed Yield signs (various locations)
2	Stop signs
3	School zone expansion
4	Zebra crosswalks & curb extensions
5	Zebra crosswalks & curb extensions
6	Zebra crosswalk
7	Raised median island
8	Raised median islands
9	Zebra crosswalk
10	Sidewalk (West side only)



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
29th Street & McMillan Avenue	6% - Condition NOT met	4-way stop at Avenue P & 29th Street within 200m– Condition NOT met	Conditions not met therefore all-way stop NOT warranted
31st Street & McMillan Avenue	28% - Condition met (three-way stop)	No all-way stop or traffic signals within 200m – Condition met	Conditions met therefore check additional criteria
29th Street & Avenue I	9% - Condition NOT met	4-way stop at Avenue H & 29th Street within 200m – Condition NOT met	Conditions not met therefore all-way stop NOT warranted
Avenue H & 31st Street	6% - Condition NOT met	No all-way stop or traffic signals within 200m – Condition met	Conditions not met therefore all-way stop NOT warranted
29th Street & Avenue L	7% - Condition NOT met	No all-way stop or traffic signals within 200m – Condition met	Conditions not met therefore all-way stop NOT warranted
28th St & Avenue H	3% - Condition NOT met	4-way stop at Avenue H & 29th St within 200m – Condition NOT met	Conditions not met therefore all-way stop NOT warranted

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
31st Street & McMillan Avenue	0 collisions – Criteria NOT met	55 peak hour, 610 – 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)

Avenue H & 31st Street:

1. Lanes Priority Points:			
L =	2	lanes	= number of lanes.
LANF =	0	points	= (L-2) x 3.6 to a max of 15 points, urban x-section only.
2. Median Priority Points:			
MEDF =	6	points	= indicating there is no physical median here.
3. Speed Priority Points:			
S =	50	kph	= speed limit or 85th percentile speed.
SPDF =	6.7	points	= (S-30) / 3 to a maximum of 10 points.
4. Pedestrian Protection Location:			
D =	400	m	= distance from study location to nearest protected crosswalk.
LOCF =	15	points	= (D-200) / 13.3 to a maximum of 15 points.
Actual value =	15.03759	points	points.
5. Pedestrian/Vehicle Volume Priority Points:			
H =	5.0		= (hours) duration of counting period.
Ps =	27.0		= total number of children, teenagers, seniors and/or impaired counted.
Pa =	0.0		= total number of adults counted.
Pw =	40.5		= weighted average of pedestrians crossing the main street.
Pcm =	8.1		= weighted average hourly pedestrian volume crossing the main street.
V =	2008.0		= volume of traffic passing through the crossing(s).
Vam =	401.6		= average hourly volume of traffic passing through the crossing(s).
VOLF =	6.5	points	= Vam x Pcm / 500
6. Satisfaction of Installation Criteria:			
SUMF =	(LANF + MEDF + SPDF + LOCF + VOLF)		
=	**34**	**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.

McMillan Avenue & 31st Street:

1. Lanes Priority Points:			
L =	2	lanes	= number of lanes.
LANF =	0	points	= (L-2) x 3.6 to a max of 15 points, urban x-section only.
2. Median Priority Points:			
MEDF =	6	points	= indicating there is no physical median here.
3. Speed Priority Points:			
S =	50	kph	= speed limit or 85th percentile speed.
SPDF =	6.7	points	= (S-30) / 3 to a maximum of 10 points.
4. Pedestrian Protection Location:			
D =	300	m	= distance from study location to nearest protected crosswalk.
LOCF =	7.5	points	= (D-200) / 13.3 to a maximum of 15 points.
5. Pedestrian/Vehicle Volume Priority Points:			
H =	5.0		= (hours) duration of counting period.
Ps =	4.0		= total number of children, teenagers, seniors and/or impaired counted.
Pa =	0.0		= total number of adults counted.
Pw =	6.0		= weighted average of pedestrians crossing the main street.
Pcm =	1.2		= weighted average hourly pedestrian volume crossing the main street.
V =	211.0		= volume of traffic passing through the crossing(s).
Vam =	42.2		= average hourly volume of traffic passing through the crossing(s).
VOLF =	0.1	points	= Vam x Pcm / 500
6. Satisfaction of Installation Criteria:			
SUMF =	(LANF + MEDF + SPDF + LOCF + VOLF)		
=	**20**	**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.

29th Street & McMillan Avenue:

1. Lanes Priority Points:			
L =	2	lanes	= number of lanes.
LANF =	0	points	= (L-2) x 3.6 to a max of 15 points, urban x-section only.
2. Median Priority Points:			
MEDF =	3	points	= indicating there is no physical median here.
3. Speed Priority Points:			
S =	50	kph	= speed limit or 85th percentile speed.
SPDF =	6.7	points	= (S-30) / 3 to a maximum of 10 points.
4. Pedestrian Protection Location:			
D =	175	m	= distance from study location to nearest protected crosswalk.
LOCF =	0.0	points	= (D-200) / 13.3 to a maximum of 15 points.
5. Pedestrian/Vehicle Volume Priority Points:			
H =	5.0		= (hours) duration of counting period.
Ps =	6.0		= total number of children, teenagers, seniors and/or impaired counted.
Pa =	0.0		= total number of adults counted.
Pw =	9.0		= weighted average of pedestrians crossing the main street.
Pcm =	1.8		= weighted average hourly pedestrian volume crossing the main street.
V =	1630.0		= volume of traffic passing through the crossing(s).
Vam =	326.0		= average hourly volume of traffic passing through the crossing(s).
VOLF =	1.2	points	= Vam x Pcm / 500
6. Satisfaction of Installation Criteria:			
SUMF =	(LANF + MEDF + SPDF + LOCF + VOLF)		
=	**11**	**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.

Avenue H & 28th Street:

1. Lanes Priority Points:			
L =	2	lanes	= number of lanes.
LANF =	0	points	= (L-2) x 3.6 to a max of 15 points, urban x-section only.
2. Median Priority Points:			
MEDF =	6.0	points	= indicating there is no physical median here.
3. Speed Priority Points:			
S =	50	kph	= speed limit or 85th percentile speed.
SPDF =	6.7	points	= (S-30) / 3 to a maximum of 10 points.
4. Pedestrian Protection Location:			
D =	95	m	= distance from study location to nearest protected crosswalk.
LOCF =	0.0	points	= (D-200) / 13.3 to a maximum of 15 points.
5. Pedestrian/Vehicle Volume Priority Points:			
H =	5.0		= (hours) duration of counting period.
Ps =	14.0		= total number of children, teenagers, seniors and/or impaired counted.
Pa =	0.0		= total number of adults counted.
Pw =	21.0		= weighted average of pedestrians crossing the main street.
Pcm =	4.2		= weighted average hourly pedestrian volume crossing the main street.
V =	2263.0		= volume of traffic passing through the crossing(s).
Vam =	452.6		= average hourly volume of traffic passing through the crossing(s).
VOLF =	3.8	points	= Vam x Pcm / 500
6. Satisfaction of Installation Criteria:			
SUMF =	(LANF + MEDF + SPDF + LOCF + VOLF)		
=	**16**	**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.

29th Street & Avenue L:

1. Lanes Priority Points:			
L =	2	lanes	= number of lanes.
LANF =	0	points	= (L-2) x 3.6 to a max of 15 points, urban x-section only.
2. Median Priority Points:			
MEDF =	3.0	points	= indicating there is no physical median here.
3. Speed Priority Points:			
S =	50	kph	= speed limit or 85th percentile speed.
SPDF =	6.7	points	= (S-30) / 3 to a maximum of 10 points.
4. Pedestrian Protection Location:			
D =	390	m	= distance from study location to nearest protected crosswalk.
LOCF =	14.3	points	= (D-200) / 13.3 to a maximum of 15 points.
5. Pedestrian/Vehicle Volume Priority Points:			
H =	5.0		= (hours) duration of counting period.
Ps =	24.0		= total number of children, teenagers, seniors and/or impaired counted.
Pa =	0.0		= total number of adults counted.
Pw =	36.0		= weighted average of pedestrians crossing the main street.
Pcm =	7.2		= weighted average hourly pedestrian volume crossing the main street.
V =	2277.0		= volume of traffic passing through the crossing(s).
Vam =	455.4		= average hourly volume of traffic passing through the crossing(s).
VOLF =	6.6	points	= Vam x Pcm / 500
6. Satisfaction of Installation Criteria:			
SUMF =	(LANF + MEDF + SPDF + LOCF + VOLF)		
=	**16**	**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.

29th Street & Avenue I:

1. Lanes Priority Points:			
L =	2	lanes	= number of lanes.
LANF =	0	points	= (L-2) x 3.6 to a max of 15 points, urban x-section only.
2. Median Priority Points:			
MEDF =	3.0	points	= indicating there is no physical median here.
3. Speed Priority Points:			
S =	50	kph	= speed limit or 85th percentile speed.
SPDF =	6.7	points	= (S-30) / 3 to a maximum of 10 points.
4. Pedestrian Protection Location:			
D =	95	m	= distance from study location to nearest protected crosswalk.
LOCF =	0.0	points	= (D-200) / 13.3 to a maximum of 15 points.
5. Pedestrian/Vehicle Volume Priority Points:			
H =	5.0		= (hours) duration of counting period.
Ps =	36.0		= total number of children, teenagers, seniors and/or impaired counted.
Pa =	0.0		= total number of adults counted.
Pw =	54.0		= weighted average of pedestrians crossing the main street.
Pcm =	10.8		= weighted average hourly pedestrian volume crossing the main street.
V =	2603.0		= volume of traffic passing through the crossing(s).
Vam =	520.6		= average hourly volume of traffic passing through the crossing(s).
VOLF =	11.2	points	= Vam x Pcm / 500
6. Satisfaction of Installation Criteria:			
SUMF =	(LANF + MEDF + SPDF + LOCF + VOLF)		
=	**21**	**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.