PUBLIC AGENDA
STANDING POLICY COMMITTEE
ON TRANSPORTATION

Tuesday, February 9, 2016, 9:00 a.m.

Council Chamber, City Hall

Committee Members:

Councillor R. Donauer, Chair, Councillor M. Loewen, Vice-Chair, Councillor C. Clark, Councillor T. Davies, Councillor D. Hill, His Worship the Mayor (Ex-Officio)

Pages

1. CALL TO ORDER

2. CONFIRMATION OF AGENDA

   Recommendation

   That the agenda be confirmed as presented.

3. DECLARATION OF CONFLICT OF INTEREST

4. ADOPTION OF MINUTES

   Recommendation

   That the minutes of the Regular Meeting of the Standing Policy Committee on Transportation held on January 11, 2016, be adopted.

5. UNFINISHED BUSINESS

6. COMMUNICATIONS (requiring the direction of the Committee)

   6.1 Delegated Authority Matters

   6.2 Matters Requiring Direction

   6.3 Requests to Speak (new matters)

7. REPORTS FROM ADMINISTRATION

7.1 Delegated Authority Matters

7.1.1 Capital Project #2407 - North Commuter Parkway and Traffic Bridge - Construction Update (Files CK. 6050-10 x 6050-8, CS. 6050-10 and TS. 6050-104-044) 4 - 6

Recommendation

That the report of the General Manager, Transportation and Utilities Department be received as information.

7.1.2 Providing Free Transit on Election Days (Files CK. 7300-1 and TR. 7300-1) 7 - 8

Recommendation

That the report of the General Manager, Transportation and Utilities Department be received as information.

7.1.3 2016 Major Projects with Extended Traffic Restrictions (Files CK. 6315-1 and TS. 6005-1) 9 - 13

Recommendation

That the report of the General Manager, Transportation and Utilities Department be received as information.

7.2 Matters Requiring Direction

7.2.1 Lakeview Neighbourhood Traffic Review (Files CK. 6320-1) 14 - 88

Recommendation

That the Neighbourhood Traffic Review for the Lakeview neighbourhood be adopted as the framework for future traffic improvements in the area, to be undertaken as funding is made available through the annual budget process.

7.2.2 Meadowgreen Neighbourhood Traffic Review (Files CK. 6320-1) 89 - 170

Recommendation

That the Neighbourhood Traffic Review for the Meadowgreen neighbourhood be adopted as the framework for future traffic improvements in the area, to be undertaken as funding is made available through the annual budget process.

8. URGENT BUSINESS

9. MOTIONS (Notice Previously Given)

10. GIVING NOTICE

11. IN CAMERA AGENDA ITEMS

12. ADJOURNMENT

Capital Project #2407 – North Commuter Parkway and Traffic Bridge – Construction Update

Recommendation
That the information be received.

Topic and Purpose
This report is to provide the Standing Policy Committee on Transportation with an update of the North Commuter Parkway and Traffic Bridge project construction progress.

Report Highlights
1. Construction activities commenced in early December 2015 at the Traffic Bridge.
2. Demolition of the south two spans of the Traffic Bridge was successfully conducted on January 10, 2016.
3. Graham Commuter Partners (GCP) is planning to construct the new north and south bridge abutments, and refurbish the south in-river pier at the Traffic Bridge throughout Spring and Summer 2016. The south span of the new bridge should be erected in Summer 2016.
4. Permit applications for in-river construction of the North Commuter Parkway Bridge have been prepared and submitted by GCP to the necessary regulatory authorities. Once received, the contractor can begin construction of an access roadway to the west bank of the river, and then begin construction of the first stage earthen berm for the new bridge. This work is expected to be conducted prior to April 2016.

Strategic Goal
Construction of the North Commuter Parkway and Traffic Bridge supports the Strategic Goal of Moving Around as it will optimize the flow of people and goods in and around the city.

Background
At a special meeting held on September 8, 2015, City Council awarded the RFP for the North Commuter Parkway and Traffic Bridge, naming GCP the Preferred Proponent. At its meeting on November 23, 2015, City Council received information regarding the financial details of the Project Agreement (PA) with GCP.

Report
Design Status
GCP commenced detailed design of the project immediately following execution of the PA. At this time, 30% detailed designs for much of the new infrastructure has been

reviewed by the project team and comments returned to GCP for their attention in further developing its designs.

Traffic Bridge Construction Status

GCP began mobilization to the Traffic Bridge construction site in early November 2015. Construction of the first stage earthen berm, extending from Rotary Park to the centre in-river pier, commenced December 15 and was completed December 22, 2015.

Demolition of the south two spans of the Traffic Bridge was successfully conducted on January 10, 2016. Following this, the demolished spans were dismantled and removed from site. Currently, the south berm is being removed south to the south in-river pier, and a new north berm is being constructed from the north abutment out to the northernmost in-river pier. It's expected that the north berm will be completed in early February 2016. Following this, the northernmost span will be imploded.

GCP is planning to construct the new north and south bridge abutments, and refurbish the south in-river pier throughout Spring and Summer 2016. The south span of the new bridge should be erected in Summer 2016.

North Commuter Parkway Construction Status

Permit applications for in-river construction have been prepared and submitted by GCP to the necessary regulatory authorities. Cleanup of an environmentally contaminated site on the west side of the new bridge crossing is planned to proceed as well. Once complete, GCP will begin construction of an access roadway down the west bank of the rivers edge and then begin construction of the first stage earthen berm for the new bridge. This work is expected to be conducted prior to April 2016.

Preliminary earthworks for the roadway through the Northeast Swale is planned to proceed in February 2016. Modification of the off-ramp from Circle Drive East to Attridge Drive (eastbound) is scheduled as work for Spring/Summer 2016, as is the modification to the Attridge Drive/Central Avenue intersection (new dual left turn bay from eastbound to northbound and signal light timing modifications). Utility construction for the widening of Central Avenue from Attridge Drive to Fedoruk Drive is also anticipated in Spring/Summer 2016.

Public and/or Stakeholder Involvement

Stakeholder involvement will be required at various stages of the project. Three public open house events have been completed since December 2015; one in Nutana on December 2, one in Forest Grove on January 26, and one in Silverwood Heights on January 27.

Community events will be planned in order to engage and educate the citizens. The Administration will coordinate these activities with applicable stakeholders as necessary.

Communication Plan

The PA includes various communication requirements to be completed by GCP during both the construction and operating periods of the project. In addition, a communications agency has been retained through the Technical Advisor for the project, and a phased-in communications plan has been developed for the life of the project. Webpages for the North Commuter Parkway and Traffic Bridge have been updated and various community events will be planned in order to engage and educate citizens. Regular project updates are being provided to the general public.

Financial Implications

Capital Project #2407 has been approved for funding in the amount of $238.8M.

Other Considerations/Implications

There are no policy, environmental, privacy, or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

The North Commuter Parkway and Traffic Bridge project is scheduled for substantial completion in October 2018.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Report Approval

Written by:	Dan Willems, Special Projects Manager, Major Projects
Reviewed by:	Mike Gutek, Director of Major Projects
Approved by:	Jeff Jorgenson, General Manager, Transportation & Utilities Department

TRANS DW – CP2407 – NCP and TB – Construction Update – February 9, 2016

Providing Free Transit Service on Election Days

Recommendation
That the information be received.

Topic and Purpose
The purpose of this report is to provide information for offering transit service on all Election days.

Report Highlights
Administration will provide a downloadable and printable ticket that can be used by Citizens to access Transit during all election days.

Strategic Goals
This report supports the Strategic Goal of Moving Around, including the 4-Year Priority to change attitudes around public transit and increase Saskatoon Transit ridership.

Background
During consideration of this item at the 2016 Preliminary Business Plan and Budget meeting held on November 30 and December 1, 2015, City Council resolved:

> "That the Administration report back to the Standing Policy Committee on Transportation on a transit travel voucher similar to municipal elections to be utilized on all levels of government election days."

Report
For previous Municipal Elections in Saskatoon, transit tickets were included in voter information flyers and were available on-line. People were encouraged to take the bus to polling stations using the free tickets and would be given a ticket at the polling station for the return trip. Participation in this program during the last Municipal Election was extremely low.

Transit investigated electronic options utilizing printable tickets with its current farebox vendor that can be scanned similar to a transfer. Transit is continuing to work with the hardware provider to determine if there is a solution that can be put in place for the fall Municipal Election, by utilizing a printable ticket that can be scanned. However, this solution cannot be put in place prior to the upcoming provincial election.

For the upcoming provincial election, Administration will make available tickets to Saskatoon Citizens that can be used to ride the bus on all Election days. The Citizens will present the paper ticket to the operator who will then manually record the ride into the system. These tickets will be made available on the webpage and at the Transit Customer Service Center.

Communication Plan

A communication plan will be developed for each election. Some ways that service on Election Day will be communicated include: social media, News Release, on Transit signage and website messaging.

Financial Implications

Communication and administration costs for the upcoming provincial election, based on the approach outlined in this report, will be minimal.

Other Considerations/Implications

There are no options, public or stakeholder involvement, policy, environmental, Privacy, or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

Follow-up will depend on the direction of City Council.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Report Approval

Written by: Christine Schultz, Accounting Coordinator I, Business Administration
Reviewed by: James McDonald, Director, Saskatoon Transit,
Approved by: Jeff Jorgenson, General Manager, Transportation & Utilities Department

TRANS CS - Providing Free Transit Service on Election Days-Feb 9-2016

2016 Major Projects with Extended Traffic Restrictions

Recommendation
That the information be received.

Topic and Purpose
The purpose of this report is to provide information on the major infrastructure projects with anticipated extended traffic restrictions planned for the 2016 construction season.

Report Highlights
1. Four major infrastructure projects have been planned for the 2016 construction season. Although each of these projects will require traffic restrictions, all will allow through traffic in both directions for the majority of the duration of the projects.
2. Details of the four projects are outlined, including the general scope, duration and expected traffic restrictions.
3. Transportation planning has been completed for each project. The four projects are sufficiently spread throughout the City, and the traffic impacts are not expected to create a cumulative traffic effect at any location.

Strategic Goals
The upgrading, preservation and maintenance of City of Saskatoon infrastructure supports the Strategic Goals of Asset and Financial Sustainability, Quality of Life and Moving Around.

Background
Major construction projects are required in order to improve the functionality of City infrastructure, and to ensure adequate rehabilitation or maintenance is performed to extend the lifecycle of the City's assets. In order to achieve these goals, traffic restrictions or closures of traffic lanes are typically required to perform the necessary work on these important projects. Some of these projects require extended traffic impacts, restrictions or closures, which may increase travel times or require users to reroute their commutes. This report provides a list of planned projects that will have an extended traffic impact to citizens in the 2016 construction season.

Report
2016 Major Projects

In the 2016 construction season, four projects are planned that will require traffic restrictions on major corridors. The major projects identified are listed in the table below:

2016 Major Projects with Extended Traffic Restrictions

Project	General Scope of Work	Project Duration	Traffic Restrictions
Broadway Avenue Rehabilitation (Note: A site rental will be implemented for this project as an incentive for the contractor to allocate sufficient resources and complete the work in a timely fashion)	• Rehabilitation work from Broadway Bridge to 8th Street • Removal and replacement of cast iron fittings and pipe segments • Removal and replacement of lead service connection lines • Resurfacing of the roadway	• Estimated to take 4 months • Administration will provide more detailed project timelines once the contractor provides the schedule and projected site rental days	Estimated closures and durations: • Approximately 1 week of bridge closure during work in the intersection of Broadway Avenue and 12th Street • Approximately 4 weeks of Bridge restriction during work between Broadway Bridge and 12th Street • Approximately 10 weeks of phased closures to segments of Broadway, traffic detoured onto Dufferin Street, the Bridge will be fully opened
Ruth Street Overpass Rehabilitation (Note: A site rental will be implemented for this project as an incentive for the contractor to allocate sufficient resources and complete the work in a timely fashion)	Repairs (identified and recommended through engineered design): • Removal of existing asphalt wearing surface and membrane • Removal of existing deck to below the top layer of reinforcement • Placement of new concrete deck and overlay • Modification of approach slab and expansion joints • Miscellaneous concrete repairs	• Estimated to take 5 months • Administration will provide more detailed project timelines once the contractor provides the schedule and projected site rental days	• Rehabilitation will be completed in phases and all traffic movements will be accommodated with a crossover allowing one lane of vehicular traffic in each direction for the duration of the project • There is a possibility that once demolition is complete, less rehabilitation is required than planned. This could shorten the closure duration.
Central Avenue and Attridge Drive Intersection Improvements	The work is included in the North Commuter Parkway and Traffic Bridge Project: • Completing a major intersection upgrade at Central and Attridge Drive • Project also includes a major realignment to the northbound Circle Drive to eastbound Attridge Drive on ramp	• Estimated to be completed during the 2016 construction season; however, construction timeframes have not been finalized with the proponent	• During the upgrades, all intersection turning movements, plus two lanes of traffic in all directions, will be maintained during morning and evening peak traffic timeframes • All other timeframes, one lane of travel can be reduced in each direction • All temporary lane restrictions will occur during off peak hours
Victor Road and Highway 11 Interchange at Stonebridge	• Construction of a new interchange at Victor Road over Highway 11 • The interchange will allow southbound access from Highway 11 onto Victor Road and northbound access to Highway 11 from Victor Road	• The project will resume in spring and is estimated to be completed in fall of 2016	• During construction, Highway 11 northbound and southbound traffic will be reduced from two lanes to single lane traffic

Transportation Planning

The planning process for each project involves a number of steps, with the level of detail depending on the complexity and expected impact to traffic flows in the area. The typical steps are as follows:

1. A traffic study is undertaken by the Transportation division to identify any required traffic signal retiming, expected traffic queue lengths, etc.
2. A detailed traffic management plan is developed to outline the type and location of traffic control devices, and a communication plan outlining how the public will be informed of the traffic impacts.
3. Once the traffic accommodation plans are physically in place, the Transportation division monitors traffic conditions and adjusts signal timings, modifications to detour routing, etc., if required.

When projects are expected to significantly impact traffic, an evaluation is undertaken to determine if the impacts will overlap from one project to another and if there are opportunities to coordinate resources for traffic detours.

For example, using the City's VISUM Transportation Model, a travel time comparison was made between the baseline conditions (normal roadway operations) and the Broadway Avenue and Ruth Street traffic restrictions, since those projects are the most closely related during the 2016 construction season. The findings were as follows:

1. The closing of Broadway Bridge is expected to have minimal impact on traffic volumes on Idylwyld Drive at Ruth Street.
2. The additional time expected for a driver to pass through the Idylwyld Drive construction zone, during peak timeframes, is approximately 30 seconds.
3. The closure of the Broadway Bridge during the Broadway Avenue rehabilitation project is not expected to significantly increase the driver delay passing through the Idylwyld Drive construction zone.

The four major projects noted above are spread throughout the city, and therefore, the associated traffic impacts are not expected to create a cumulative traffic effect at any location. Although this is a reasonably large project list for 2016, the total impact to drivers will be less than the impact in 2015, which included the full-closure University Bridge project and the Province's Highway 16 & Highway 11/12 Interchange project.

The City has assessed the Ruth Street Overpass and Broadway Avenue rehabilitation projects occurring concurrently, as this impacts two main routes between the southern portion of the city and the downtown. The following facts were identified through the traffic review:

- Idylwyld Freeway traffic to and from 8th Street will be unimpeded;
- Delays on Idylwyld Freeway at Ruth Street are not expected to be extensive; and
- The Broadway Bridge itself is expected to be fully closed for one week with an additional four weeks partial traffic restrictions on the bridge for the projected 15-week project.

2017 will also be a busy construction year. Procurement for construction of the interchanges at McOrmond Drive & College Drive and Boychuk Drive & Highway 16 is expected to proceed in 2016, pending funding from senior levels of government. This will have traffic flow impacts at these locations in 2017 and 2018. There is also potential for Federal stimulus funding that may allow for additional infrastructure projects to proceed in 2017.

Options to the Recommendation

An option would be to defer the Ruth Street Overpass rehabilitation project until 2017. This is not recommended because this work is required and traffic impacts are not expected to be extensive. Deferral to 2017 will simply delay the impact to another busy construction season.

Public and/or Stakeholder Involvement

Similar to the University Bridge project, the Administration has already been working with stakeholders during the planning stages of the above projects to ensure stakeholders understand the potential impacts to them, and that the Administration is aware of the impact of each project.

Stakeholders are invited to attend information meetings as they are provided. Project details will be provided at that time and the Administration will be available to respond to concerns and questions. Stakeholders will have the opportunity to sign up for regular project updates via email in order to be informed as construction details evolve, such as timelines, closures, or changes to traffic routes, which occur with construction projects with this level of complexity.

Communication Plan

A detailed communications plan has been developed for each project to prepare for the upcoming construction season. The full communication plans will be implemented in stages, with some already underway, to educate the public and stakeholders about the necessity of the projects, communicate project details and impacts, and inform drivers of alternate routes. Communications will occur prior to the projects commencing, throughout construction and once the projects are complete.

Communication tools may include news releases, social media messaging, advertisements, City website, and signage along traffic routes. Communications for these projects will also integrate into the overall Building Better Roads campaign.

Financial Implications

Funding has been approved for all four major projects to proceed (or continue) in 2016.

Environmental Implications

The activities relating to the above noted projects are associated with consumption of resources and resulting greenhouse gas emissions. The overall impact on greenhouse gas emissions has not been quantified at this time.

Other Considerations/Implications

There are no policy, privacy, or CPTED implications or considerations.

Due Date for Follow-up and/or Project Completion

There is no due date for follow up. The Administration will provide updates on the projects through regular communication in the 2016 construction season.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Report Approval

Written by:	Todd Grabowski, Manager, Asset Preservation for Bridges
	Rob Frank, Engineering Manager, Asset Preservation
Reviewed by:	Mike Gutek, Director of Major Projects
Reviewed by:	Angela Gardiner, Director of Transportation
Approved by:	Jeff Jorgenson, General Manager, Transportation & Utilities Department

TRANS RF – 206 Major Project with Extended Traffic Restrictions

Lakeview Neighbourhood Traffic Review

Recommendation
That the Standing Policy Committee on Transportation recommend to City Council:

That the Neighbourhood Traffic Review for the Lakeview neighbourhood be adopted as the framework for future traffic improvements in the area, to be undertaken as funding is made available through the annual budget process.

Topic and Purpose
The purpose of this report is to provide information on the Neighbourhood Traffic Review for the Lakeview neighbourhood.

Report Highlights
A traffic plan for the Lakeview neighbourhood was developed in consultation with the community in response to concerns such as speeding, traffic shortcutting, and pedestrian safety. The plan will be implemented over time as funding for the improvements is available.

Strategic Goal
This report supports the Strategic Goal of Moving Around by providing a plan to guide the installation of traffic calming devices and pedestrian safety enhancements to improve the safety of pedestrians, motorists, and cyclists.

Background
A public meeting was held in May 2015 to identify traffic concerns and potential solutions within the Lakeview neighbourhood. Representatives from the Saskatoon Police Service were in attendance to address traffic enforcement issues. Based on the residents' input provided at the initial public meeting and the analysis of the traffic data collected, a Traffic Management Plan was developed and presented to the community at a second public meeting held in November 2015.

Report
The development and implementation of the Traffic Management Plan includes four stages:

1. Identify existing problems, concerns and possible solutions through the initial neighbourhood consultation and the Shaping Saskatoon.ca website;
2. Develop a draft traffic plan based on residents' input and traffic assessments;
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 adoption; and
4. Implement the proposed measures in a specific time frame, short-term (1 to 2 years), medium-term (3 to 5 years), or long-term (more than 5 years).

The majority of concerns received during the consultation included shortcutting, speeding, pedestrian safety, and parking.

The Administration is recommending the following modifications to improve safety in the Lakeview neighbourhood:

- Stop signs
- Parking restrictions
- Zebra crosswalks
- Speed display board
- Traffic calming devices
    - Median islands

The installation of each proposed improvement will be implemented in three specific time frames as follows:

Short-term (1 to 2 years)	Temporary traffic calming measures, signage, pavement markings, accessible pedestrian ramps
Medium-term (3 to 5 years)	Permanent traffic calming devices, roadway realignment, sidewalks (in some cases), major intersection reviews
Long-term (5 years plus)	Permanent traffic calming devices, roadway realignment, sidewalks

The Lakeview Neighbourhood Traffic Review is included in Attachment 1.

Public and/or Stakeholder Involvement

In May 2015, a public meeting was held to discuss traffic concerns and identify potential solutions. The feedback was used to develop the neighbourhood traffic plan which was presented at a follow-up public meeting in November 2015.

Feedback was provided by internal civic stakeholders of various divisions and departments: Public Works, Saskatoon Transit, Planning & Development, Saskatoon Light & Power, Saskatoon Police Service, and the Saskatoon Fire Department on the proposed improvements, which was incorporated into the recommended neighbourhood traffic review.

Communication Plan

The final neighbourhood traffic plan will be shared with the residents of the impacted neighbourhood using several methods: City website, the Community Association, communication forums (i.e. website, newsletter), and by a direct mail-out.

Environmental Implications

The overall impact of the recommendations on traffic characteristics, including the impacts on greenhouse gas emissions, is not known at this time.

Financial Implications

The implementation of the neighbourhood traffic plan will have financial implications. The costs are summarized in the following table.

Item	2016	Beyond 2016
Traffic Calming	$3,000	$70,000
Traffic Control Signs	4,250	-
Pedestrian Crosswalks	1,500	-
Miscellaneous Signs	750	-
TOTAL	$9,500	$70,000

There is sufficient funding within Capital Project #1512 – Neighbourhood Traffic Management to undertake the work in 2016.

The remainder of the work, beyond 2016, will be considered alongside all other improvements identified through the Neighbourhood Traffic Management Program. The Administration's annual budget submission package will include the list of projects recommended to be funded, and the rationale used to prioritize the projects.

Other Considerations/Implications

There are no options, policy, privacy or CPTED considerations or implications.

Due Date for Follow-up and/or Project Completion

If adopted by City Council, temporary traffic calming devices and signage will be implemented during the 2016 construction season.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Attachment

1. Lakeview Neighbourhood Traffic Review, January 19, 2016

Report Approval

Written by: Justine Nyen, Transportation Engineer, Transportation
Reviewed by: Jay Magus, Engineering Manager, Transportation
Reviewed by: Angela Gardiner, Director of Transportation
Approved by: Jeff Jorgenson, General Manager, Transportation & Utilities Department

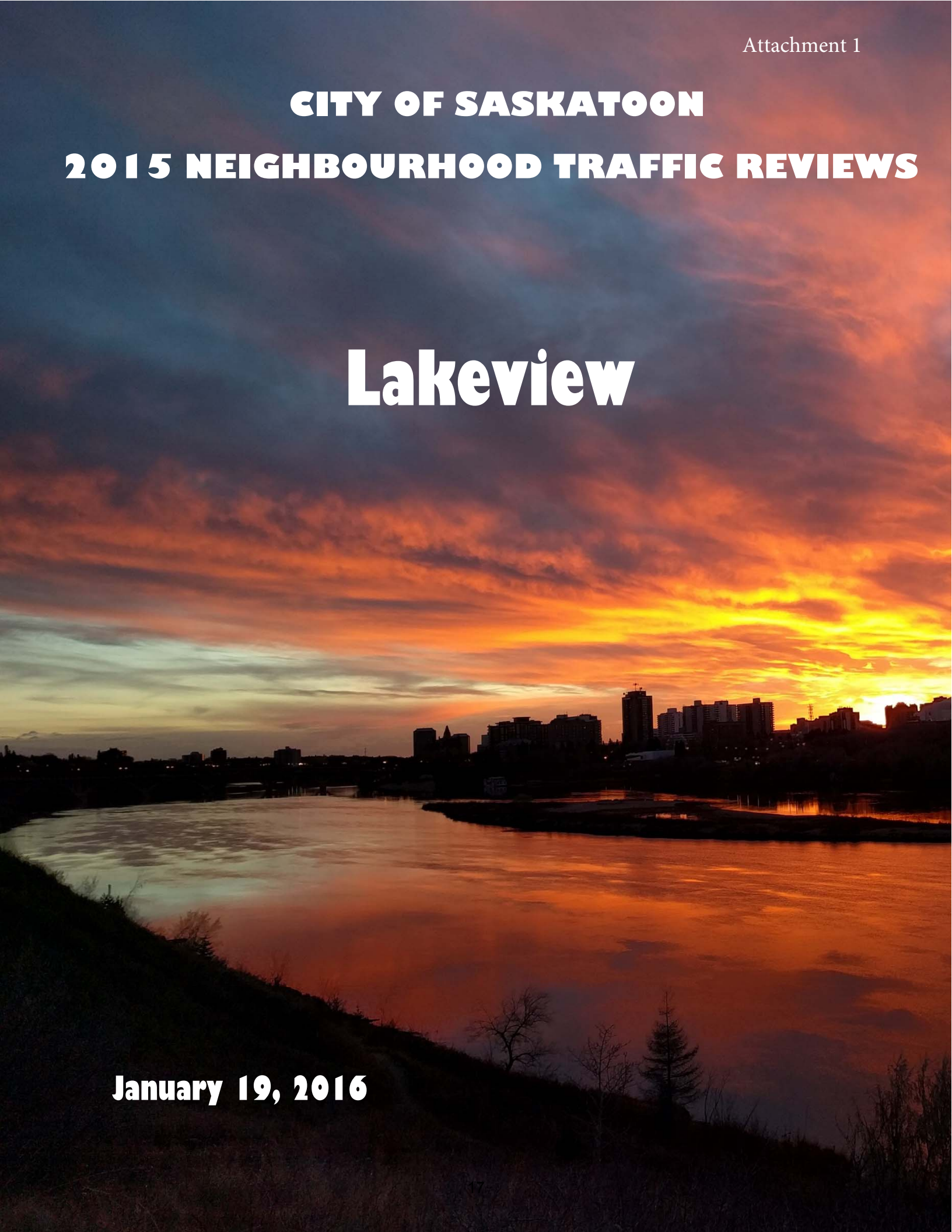
TRANS JN – Lakeview Neighbourhood Traffic Review

Attachment 1

CITY OF SASKATOON

2015 NEIGHBOURHOOD TRAFFIC REVIEWS

Lakeview



January 19, 2016

Lakeview Neighbourhood Traffic Review

January 19, 2016

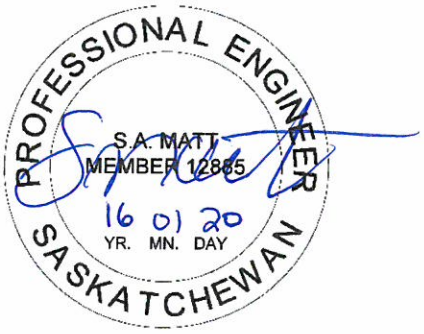
Authorization

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:

- Lakeview residents
- Lakeview Community Association
- Saskatoon Police Services
- 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 Tiffany Paulsen

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 Lakeview 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 November 2015.

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

Table ES-1: Lakeview Neighbourhood Recommended Improvements

Item	Location	Recommendation	Reason
1	Kingsmere Boulevard & Costigan Road (north)	Median island (on north side)	Reduce speed
2	Kingsmere Boulevard & Costigan Road (south)	Median islands (on north & south sides)	Reduce speed
3	Kingsmere Boulevard & Whiteshore Crescent (north) / Delaronde Road	School zone sign on signal overhead	Enhance visibility of school zone
4	Kingsmere Boulevard & Whiteshore Crescent (north) / Delaronde Road	"No parking" sign on Kingsmere Boulevard 10m from intersection (on southeast corner)	Improve visibility
5	Kingsmere Boulevard & curve between Delaronde Road & Delaronde Road	Move existing school zone sign south (across from 50kph sign) & install additional school zone sign on back side of 50kph sign	Improve visibility; reduce speed at beginning of school zone
6	Kingsmere Boulevard & Whitewood Road/Wollaston Crescent	"No Parking" sign on Kingsmere Boulevard 18m from intersection (on northeast corner)	Improve visibility
7	Kingsmere Boulevard & all intersecting streets between Taylor Street & Weyakwin Drive	Change all yield signs to stop signs (15 signs total)	Improve safety on bus route
8	Stillwater Drive & Kingsmere Boulevard	Median island (on east side)	Enhance visibility of stop sign; reduce speed for left turn and right turn from Kingsmere Boulevard onto Stillwater Drive
9	Stillwater Drive & McKercher Drive	Zebra crosswalks	Improve pedestrian safety
10	Stillwater Drive & Emerald Crescent (west)	Zebra crosswalks & curb extension (on southwest corner)	Improve pedestrian safety & reduce speed
11	Taylor Street & Weyakwin Drive	Median island (on south side)	Reduce speed of drivers making right turn from Taylor St onto Weyakwin Dr; Additional location for stop sign on Weyakwin Dr
12	Taylor Street & Weyakwin Drive	"No Parking" sign on Taylor Street 40m from intersection (on southwest corner)	Improve visibility
13	Taylor Street - 200m west of Weyakwin Drive	Speed display board facing eastbound traffic	Reduce Speed
14	Crean Lane	Speed study in spring 2016 to determine additional measures	Speeding & traffic volume concerns

LEGEND

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

Item	Location	Recommendation	Reason
1	Kingsmere Blvd & Costigan Rd (north)	Median island (on north side)	Reduce speed
2	Kingsmere Blvd & Costigan Rd (south)	Median islands (on north & south sides)	Reduce speed
3	Kingsmere Blvd & Whiteshore Cres (north) / Delaronde Rd	School zone sign on signal overhead	Enhance visibility of school zone
4	Kingsmere Blvd & Whiteshore Cres (north) / Delaronde Rd	"No parking" sign on Kingsmere Blvd 10m from intersection (on southeast corner)	Improve visibility
5	Kingsmere Blvd & curve between Delaronde Rd & Delaronde Rd	Move existing school zone sign south (across from 50kph sign) & install additional school zone sign on back side of 50kph sign	Improve visibility; reduce speed at beginning of school zone
6	Kingsmere Blvd & Whitewood Rd/Wollaston Cres	"No Parking" sign on Kingsmere Blvd 18m from intersection (on northeast corner)	Improve visibility
7	Kingsmere Blvd & all intersecting streets between Taylor St & Weyakwin Dr	Change all yield signs to stop signs (15 signs total)	Improve safety on bus route
8	Stillwater Dr & Kingsmere Blvd	Median island (on east side)	Enhance visibility of stop sign; reduce speed for left turn and right turn from Kingsmere Blvd onto Stillwater Dr
9	Stillwater Dr & McKercher Dr	Zebra crosswalks	Improve pedestrian safety
10	Stillwater Dr & Emerald Cres (west)	Zebra crosswalks & curb extension (on southwest corner)	Improve pedestrian safety & reduce speed
11	Taylor St & Weyakwin Dr	Median island (on south side)	Reduce speed of drivers making right turn from Taylor St onto Weyakwin Dr; Additional location for stop sign on Weyakwin Dr
12	Taylor St & Weyakwin Dr	"No Parking" sign on Taylor St 40m from intersection (on southwest corner)	Improve visibility
13	Taylor St - 200m west of Weyakwin Dr	Speed display board facing eastbound traffic	Reduce Speed
14	Crean Lane	Speed study in spring 2016 to determine additional measures	Speeding & traffic volume concerns

LAKEVIEW TRAFFIC PLAN

City of Saskatoon

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Executive Summary i

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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 Lakeview.

The Lakeview neighbourhood is located on the east side of the South Saskatchewan River and is bound by Highway 16 to the south, Weyakwin Drive to the east, Circle Drive to the west, and Taylor Street to the north. The area use is mostly residential, with an elementary school (Lakeview School) on Kingsmere Boulevard, and some commercial land use along Taylor 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).

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 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 Lakeview, the bordering arterial street (Taylor Street) 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:

- Kingsmere Boulevard
- Delaronde Crescent
- Lakeshore Crescent
- Kennossee Crescent
- Whiteshore Crescent

Proposed solutions identified by residents:

- Install traffic calming (median islands or speed bumps) or concrete barriers
- Improve visibility of school zone sign
- Install speed display board
- Install “residents only” sign
- Install another entrance/exit to neighbourhood
- 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:

- Kingsmere Boulevard & Stillwater Drive
- Kingsmere Boulevard & Whiteshore Crescent / Delaronde Road
- Kingsmere Boulevard & Kingsmere Place
- Stillwater Drive & Emerald Crescent
- Stillwater Drive & McKercher Drive
- Taylor Street & Weyakwin Drive

Proposed solutions identified by residents:

- Improve visibility of school zone signs (either by moving the sign or tree trimming)
- Install active pedestrian corridor (overhead flashing yellow lights)
- Install traffic calming to restrict driver's from passing on the right
- Block side of crosswalk that pedestrian shouldn't be using at Whiteshore Crescent / Delaronde Road
- Extend school zone
- Install pedestrian sign with flashing light
- Add pedestrian connection at Delaronde Crescent crossing Circle Drive
- Add pedestrian connection south of Wollaston Court crossing Circle Drive
- Consider adding pedestrian controlled lights at walkways for pedestrians to cross safely

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:

- Stillwater Drive & McKercher Drive
- Taylor Street & Weyakwin Drive
- Delaronde Crescent

Proposed solutions identified by residents:

- Install all-way stop (Stillwater Drive & McKercher Drive and Taylor Street & Weyakwin Drive)
- Change yield sign to stop sign

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:

- Kingsmere Boulevard & Costigan Road
- Kingsmere Boulevard & Whitewood Road / Wollaston Cres

Proposed solutions identified by residents:

- Parking restrictions
- Parking enforcement

2.5 Concern 5 – Maintenance

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

Neighbourhood concerns regarding maintenance were:

- Snow build-up on Kingsmere Boulevard
- Trees obstructing signs

2.6 Concern 6 – Transit

Transit:

- Kingsmere Boulevard & Whiteshore Crescent / Delaronde Road – buses stopping/parking during peak hours; buses speeding
- Kingsmere Boulevard & Costigan Road – bus stop creates a blind spot for drivers trying to exit Costigan Road onto Kingsmere Boulevard
- Kingsmere Boulevard & Wollaston Crescent / Whitewood Road - bus stop eastbound on Kingsmere Boulevard obstructs driver's view.

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
    - 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. A map of the traffic data collection is shown in **Appendix A**.

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**.

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 Lakeview 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**.

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

Street	Between	Class	Average Daily Traffic (vpd)	Speed (kph)
Lakeshore Crescent	South portion of Crescent	36.5	288	local
Kennossee Crescent	Midblock	41.4	274	
Whiteshore Crescent	St. Bernard School Zone	school=30.4; regular=37.9	356	
Kingsmere Boulevard	Wakaw Crescent to Delaronde Road	55.1	3042	majorcollector
Kingsmere Boulevard	Costigan Road (north) to Costigan Road (south)	51.5	9303	
Kingsmere Boulevard	Christopher Road (north) to Christopher Road (south)	58	5414	
Stillwater Drive	Emerald Crescent (west) to Emerald Crescent (east)	53.8	2822	collector

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**.

Table 3-3: All-Way Stop Assessments

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
Stillwater Drive & Emerald Crescent (west)	394	4460	0	15%	no	All-Way Stop Not Warranted
Stillwater Drive & McKercher Drive	810	8470	0	19%	no	
Kingsmere Boulevard & Stillwater Drive	1657	17060	0	7%	no	
Taylor Street & Weyakwin Drive	1365	15990	4	24%	no	

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

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**.

Table 3-4: Pedestrian Assessment

Location	Number of Pedestrians Crossing During Peak Hours	Results
Stillwater Drive & McKercher Drive	109	Pedestrian Device Not Warranted
Stillwater Drive & Emerald Crescent (west)	38	
Kingsmere Boulevard & Stillwater Drive	18	
Taylor Street & Weyakwin Drive	23	
Kingsmere Boulevard & Delaronde Road/Whiteshore Crescent	148	Existing Pedestrian-Actuated Signal

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

3.5 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:

- Taylor Street & Weyakwin Drive
- Kingsmere Boulevard & Whiteshore Crescent / Delaronde Road
- Kingsmere Boulevard & Wollaston Crescent (east)
- Stillwater Drive & Weyakwin Drive

Details of the collision analysis are provided **Appendix D.**

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 not 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
Kingsmere Boulevard & Costigan Road (north)	Median island (on north side)	Reduce speed
Kingsmere Boulevard & Costigan Road (south)	Median islands (on north & south sides)	Reduce speed
Stillwater Drive & Kingsmere Boulevard	Median island (on east side)	Reduce speed for left turn and right turn from Kingsmere Boulevard onto Stillwater Drive
Stillwater Drive & Emerald Crescent (west)	Curb extension (on southwest corner)	Improve pedestrian safety & reduce speed
Taylor Street & Weyakwin Drive	Median island (on south side)	Reduce speed for right turn from Taylor Street
Taylor Street - 200m west of Weyakwin Drive	Speed display board facing eastbound traffic	Reduce Speed
Crean Lane	Speed study in spring 2016 to determine additional measures	Speeding & traffic volume concerns

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
Kingsmere Boulevard & Whiteshore Crescent (north) / Delaronde Road	School zone sign on signal overhead	Enhance visibility of school zone
Kingsmere Boulevard & curve between Delaronde Road & Delaronde Road	Move existing school zone sign south (across from 50kph sign) & install additional school zone sign on back side of 50kph sign	Improve visibility; reduce speed at beginning of school zone
Stillwater Drive & McKercher Drive	Zebra crosswalks	Improve pedestrian safety
Stillwater Drive & Emerald Crescent (west)	Zebra crosswalks	Improve pedestrian safety & reduce speed

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
Kingsmere Boulevard & all intersecting streets between Taylor Street & Weyakwin Drive	Change all yield signs to stop signs (15 signs total)	Improve safety on bus route
Stillwater Drive & Kingsmere Boulevard	Median island with additional stop sign (on east side)	Enhance visibility of stop sign
Taylor Street & Weyakwin Drive	Median island with additional stop sign (on south side)	Enhance visibility of stop sign

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
Kingsmere Boulevard & Whiteshore Crescent (north) / Delaronde Road	"No parking" sign on Kingsmere Boulevard 10m from intersection (on southeast corner)	Improve visibility
Kingsmere Boulevard & Whitewood Road / Wollaston Crescent	"No Parking" sign on Kingsmere Boulevard 18m from intersection (on northeast corner)	Improve visibility
Taylor Street & Weyakwin Drive	"No Parking" sign on Taylor Street 40m from intersection (on southwest corner)	Improve visibility

4.6 Follow Up Consultation – Presentation of Traffic Management Plan

The initial recommended improvements were presented at a follow-up public meeting in November 2015. 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 E**. A decision matrix for additional comments received after the draft traffic plan is also included in **Appendix E**.

The recommendations were circulated to the Civic Divisions (including Police Services, Light & Power, Saskatoon Fire Department, Environmental Services, and Transit) to gather comments and concerns. General support was received. Transit was concerned about the proposed curb extension at the intersection of Stillwater Drive and McKercher Drive, as their drivers are currently expected to make a left turn to go northbound at this intersection. The curb extension was removed from the plan.

4.7 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 Taylor 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 Lakeview 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

Table 5-1: Traffic Calming Cost Estimate

Location	Device	Cost Estimate		Time Frame
		Temporary	Permanent	
Kingsmere Boulevard & Costigan Road (north)	Median island (on north side)	$500	$5,000	1 to 5 years (traffic calming devices will be installed temporarily until proven effective)
Kingsmere Boulevard & Costigan Road (south)	Median islands (on north & south sides)	$1,000	$10,000	
Stillwater Drive & Kingsmere Boulevard	Median island (on east side)	$500	$5,000	
Stillwater Drive & Emerald Crescent (west)	Curb extension (on southwest corner)	$500	$45,000	
Taylor Street & Weyakwin Drive	Median island (on south side)	$500	$5,000	
Taylor Street - 200m west of Weyakwin Drive	Speed display board facing eastbound traffic	$0	$0	
	Totals	**$3,000**	**$70,000**	

Table 5-2: Traffic Control Signs Cost Estimate

Location	Device	Number of Signs	Cost Estimate	Time Frame
Kingsmere Boulevard & all intersecting streets between Taylor Street & Weyakwin Drive	Stop sign	15	$3,750	1 to 2 years
Stillwater Drive & Kingsmere Boulevard	Stop sign	1	$250	
Taylor Street & Weyakwin Drive	Stop sign	1	$250	
	Totals	**17**	**$4,250**	

Table 5-3: Pedestrian Safety Signs Cost Estimate

Location	Device	Cost Estimate	Time Frame
Kingsmere Boulevard & Whiteshore Crescent (north) / Delaronde Road	School zone sign	$250	1 to 2 years
Kingsmere Boulevard & curve between Delaronde Road & Delaronde Road	School zone sign	$250	
Stillwater Drive & McKercher Drive	Zebra crosswalks	$500	
Stillwater Drive & Emerald Crescent (west)	Zebra crosswalks	$500	
	Total	**$1,500**	

Table 5-4: Miscellaneous Signs Cost Estimate

Location	Device	Number of Signs	Cost Estimate	Time Frame
Kingsmere Boulevard & Whiteshore Crescent (north) / Delaronde Road	"No parking" sign	1	$250	1 to 2 years
Kingsmere Boulevard & Whitewood Road / Wollaston Crescent	"No parking" sign	1	$250	
Taylor Street & Weyakwin Drive	"No parking" sign	1	$250	
Totals		**3**	**$750**	

Table 5-5: Total Cost Estimate

Category	Signing & Temporary Traffic Calming	Permanent
Traffic Calming	$3,000	$70,000
Traffic Control Signs	$4,250	$0
Pedestrian Safety Signs	$1,500	$0
Miscellaneous Signs	$750	$0
Totals	**$9,500**	**$70,000**

The total cost estimate for the signage and temporary traffic calming to be installed in 2016 is **$9,500**. The total cost estimate for the installation of future permanent devices, including the active pedestrian corridor, and sidewalks, is **$70,000**.

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

LEGEND

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

Item	Location	Recommendation	Reason
1	Kingsmere Blvd & Costigan Rd (north)	Median island (on north side)	Reduce speed
2	Kingsmere Blvd & Costigan Rd (south)	Median islands (on north & south sides)	Reduce speed
3	Kingsmere Blvd & Whiteshore Cres (north) / Delaronde Rd	School zone sign on signal overhead	Enhance visibility of school zone
4	Kingsmere Blvd & Whiteshore Cres (north) / Delaronde Rd	"No parking" sign on Kingsmere Blvd 10m from intersection (on southeast corner)	Improve visibility
5	Kingsmere Blvd & curve between Delaronde Rd & Delaronde Rd	Move existing school zone sign south (across from 50kph sign) & install additional school zone sign on back side of 50kph sign	Improve visibility; reduce speed at beginning of school zone
6	Kingsmere Blvd & Whitewood Rd/Wollaston Cres	"No Parking" sign on Kingsmere Blvd 18m from intersection (on northeast corner)	Improve visibility
7	Kingsmere Blvd & all intersecting streets between Taylor St & Weyakwin Dr	Change all yield signs to stop signs (15 signs total)	Improve safety on bus route
8	Stillwater Dr & Kingsmere Blvd	Median island (on east side)	Enhance visibility of stop sign; reduce speed for left turn and right turn from Kingsmere Blvd onto Stillwater Dr
9	Stillwater Dr & McKercher Dr	Zebra crosswalks	Improve pedestrian safety
10	Stillwater Dr & Emerald Cres (west)	Zebra crosswalks & curb extension (on southwest corner)	Improve pedestrian safety & reduce speed
11	Taylor St & Weyakwin Dr	Median island (on south side)	Reduce speed of drivers making right turn from Taylor St onto Weyakwin Dr; Additional location for stop sign on Weyakwin Dr
12	Taylor St & Weyakwin Dr	"No Parking" sign on Taylor St 40m from intersection (on southwest corner)	Improve visibility
13	Taylor St - 200m west of Weyakwin Dr	Speed display board facing eastbound traffic	Reduce Speed
14	Crean Lane	Speed study in spring 2016 to determine additional measures	Speeding & traffic volume concerns

LAKEVIEW TRAFFIC PLAN

City of Saskatoon

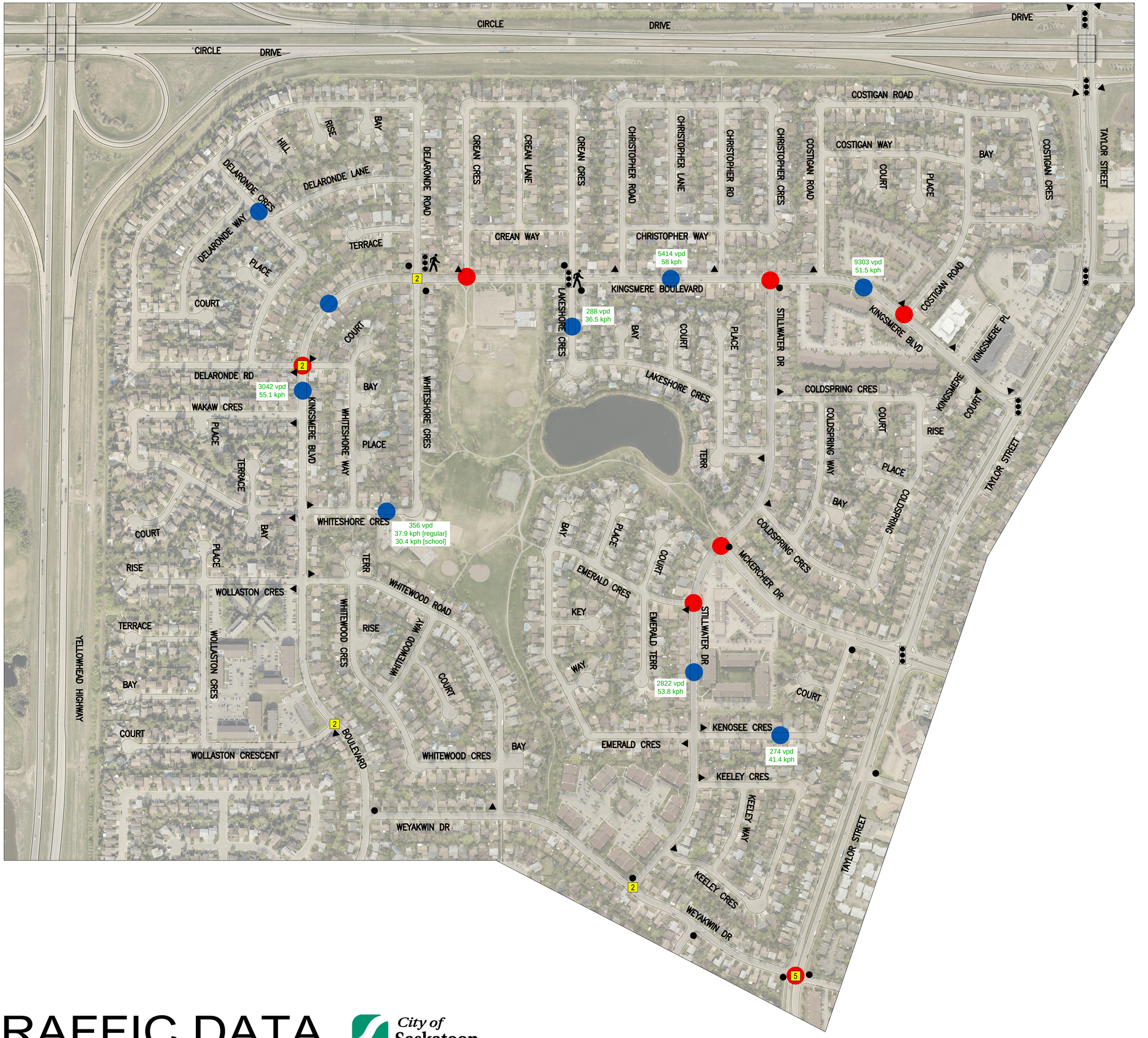
Table 5-6: Lakeview Neighbourhood Recommended Improvements

Item	Location	Recommendation	Reason
1	Kingsmere Boulevard & Costigan Road (north)	Median island (on north side)	Reduce speed
2	Kingsmere Boulevard & Costigan Road (south)	Median islands (on north & south sides)	Reduce speed
3	Kingsmere Boulevard & Whiteshore Crescent (north) / Delaronde Road	School zone sign on signal overhead	Enhance visibility of school zone
4	Kingsmere Boulevard & Whiteshore Crescent (north) / Delaronde Road	"No parking" sign on Kingsmere Boulevard 10m from intersection (on southeast corner)	Improve visibility
5	Kingsmere Boulevard & curve between Delaronde Road & Delaronde Road	Move existing school zone sign south (across from 50kph sign) & install additional school zone sign on back side of 50kph sign	Improve visibility; reduce speed at beginning of school zone
6	Kingsmere Boulevard & Whitewood Road/Wollaston Crescent	"No Parking" sign on Kingsmere Boulevard 18m from intersection (on northeast corner)	Improve visibility
7	Kingsmere Boulevard & all intersecting streets between Taylor Street & Weyakwin Drive	Change all yield signs to stop signs (15 signs total)	Improve safety on bus route
8	Stillwater Drive & Kingsmere Boulevard	Median island (on east side)	Enhance visibility of stop sign; reduce speed for left turn and right turn from Kingsmere Boulevard onto Stillwater Drive
9	Stillwater Drive & McKercher Drive	Zebra crosswalks	Improve pedestrian safety
10	Stillwater Drive & Emerald Crescent (west)	Zebra crosswalks & curb extension (on southwest corner)	Improve pedestrian safety & reduce speed
11	Taylor Street & Weyakwin Drive	Median island (on south side)	Reduce speed of drivers making right turn from Taylor St onto Weyakwin Dr; Additional location for stop sign on Weyakwin Dr
12	Taylor Street & Weyakwin Drive	"No Parking" sign on Taylor Street 40m from intersection (on southwest corner)	Improve visibility
13	Taylor Street - 200m west of Weyakwin Drive	Speed display board facing eastbound traffic	Reduce Speed
14	Crean Lane	Speed study in spring 2016 to determine additional measures	Speeding & traffic volume concerns

APPENDIX A: TRAFFIC DATA COLLECTION

LEGEND

- X — AVERAGE NUMBER OF COLLISIONS PER YEAR [2009-2013]
- TRAFFIC MOVEMENT COUNT
- SPEED STUDY
- 786 vpd / 47.2 kph — NUMBER OF VEHICLES PER DAY / 85th PERCENTILE SPEED
- EXISTING STOP SIGN
- EXISTING YIELD SIGN
- EXISTING TRAFFIC SIGNAL



LAKEVIEW TRAFFIC DATA

City of Saskatoon

APPENDIX B: 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
Stillwater Drive & Emerald Crescent (west)	15% (no)	no	Conditions NOT met.
Stillwater Drive & McKercher Drive	19% (no)	no	
Kingsmere Boulevard & Stillwater Drive	7% (no)	no	
Taylor Street & Weyakwin Drive	24% (no)	no	

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

APPENDIX C: PEDESTRIAN DEVICE ASSESSMENTS

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

Witney Avenue & 20th Street:

1. Lanes Priority Points:

L = 2 lanes = number of lanes.

LANF = 0.0 points = (L-2) x 3.6 to a max of 15 points, urban x-section only.

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 = 340 m = distance from study location to nearest protected crosswalk.

LOCF = 10.5 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 = 33.0 = total number of children, teenagers, seniors and/or impaired counted.

Pa = 0.0 = total number of adults counted.

Pw = 49.5 = weighted average of pedestrians crossing the main street.

Pcm = 9.9 = weighted average hourly pedestrian volume crossing the main street.

V = 2042.0 = volume of traffic passing through the crossing(s).

Vam = 408.4 = average hourly volume of traffic passing through the crossing(s).

VOLF = 8.1 points = Vam x Pcm / 500

6. Satisfaction of Installation Criteria:

SUMF = (LANF + MEDF + SPDF + LOCF + VOLF)

SUMF = 31 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 W & 18th Street:

1. Lanes Priority Points:

L = 2 lanes = number of lanes.

LANF = 0.0 points = (L-2) x 3.6 to a max of 15 points, urban x-section only.

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 = 410 m = distance from study location to nearest protected crosswalk.

LOCF = 15.0 points = (D-200) / 13.3 to a maximum of 15 points.

Actual value = 15.78947 points.

5. Pedestrian/Vehicle Volume Priority Points:

H = 5.0 = (hours) duration of counting period.

Ps = 113.0 = total number of children, teenagers, seniors and/or impaired counted.

Pa = 60.0 = total number of adults counted.

Pw = 229.5 = weighted average of pedestrians crossing the main street.

Pcm = 45.9 = weighted average hourly pedestrian volume crossing the main street.

V = 2481.0 = volume of traffic passing through the crossing(s).

Vam = 496.2 = average hourly volume of traffic passing through the crossing(s).

VOLF = 45.6 points = Vam x Pcm / 500

6. Satisfaction of Installation Criteria:

SUMF = (LANF + MEDF + SPDF + LOCF + VOLF)

SUMF = 73 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.

18th Street & Wardlow Ave:

1. Lanes Priority Points:

   L = 2 lanes = number of lanes.

   LANF = 0.0 points = (L-2) x 3.6 to a max of 15 points, urban x-section only.

2. Median Priority Points:

   MEDF = 3.0 points = indicating there is a 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 = 103 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 = 25.0 = total number of children, teenagers, seniors and/or impaired counted.

Pa = 0.0 = total number of adults counted.

Pw = 37.5 = weighted average of pedestrians crossing the main street.

Pcm = 7.5 = weighted average hourly pedestrian volume crossing the main street.

V = 225.0 = volume of traffic passing through the crossing(s).

Vam = 45.0 = average hourly volume of traffic passing through the crossing(s).

VOLF = 0.7 points = Vam x Pcm / 500

6. Satisfaction of Installation Criteria:

SUMF = (LANF + MEDF + SPDF + LOCF + VOLF)

SUMF = 10 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 W & 21st St:

1. Lanes Priority Points:

L = 2 lanes = number of lanes.

LANF = 0.0 points = (L-2) x 3.6 to a max of 15 points, urban x-section only.

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 = 170 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 = 40.0 = total number of children, teenagers, seniors and/or impaired counted.

Pa = 46.0 = total number of adults counted.

Pw = 106.0 = weighted average of pedestrians crossing the main street.

Pcm = 21.2 = weighted average hourly pedestrian volume crossing the main street.

V = 3036.0 = volume of traffic passing through the crossing(s).

Vam = 607.2 = average hourly volume of traffic passing through the crossing(s).

VOLF = 25.7 points = Vam x Pcm / 500

6. Satisfaction of Installation Criteria:

SUMF = (LANF + MEDF + SPDF + LOCF + VOLF)

SUMF = 38 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.

Pedestrian Corridor Warrant Calculation

Witney Avenue & 20th Street:

Time (15 minute intervals)	Vehicle Counts		Pedestrian Counts				P.C.	Periods	Points
of	Total Both Sides		Factored Counts			Warrant	Wrnt'd	Wrnt'd	
	15 min.	30 min.	Child	Teen	Adult	Senior / Impaired	Total	15 min.	30 min.
	Points	(1=Yes)	Periods						
7:00									
7:15									
7:30									
7:45									
8:00	79	79							
8:15	85	164							
8:30	132	217	1			1	1	1	217
8:45	123	255	2			2	2	3	765
9:00	44	167						2	334
9:15		44							
9:30									
9:45									
AM Totals		463		3			3		
11:30	69		1			1	1		
11:45	83	152	2			2	2	3	456
12:00	82	165	3			3	3	5	825
12:15	83	165	1			1	1	4	660
12:30	65	148	4			4	4	5	740

12:45	90	155	3		3	3	7	1,085
13:00	79	169					3	507
13:15	88	167	1		1	1	1	167
Noon Totals		639		15		15		
14:00								
14:15								
14:30								
14:45								
15:00	81	81						
15:15	116	197	4		4	4	4	788
15:30	127	243	4		4	4	8	1,944
15:45	136	263	3		3	3	7	1,841
16:00	113	249					3	747
16:15	124	237	1		1	1	1	237
16:30	109	233	3		3	3	4	932
16:45	134	243					3	729
17:00		134						
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	940		15			15	
Totals	2,042		33			33	
			100%			100%	

West Crosswalk = 13

East Crosswalk = 20 <<< install crosswalk on this side of the int.

SUMMARY

Total Warranted PC Points: or / period

Highest PC point value: 1,944 at

Average PC point value: 865

No. of periods warranted:

Avenue W & 18th Street:

Time (15 minute intervals) of	Vehicle Counts		Pedestrian Counts						P.C. Periods	Points
	Total Both Sides		Factored Counts				Warrant	Wrnt'd	Wrnt'd	
	15 min. Points	30 min. (1=Yes)	Child Periods	Teen	Adult	Senior / Impaired	Total	15 min.		30 min.
7:00										
7:15										
7:30										
7:45										
8:00	110	110		5	2	7	4.5	4.5	495	
8:15	117	227	6	2	2	2	12	10.34	14.84	3,369
8:30	129	246	6		5	2	13	10.5	20.84	5,127	1	5,127
8:45	134	263	6		5		11	8.5	19	4,997
9:00		134							8.5	1,139
9:15										
9:30										
9:45										
AM Totals		490		18	2	17	6	43		
	5,127									
11:30	98			4	7	4	15	10.18		
11:45	121	219	4		5	2	11	8.5	18.68	4,091
12:00	120	241	8		2		10	9	17.5	4,218
12:15	99	219	5		1		6	5.5	14.5	3,176
12:30	117	216	4				4	4	9.5	2,052
12:45	95	212	8	1			9	8.67	12.67	2,686

13:00	109	204	1	2	3		6	3.84	12.51	2,552		
13:15	94	203		1			1	0.67	4.51	916		
Noon Totals		853		30	8	18	6	62				
14:00												
14:15												
14:30												
14:45												
15:00	131	131	3				3	3	3	393		
15:15	125	256	4		2	2	8	7	10	2,560		
15:30	171	296	10	4	3	2	19	16.18	23.18	6,861	1	6,861
15:45	151	322	3		5	1	9	6.5	22.68	7,303	1	7,303
16:00	138	289			4		4	2	8.5	2,457		
16:15	143	281	5				5	5	7	1,967		
16:30	140	283	4		1		5	4.5	9.5	2,689		
16:45	139	279	2		10	3	15	10	14.5	4,046		
17:00		139							10	1,390		
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	1,138		31	4	25	8	68	
	14,164							
Totals	2,481	79	14	60	20	173		
		46%	8%	35%	12%	100%		

North Crosswalk = 60

South Crosswalk = 113 <<< install crosswalk on this side of the int.

SUMMARY

Total Warranted PC Points: 19,291 or 6,430 / period

Highest PC point value: 7,303 at

Average PC point value: 4,299

No. of periods warranted: 3

Wardlow Ave & 18th St:

Time (15 minute intervals)	Vehicle Counts		Pedestrian Counts				P.C. Periods	Points of
	Total Both Sides		Factored Counts			Warrant	Wrnt'd	Wrnt'd
	15 min. Points	30 min. (1=Yes)	Child	Teen	Adult	Senior / Impaired	Total	15 min. 30 min. Periods
7:00								
7:15								
7:30								
7:45								
8:00	12	12						
8:15	17	29	1			1 1	1	29
8:30	9	26	1			1 1	2	52
8:45	22	31					1	31
9:00		22						
9:15								
9:30								
9:45								
AM Totals		60		2		2		
11:30	8		2			2 2		
11:45	5	13	1			1 1	3	39
12:00	14	19					1	19
12:15	11	25	1			1 1	1	25
12:30	8	19	1			1 1	2	38
12:45	4	12					1	12

13:00	7	11						
13:15	6	13						
Noon Totals		63		5		5		
14:00								
14:15								
14:30								
14:45								
15:00	13	13						
15:15	10	23	4		4	4	4	92
15:30	10	20	8		8	8	12	240
15:45	15	25	4		4	4	12	300
16:00	7	22	1		1	1	5	110
16:15	16	23	1		1	1	2	46
16:30	15	31					1	31
16:45	16	31						
17:00		16						
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 102 18 18

Totals 225 25 25

100% 100%

West Crosswalk = 16 <<< install crosswalk on this side of the int.

East Crosswalk = 9

SUMMARY

Total Warranted PC Points: or / period

Highest PC point value: 300 at

Average PC point value: 71

No. of periods warranted:

Avenue W & 21st St:

Time (15 minute intervals)	Vehicle Counts		Pedestrian Counts					P.C. Periods	Points of
	Total Both Sides		Factored Counts			Warrant	Wrnt'd	Wrnt'd	
	15 min. Points	30 min. (1=Yes)	Child Periods	Teen	Adult	Senior / Impaired	Total	15 min.	30 min.
7:00									
7:15									
7:30									
7:45									
8:00	105	105			1	1	0.5	0.5	53
8:15	103	208	1		3	4	2.5	3	624
8:30	135	238		1	1	2	1.17	3.67	873
8:45	150	285	2		2	4	3	4.17	1,188
9:00		150						3	450
9:15									
9:30									
9:45									
AM Totals		493		3	1	7	11		
11:30	106			1	1	2	1.17		
11:45	127	233			2	2	1	2.17	506
12:00	126	253	2		1	3	2.5	3.5	886
12:15	139	265	1		3	4	2.5	5	1,325
12:30	116	255	1		3	4	2.5	5	1,275
12:45	128	244	1		3	4	2.5	5	1,220

13:00	141	269							2.5	673		
13:15	125	266	2				2	2	2	532		
Noon Totals		1,008		7	1	13		21				
14:00												
14:15												
14:30												
14:45												
15:00	155	155	5	1	3		9	7.17	7.17	1,111		
15:15	168	323			1		1	0.5	7.67	2,477		
15:30	209	377	3	1	2		6	4.67	5.17	1,949		
15:45	182	391	1		6		7	4	8.67	3,390		
16:00	212	394			6		6	3	7	2,758		
16:15	197	409			2		2	1	4	1,636		
16:30	225	422	4	1	4		9	6.67	7.67	3,237		
16:45	187	412	10	2	2		14	12.34	19.01	7,832	1	7,832
17:00		187							12.34	2,308		
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	1,535		23	5	26		54		
	7,832								
Totals	3,036		33	7	46		86		
			38%	8%	53%		100%		

North Crosswalk = 66 <<< install crosswalk on this side of the int.

South Crosswalk = 20

SUMMARY

Total Warranted PC Points: 7,832 or 7,832 / period

Highest PC point value: 7,832 at

Average PC point value: 2,420

No. of periods warranted: 1

APPENDIX D: COLLISION ANALYSIS

Collision Analysis

Collision data provided by SGI (2009 to 2013)

Street 1	Street 2	Ugrid	All Collisions	All collisions - 2013	RA, LT, RT	RA, LT, RT - 2013 only	Collector or Arterial	Ave
21st St	Avenue W	D8-53	20	5	10	5	yes	4
20th St	Witney Avenue	C8-8	17	3	11	2	yes	3
18th St	Avenue W	D9-29	12	2	5	1	yes	2
19th St	Avenue X	C8-1	11	2	8	2	no	2
19th St	Avenue W	D8-36	11	2	7	1	yes	2
21st St	Avenue Y	C8-5	6	1	5	1	no	1
20th St	Avenue Y	C8-3	4	1	2	1	yes	1
Appleby Dr	Wardlow Rd	C9-32	4	1	1	1	no	1
21st St	Avenue X	C8-45	3	0	3	0	no	1
20th St	Montreal Avenue	C8-25	3	0	2	0	yes	1
20th St	Avenue X	C8-2	3	0	0	0	no	1
20th St	Ottawa Avenue	C8-20	3	1	0	0	no	1
19th St	Witney Avenue	C8-66	2	0	2	0	no	0
19th St	Avenue Y	C8-29	2	1	1	0	no	0
18th St	Avenue X	C9-19	2	0	1	0	yes	0
18th St	Montreal Avenue	C9-20	2	0	1	0	yes	0
18th St	Witney Avenue	C9-2	2	0	0	0	no	0
Appleby Dr	Wardlow Rd	C9-37	1	0	1	0	no	0
21st St	Witney Avenue	C8-10	1	1	0	0	no	0
Montreal Avenue	Winnipeg Avenue	C8-70	1	1	0	0	no	0
19th St	Vancouver Avenue	C8-72	1	0	0	0	no	0
18th St	Ottawa Avenue	C9-10	1	0	0	0	no	0
18th St	Winnipeg Avenue	C9-38	1	0	0	0	no	0
Appleby Dr	Dundurn Pl	C9-28	1	0	0	0	no	0
Appleby Dr	Blake Pl	C9-25	1	0	0	0	no	0
20th St	Winnipeg Avenue	C8-11	0	0	0	0	no	0
20th St	Vancouver Avenue	C8-12	0	0	0	0	no	0
Vancouver Avenue	Ottawa Avenue	NA	0	0	0	0	no	0
19th St	Montreal Avenue	C8-79	0	0	0	0	no	0

19th St	Winnipeg Avenue	C8-91	0	0	0	0	no	0
18th St	Avenue Y	C9-48	0	0	0	0	no	0
18th St	Vancouver Avenue	C9-84	0	0	0	0	no	0
Ottawa Avenue	Winnipeg Avenue	NA	0	0	0	0	no	0
Ottawa Avenue	Winnipeg Avenue	NA	0	0	0	0	no	0
Appleby Dr	Wardlow Cres (north leg)	NA	0	0	0	0	no	0
Appleby Dr	Wardlow Rd (south leg)	NA	0	0	0	0	no	0
Appleby Dr	Appleby Crt	C9-41	0	0	0	0	no	0
Appleby Dr	Sclandens Pl	C9-57	0	0	0	0	no	0
Appleby Dr	Shaftsbury Pl	NA	0	0	0	0	no	0
Appleby Dr	Short Pl	NA	0	0	0	0	no	0
Appleby Dr	Appleby Dr	C9-42	0	0	0	0	no	0
Appleby Dr	Wark Pl	C9-59	0	0	0	0	no	0
Appleby Dr	Carling Pl	C9-55	0	0	0	0	no	0

APPENDIX E: DECISION MATRIX

Decision Matrix – Recommendations proposed at November 5, 2015 meeting

Item	Location	Recommendation	Reason	Group 1 - Ellen Pearson	Group 2 - Mark Emmons	Group 3 - Jay Magus	Decision
1	Witney Ave & 19th St	Change east-west yield to north-south stop	Improve safety at intersection & discourage speeding on Witney Avenue		Should measure 19th St because of multi-block free-flow. Could be new issue.		Carried. Continue to monitor traffic patterns after installation.
2	Witney Ave & 20th St	4-way stop	Improve driver & pedestrian safety (visibility concerns due to parked cars & high collisions)	are the curbs coloured to prevent parking close?			Carried.
3	Avenue W & 18th St	Install active pedestrian corridor	Improve pedestrian safety				Carried.
4	18th St & Ave Y	Install curb extension (southeast corner) & median island (east side)	Improve pedestrian safety & reduce speed near elementary school	how do curb extensions effect cyclists turning radii? Median islands are good.	Indifferent. Uncertain that it's needed. Could effect on-street parking negatively.		Carried.
5	21st St between Witney Ave & Ave W	Install sidewalk on south side	Improve pedestrian safety near park	Also install sidewalk on north side of 20th/Montreal	Who'll maintain it? City doesn't clear snow from sidewalk. Putting it on the north side may be better.		Changed to sidewalk installation on north side.
6	Ave X between 2nd driveway (behind 'Touch of Ukraine') south of 22nd St to 125 Ave X	Install parking restrictions on west side	Improve visibility for driveways (Bylaw 7200 states that motorists cannot park within 1m of a driveway due to safety reasons/visibility. Beginning at the driveway behind 'Touch of Ukraine' to 125 Avenue X South, motorists do not have adequate space to legally park because they're encroaching 1m from a driveway.)		Good plan. Sarcan needs to do better job of maintaining their site. Maybe they could do angle parking on their site. Major traffic generator and not enough on-site parking.		Carried.
7	21st St & Ave W	Add hazard boards to stop signs & enhance pedestrian signs	Enhance visibility of stop signs & driver compliance; improve pedestrian safety		Better than nothing. Would prefer active crossing.		Carried.
8	21st St & Ave Y	Change yield signs to stop signs	Enhance driver compliance		Not against it but not sure if it will have any effect.		Carried.
9	Back lane south of 22nd St - access from Witney Ave	Install 20kph speed sign	Reduce speed; enhance compliance of speed limit in back lane	Prostitution in back alley, needles - install "Local Traffic Only"	May already have 15kph signs posted here.		Removed. 20kph sign is already installed.
10	Witney Ave & 21st St	Install curb extensions (south side) & standard pedestrian crosswalk	Reduce speed, discourage shortcutting on Witney Ave & improve pedestrian safety	maintain bushes to increase visibility	Doesn't seem needed. May effect buses negatively.	Trim hedges on southeast corner	Remove standard crosswalk from recommendation. No sidewalk connections. May consider crosswalk once sidewalk is installed. Install curb extension on north east corner to address speeding/shortcutting concerns. Forward request for tree trimming to Parks.
11	Ave W - north of 18th St	Forward information to Transit for further consideration - install bus shelter on east side	Many transit users				Carried.

Decision Matrix – Additional comments

Item	Location	Concern	Decision
1	Various	tree maintenance to prevent visibility issues, pedestrian enforcement, cycling enforcement/training	Noted.
2	22nd St & Witney Ave	possible to use jersey barriers; loop detection is broken	Documented for further consideration as part of the Major Intersection Reviews
3	Witney Ave between 20th-22nd	lane painting	Not recommended because Witney Avenue is a local roadway.
4	18th St between Ave W to Vancouver Ave	sidewalk needed	Added to recommendations. Priority 1- in front of school between Ave X and Montreal Ave; Priority 2 - Ave X to Ave W and Montreal Ave to Vancouver Ave
5	22nd St & Ave W (facing northbound)	needs signs identifying lanes; make inside lane left turn & outside lane Thru/Right-Turn	Documented for further consideration as part of the Major Intersection Reviews
6	Ave W	speeding	Traffic calming devices not recommended on arterials. No further recommendations.
7	21st St & Ave X	trim tree on northwest corner	Site check determined trimming not needed.
8	Wardlow Cres & Wardlow Rd	trim evergreen on northwest corner	Site check determined trimming not needed.
9	Back lanes	speed limit signs	Need specific locations.

APPENDIX F: MEETING NOTES

Lakeview Neighbourhood
Traffic Review
Thursday, May 14, 2015, 7:00 – 9:00 P.M.
Lakeview School

Facilitators:

- Mitch Riabko & Kathy Dahl (Great Works Consulting)

Agenda

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

Councillor Paulsen sends her regrets as she is unable to attend

Presentation from Transportation Division – Lakeview Neighbourhood Traffic Review
(Presented by Justine Nyen – Traffic Engineer)

Presentation Outline:

- Neighbourhood Review Process
- Timeline for Lakeview 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** – Lakeview, Meadowgreen, Adelaide-Churchill, Montgomery Place, Confederation Park, Avalon, Greystone Heights, Mount Royal

Timeline for Lakeview 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:

- Kingsmere Boulevard – Speeding
    - Kingsmere Boulevard & Whitewood Road – difficult to see westbound cars on Kingsmere (coming off of Whitewood) due to parked cars
    - Kingsmere Boulevard & Whiteshore Crescent – currently Pedestrian-Activated Signal; drivers speeding around curve NB not stopping when light is red and nearly hitting peds
    - Kingsmere Boulevard & Costigan Rd (north) – bus stop and parking obstructs drivers view on Costigan
- Lakeshore Cres – speeding
- Stillwater Dr & Emerald Cres – cars not yielding to pedestrians
- McKercher Dr & Stillwater – pedestrian safety concerns; many children crossing; install 3-way stop
- Taylor St & Weyakwin – difficult to cross or turn onto Taylor

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

<u>Presentation from Saskatoon Police Services</u>
Unable to attend.

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

<u>Small Group Discussions</u>

- Breakout into small groups to discuss traffic concerns in Lakeview and potential solutions

Lakeview Neighbourhood
Traffic Review
Thursday, November 5, 2015, 7:00 – 9:00 P.M.
St. Bernard School

Facilitators:

- Mitch Riabko & Kathy Dahl (Great Works Consulting)

Agenda

- 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 – Lakeview Neighbourhood Traffic Review
(Presented by Justine Nyen – Transportation Engineer)

Presentation Outline:

- Neighbourhood Traffic Management Program
- How We Got Here
- What We Heard
- What We Did
- What We Propose

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 November 2015 – gather feedback, conduct traffic studies, collect data, develop traffic plan
- November 2015 – Follow Up Traffic Meeting - display proposed traffic plan and gather feedback

What We Heard:

A. Speeding/Traffic Volumes:

- Kingsmere Blvd – especially near Lakeview School and around curves
- Taylor St
- Delaronde Rd

- Whiteshore Cres (school zone)
- Lakeshore Cres
- Kennossee Cres

B. Pedestrian Safety:
- Kingsemere Blvd – drivers passing on right when a pedestrian is in the crosswalk; drivers not yielding to pedestrians
- Stillwater Dr
- Taylor St & Weyakwin Dr

C. Intersection Safety:
- Kingsmere Blvd – visibility issues due to parked cars; not stopping at yield signs on intersecting streets
- Kingsmere & Stillwater – not slowing down for turns
- Taylor & Weyakwin – difficult to turn left from Weyakwin
- Taylor & McKercher – review signal timing

What We Did:
- Collected Data:
  - Past studies
  - Comments from initial meeting
  - Resident responses (phone calls, emails, letters)
  - Recorded comments from Shaping Saskatoon discussions
  - 5 Intersection / Pedestrian counts
  - 7 – 7 day traffic count (24 hour) & Average Speed measurements
  - Collision history
- Field Reviews
- Assessed the Issues
- Generated proposed recommendations

What We Propose:
- Crosswalk upgrades – 1 location
- Traffic calming – 8 locations
- Parking restrictions – 2 locations
- Stop signs (intersecting streets on Kingsmere Blvd)
- Speed display board – 1 location

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

<u>Small Group Discussions</u>
- Breakout into small groups to discuss traffic concerns in Lakeview and potential solutions

Group 1: Goran Lazic (City facilitator)
- Group was in support of recommendations with the following comments:

    - Item #2a – Kingsmere Blvd & Stillwater Dr median island & curb extension on southeast corner – may be excessive. Select island or curb extension. Curb extension should be on west leg. Not sure if southeast corner would benefit.
    - Item #3 – Kingsmere Blvd & Whiteshore Cres (north) / Delaronde Rd median island on south leg – nobody was in against it but not sure how well it will work
    - Item #9 – Stillwater Dr & Emerald Cres (west) median island on east leg – group was in support but also consider pedestrian light or curb extension instead
    - Item #10 – Taylor St & Weyakwin Dr median island on south leg – will island reduce the approach to single lane? Make sure there are 2 lanes (one for left/through and another for right). Also consider pedestrian improvements.
    - Item #12 – Speed display board on Taylor St – group was in support but consider having one for westbound traffic as well.
- Other:
    - Stillwater Dr between McKercher to Weyakwin Dr – snow pushed on the side reducing width of traffic lanes resulting in congestion
    - Kennossee Cres – shortcutting; no measures proposed to address this concern.
    - Taylor St between Kingsmere Blvd & Acadia Dr – winter snow maintenance should be improved. Slippery up the hill and vehicles getting stuck.
    -

Group 2: Justine Nyen (City facilitator)

- Item #2a – Kingsmere Blvd & Stillwater Dr median island & curb extension – preferred location is Stillwater as opposed to Costigan Rd (Item #2b). Instead of median island consider curb extension on northwest corner. Consideration for residents parking and backing out of driveways.
- Item #3 – Kingsmere Blvd & the curve between Delaronde Rd (north) & Delaronde Rd (south) – consider installing pedestrian sign on median instead of school zone sign. Maybe install school zone sign on pedestrian activated signal overhead
- Item #5 – Kingsmere Blvd & Whitewood/Wollaston – visibility issues due to trees and parked cars. Maybe parking enforcement can issue warnings for the “10m rule”.
- Item #11 – Taylor St & Weyakwin Dr parking restrictions on the southwest corner to improve visibility – consider installing on the northeast corner also.
- Other:
    - Kingsmere Blvd (further east) – trees blocking school zone sign
    - School zones should be in effect 24/7
    - Snow clearance needed in front of Lakeview School
    - Stillwater Dr & driveway across from Keeley Cres – visibility issues due to parking. Install parking restrictions to improve sightlines
    - Stillwater Dr & Weyakwin Dr – visibility issues due to parked cars on northwest corner
    - Lakeshore Cres – speeding at midblock
    - School zone – U-turns in front of Lakeview School. Police should do a blitz to educate drivers.

Group 3: Jay Magus (City facilitator)

- Item #2a – Kingsmere Blvd & Stillwater Dr median island and curb extension – some hesitation; may create a traffic problem
- Item #3 – Kingsmere Blvd & Whiteshore Cres (north)/Delaronde Rd – consider "no parking" on west side of Kingsmere north of Delaronde Rd. Tree trimming needed.
- Other:
    - Clear trees:
        - around school zone sign
        - on Kingsmere
    - McKercher Dr & Taylor St – too long green on east/west phase
    - Traffic signal timing on Taylor St - leave at green light on Arlington Ave, catch red at Circle Dr.
    - Traffic signal operation – Taylor St & Weyakwin Dr

Next Steps

1. Mail-in or email comments no later than Dec 5/15
2. Additional public input via City on-line Community Engagement webpage no later than Dec 5/15

http://shapingsaskatoon.ca/discussions/lakeview-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

Q&A

Resident: There's a focus on pedestrian safety with this review. Should consider movement of traffic.

City: The neighbourhood traffic reviews are to address issues within the neighbourhood streets. We've developed another program, major intersection reviews, where we address traffic movement on major roadways, as well as safety.

Resident: Arlington Ave & Taylor St – why does left turn signal not come on sometimes?

City: Detection needed. At least 3-4 vehicles must be queued in the left turn bay for the protected left turn signal to activate.

Resident: Sometimes there are 15 vehicles behind me and it doesn't come on.

City: The detector may have been malfunctioning. We'll look into it.

Resident: Arlington Ave & Taylor St – large tree obstructing driver's view. Should be trimmed.

City: We'll follow up.

Resident: Stillwater Dr & Kingsmere Blvd – if vehicles are restricted to pass on the right the left turning vehicles will create backlog down the street (mostly an issue for southbound traffic).

Resident: Would you consider doing one side at a time?

City: We'd implement everything at once if the recommendation is carried.

Resident: Kingsmere & Taylor – potholes. Also at Acadia & Taylor.

Resident: Better system for calling to report a pothole. Prompted with too many questions.

Resident: Taylor & Acadia – running red lights. Allowing parking in front of businesses on Taylor St. Not needed (also parking in area where it's signed as "no parking").

Resident: Circle mall – there's a berm on Taylor & 8th where there's room to expand and improve traffic flow.

List of Representatives

Mitch Riabko – Great Works Consulting, Facilitators
Jay Magus, Justine Nyen, Goran Lazic – City of Saskatoon, Transportation & Utilities

Group 1: Jay Magus (City Facilitator)

1. Kingsmere Boulevard – speeding
2. Delaronde Crescent (west) – Speeding, particularly northbound
3. Kingsmere Boulevard & Delaronde Road (south) - Yield signs are difficult to see and in poor locations; enforcement needed
4. Kingsmere Boulevard & Delaronde Road (south) - Difficult to see northbound; enforcement
5. Kingsmere Boulevard & Delaronde Road (south) - Difficult to see westbound; enforcement
6. Kingsmere Boulevard & Whiteshore Crescent/Wakaw - Why not red?
7. Kingsmere Boulevard & Wollaston Crescent/Whitewood - Bus stop eastbound on Kingsmere Boulevard is hard to see. Move it east a space.
8. Another entrance/exit into neighbourhood needed
9. Bike path around the neighbourhood
10. Highway, south of Wollaston Court - Pedestrian exit; bollards
11. Circle Drive & Delaronde Road (north) - Pedestrian connection
12. Speed on Circle Drive South
13. Taylor Street - 5 school zones; remove them
14. Taylor Street & McKercher Drive - Signal length needs to be reviewed northbound onto McKercher Drive
15. Wollaston Court - Turn around traffic; “Residents Only” sign
16. Yellowhead Highway - Air brakes
17. Kingsmere Boulevard & Kingsmere Place - Congestion; too many pedestrians
18. Kingsmere Boulevard & driveway south of Lakeshore Crescent - Hedges need to be trimmed
19. Kingsmere Boulevard & parking lot north of Lakeview School - Mud path; should be paved
20. Kingsmere Boulevard & curve south of Whiteshore Crescent (north) - Install concrete barriers
21. Kingsmere Boulevard (in front of Lakeview School) - Plow the entire length of the school require should be plowed
22. Stillwater Drive & Emerald Crescent - Drivers don’t stop at the pedestrian crossing
23. Driveway off of Stillwater Drive near McKercher Drive (west of intersection on south side) - Condition, safety, community working with Constable and CofS staff
24. Kingsmere Boulevard between Whiteshore Crescent & Wollaston Crescent - Visibility of school zone
25. Kingsmere Boulevard & south of Whiteshore Crescent - Visibility of school zone
26. Whiteshore Crescent - U-turns in front of St. Bernard
27. Skateboard Centre/Park needed
28. Mail box concerns
29. Kingsmere Boulevard & Christopher Road (south) - 5m parking restriction needed on north side of intersection
30. Kingsemere Boulevard at Wollaston Crescent (both sides of crescent) - 5m parking restriction needed
31. Kingsmere Boulevard - Passing on right

Group 2: Justine Nyen (City Facilitator)

1. Kingsmere Boulevard – speeding
    a. Kingsmere Boulevard & Stillwater Drive – pedestrian safety; drivers speeding around curve and not stopping for pedestrians; car stops for pedestrian and drivers passing on right; driving onto sidewalk due to speeds; long wait to make a left turn onto Kingsmere; bus stop nearby so many pedestrians crossing; pedestrian device needed; traffic calming, perhaps median islands needed; speed display board needed on curve; icy in the winter due to the hill
    b. Kingsmere Boulevard & Whiteshore Cres/Delaronde Rd – buses stopping/parking during peak hours; buses speeding; pedestrians crossing on opposite side of pedestrian-activated signal; difficult to see or hear oncoming drivers as a pedestrian due to the road curve; consider blocking side of crosswalk pedestrians shouldn't be using; houses and fences have been hit due to speed; speeding onto Delaronde; extend school or improve the visibility of the signage at the curve between Delaronde Rd; install traffic calming along curve or at intersection; improve visibility of school zone sign
    c. Kingsmere Boulevard & Costigan Rd – difficult to see; difficult to turn left
2. Enforcement needed:
    a. Rolling through stop signs (McKercher Dr & Stillwater Dr)
    b. Left turn (Kingsmere Blvd & Stillwater Dr)
    c. Speeding on Kingsmere Blvd (curve between Delaronde Rd)

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/lakeview-neighbourhood-traffic-review-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

Question & Answer

Resident: Can you post draft traffic plan to website prior to next meeting? And notify the Community Association?

City: Yes the plans are usually posted online one week prior.

Facilitator: Community Association will be notified

Resident: Focus on moving traffic on larger roads. Transport through city.

Resident: Speeding is the concern. Consider practical options. It all comes down to budget.

Resident: School zone on Kingsmere should be along entire stretch from Delaronde way to the other side of the school.

Resident: 30kph signs on the street really help.

Resident: What are the plans for Circle Drive and Boychuk Dr?

City: A geotechnical consultant has been hired. They're preparing an RFQ for design-build. The City is trying to acquire money from the province for this project. This likely won't happen until next spring.

Resident: Consider traffic around schools. Parking, picking up, dropping off etc.

Resident: Why aren't they running 2 shifts for construction of the cloverleaf? Not overtime, just 2 shifts. Can't understand why we don't have 2 shifts.

City: We paved the ramps on the cloverleaf last year at night and this is expensive.

Resident: I've been taking Circle Drive South home with the University Bridge closure, and a couple days ago traffic was backed up all the way to Clarence Ave. It was a parking lot. Should work 2 shifts for the construction at the cloverleaf to get traffic moving.

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

Meadowgreen Neighbourhood Traffic Review

Recommendation
That the Standing Policy Committee on Transportation recommend to City Council:

That the Neighbourhood Traffic Review for the Meadowgreen neighbourhood be adopted as the framework for future traffic improvements in the area, to be undertaken as funding is made available through the annual budget process.

Topic and Purpose
The purpose of this report is to provide information on the Neighbourhood Traffic Review for the Meadowgreen neighbourhood.

Report Highlights
A traffic plan for the Meadowgreen neighbourhood was developed in consultation with the community in response to concerns such as speeding, traffic shortcutting, and pedestrian safety. The plan will be implemented over time as funding for the improvements is available.

Strategic Goal
This report supports the Strategic Goal of Moving Around by providing a plan to guide the installation of traffic calming devices and pedestrian safety enhancements to improve the safety of pedestrians, motorists, and cyclists.

Background
A public meeting was held in January 2015 to identify traffic concerns and potential solutions within the Meadowgreen neighbourhood. Representatives from the Saskatoon Police Service were in attendance to address traffic enforcement issues. Based on the residents' input provided at the initial public meeting and the analysis of the traffic data collected, a Traffic Management Plan was developed and presented to the community at a second public meeting held in September 2015.

Report
The development and implementation of the Traffic Management Plan includes four stages:

1. Identify existing problems, concerns and possible solutions through the initial neighbourhood consultation and the Shaping Saskatoon.ca website;
2. Develop a draft traffic plan based on residents' input and traffic assessments;
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 adoption; and
4. Implement the proposed measures in a specific time frame, short-term (1 to 2 years), medium-term (3 to 5 years), or long-term (more than 5 years).

The majority of concerns received during the consultation included: shortcutting, speeding, pedestrian safety, and parking.

The Administration is recommending the following modifications to improve safety in the Meadowgreen neighbourhood:

- Stop signs
- Parking restrictions
- Miscellaneous signage
  - Hazard boards (red & white striped boards added underneath stop signs)
  - Enhanced pedestrian signs (larger pedestrian signs)
- Traffic calming devices
  - Curb extensions
  - Median islands
- Active pedestrian corridor
- Sidewalks

The installation of each proposed improvement will be implemented in three specific time frames as follows:

Short-term (1 to 2 years)	Temporary traffic calming measures, signage, pavement markings, accessible pedestrian ramps
Medium-term (3 to 5 years)	Permanent traffic calming devices, roadway realignment, sidewalks (in some cases), major intersection reviews
Long-term (5 years plus)	Permanent traffic calming devices, roadway realignment, sidewalks

The Meadowgreen Neighbourhood Traffic Review is included in Attachment 1.

Public and/or Stakeholder Involvement

In January 2015, a public meeting was held to discuss traffic concerns and identify potential solutions. The feedback was used to develop the neighbourhood traffic plan which was presented at a follow-up public meeting in September 2015. Additional feedback received at the follow-up public meeting was also incorporated into the Neighbourhood Traffic Review.

Feedback was provided by internal civic stakeholders of various divisions and departments: Public Works, Saskatoon Transit, Planning & Development, Saskatoon Light & Power, Saskatoon Police Service, and the Saskatoon Fire Department on the proposed improvements, which was incorporated into the recommended neighbourhood traffic review.

Communication Plan

The final neighbourhood traffic plan will be shared with the residents of the impacted neighbourhood using several methods: City website, the Community Association, communication forums (i.e. website, newsletter), and by a direct mail-out.

Environmental Implications

The overall impact of the recommendations on traffic characteristics, including the impacts on greenhouse gas emissions, has not been quantified at this time.

Financial Implications

The implementation of the neighbourhood traffic plan will have significant financial implications. The costs are summarized in the following table.

Item	2016	Beyond 2016
Traffic Calming	$1,500	$ 95,000
Traffic Control Signs	2,000	-
Pedestrian Devices	-	20,000
Miscellaneous Signs	2,000	-
Sidewalks	-	315,000
TOTAL	$5,500	$430,000

There is sufficient funding within Capital Project #1512 – Neighbourhood Traffic Management to undertake the work in 2016.

The remainder of the work, beyond 2016, will be considered alongside all other improvements identified through the Neighbourhood Traffic Management Program. The Administration's annual budget submission package will include the list of projects recommended to be funded, and the rationale used to prioritize the projects.

Other Considerations/Implications

There are no options, policy, privacy or CPTED considerations or implications.

Due Date for Follow-up and/or Project Completion

If adopted by City Council, temporary traffic calming devices and signage will be implemented during the 2016 construction season.

Public Notice

Public Notice pursuant to Section 3 of Policy No. C01-021, Public Notice Policy, is not required.

Attachment

1. Meadowgreen Neighbourhood Traffic Review, January 14, 2016

Report Approval

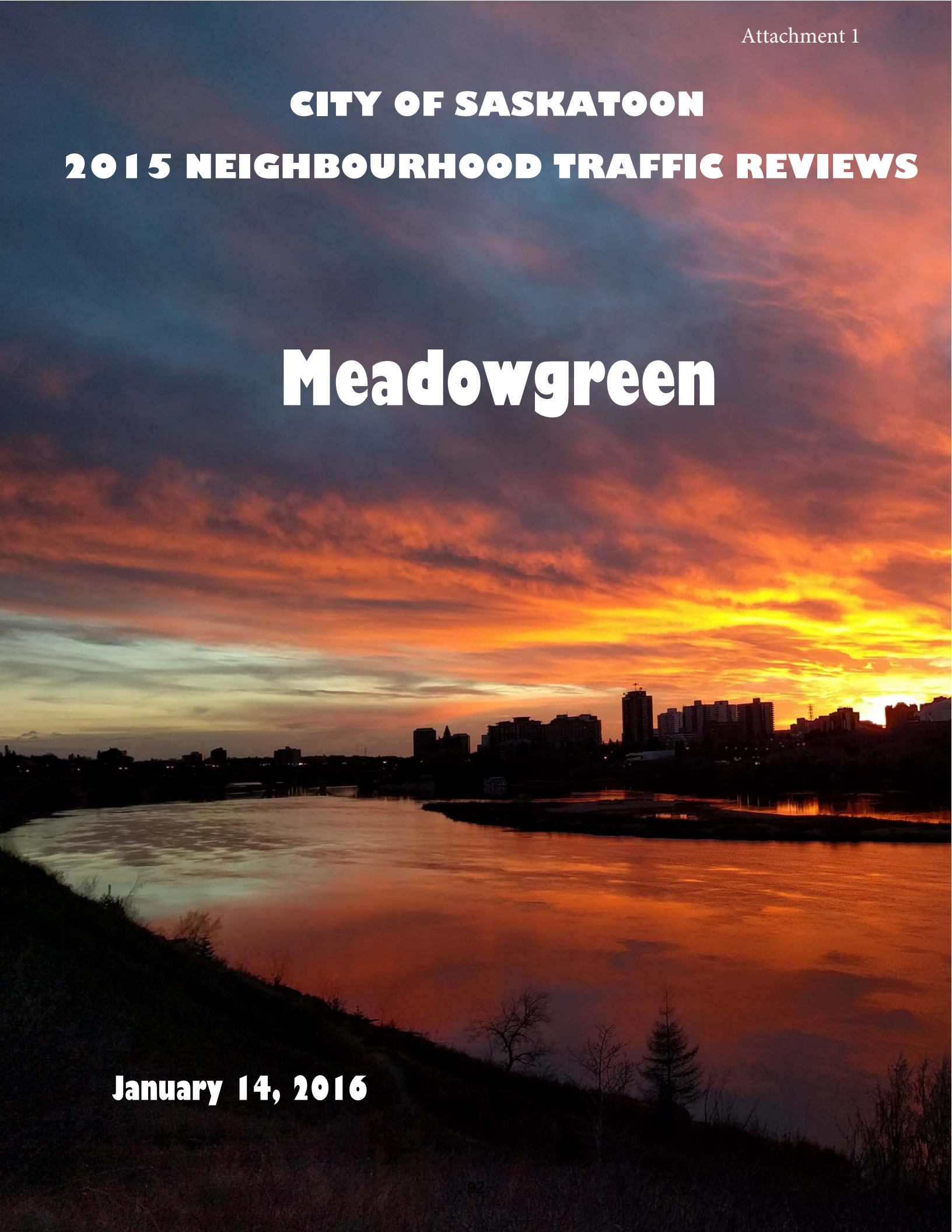
Written by:	Justine Nyen, Traffic Safety Engineer, Transportation
Reviewed by:	Jay Magus, Engineering Manager, Transportation
Reviewed by:	Angela Gardiner, Director of Transportation
Approved by:	Jeff Jorgenson, General Manager, Transportation & Utilities Department

TRANS JN – Meadowgreen Neighbourhood Traffic Review

CITY OF SASKATOON

2015 NEIGHBOURHOOD TRAFFIC REVIEWS

Meadowgreen



January 14, 2016

Meadowgreen Neighbourhood Traffic Review

January 14, 2016

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:

- Meadowgreen residents
- Meadowgreen Community Association
- Saskatoon Police Services
- 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 Pat Lorje

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 January of 2015 to identify traffic concerns and potential solutions within the Meadowgreen 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 September 2015.

A summary of recommended improvements for the Meadowgreen 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.

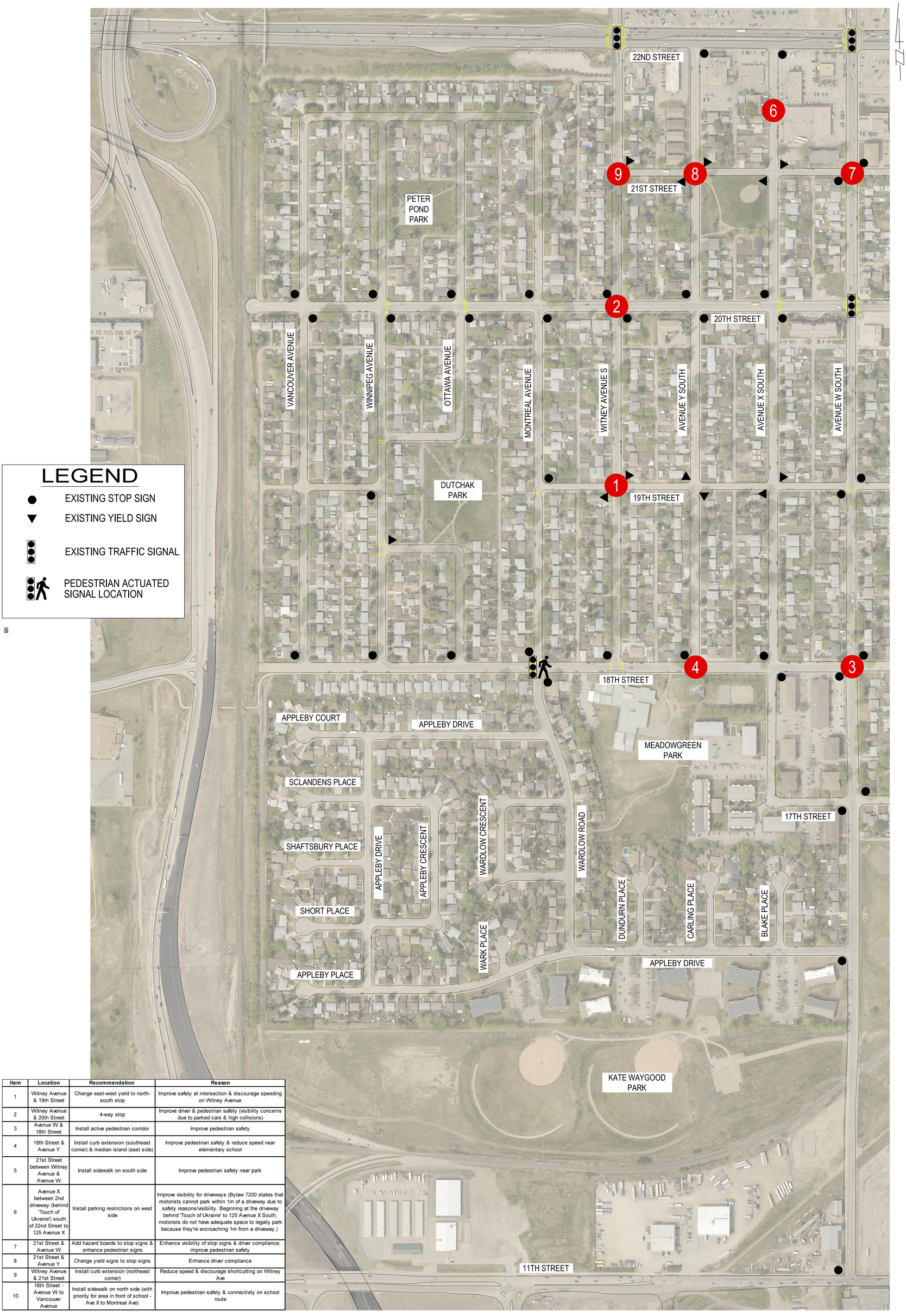
The resulting proposed Meadowgreen Traffic Management Plan is illustrated in **Exhibit ES-1**.

Table ES-1: Meadowgreen Neighbourhood Recommended Improvements

Item	Location	Recommendation	Reason
1	Witney Avenue & 19th Street	Change east-west yield to north-south stop	Improve safety at intersection & discourage speeding on Witney Avenue
2	Witney Avenue & 20th Street	4-way stop	Improve driver & pedestrian safety (visibility concerns due to parked cars & high collisions)
3	Avenue W & 18th Street	Install active pedestrian corridor	Improve pedestrian safety
4	18th Street & Avenue Y	Install curb extension (southeast corner) & median island (east side)	Improve pedestrian safety & reduce speed near elementary school
5	21st Street between Witney Avenue & Avenue W	Install sidewalk on south side	Improve pedestrian safety near park
6	Avenue X between 2nd driveway (behind 'Touch of Ukraine') south of 22nd Street to 125 Avenue X	Install parking restrictions on west side	Improve visibility for driveways (Bylaw 7200 states that motorists cannot park within 1m of a driveway due to safety reasons/visibility. Beginning at the driveway behind 'Touch of Ukraine' to 125 Avenue X South, motorists do not have adequate space to legally park because they're encroaching 1m from a driveway.)
7	21st Street & Avenue W	Add hazard boards to stop signs & enhance pedestrian signs	Enhance visibility of stop signs & driver compliance; improve pedestrian safety
8	21st Street & Avenue Y	Change yield signs to stop signs	Enhance driver compliance
9	Witney Avenue & 21st Street	Install curb extension (northeast corner)	Reduce speed & discourage shortcutting on Witney Ave
10	18th Street - Avenue W to Vancouver Avenue	Install sidewalk on north side (with priority for area in front of school - Ave X to Montreal Ave)	Improve pedestrian safety & connectivity on school route

MEADOWGREEN TRAFFIC PLAN

City of Saskatoon



LEGEND

- EXISTING STOP SIGN
- EXISTING YIELD SIGN
- EXISTING TRAFFIC SIGNAL
- PEDESTRIAN ACTUATED SIGNAL LOCATION

Item	Location	Recommendation	Reason
1	Witney Avenue & 19th Street	Change east-west yield to north-south stop	Improve safety at intersection & discourage speeding on Witney Avenue
2	Witney Avenue & 20th Street	4-way stop	Improve driver & pedestrian safety (visibility concerns due to parked cars & high collisions)
3	Avenue W & 18th Street	Install active pedestrian corridor	Improve pedestrian safety
4	18th Street & Avenue Y	Install curb extension (southeast corner) & median island (east side)	Improve pedestrian safety & reduce speed near elementary school
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6	Avenue X between 2nd driveway (behind 'Touch of Ukraine') south of 22nd Street to 125 Avenue X	Install parking restrictions on west side	Improve visibility for driveways (Bylaw 7200 states that motorists cannot park within 1m of a driveway due to safety reasons/visibility. Beginning at the driveway behind 'Touch of Ukraine' to 125 Avenue X South, motorists do not have adequate space to legally park because they're encroaching 1m from a driveway.)
7	21st Street & Avenue W	Add hazard boards to stop signs & enhance pedestrian signs	Enhance visibility of stop signs & driver compliance; improve pedestrian safety
8	21st Street & Avenue Y	Change yield signs to stop signs	Enhance driver compliance
9	Witney Avenue & 21st Street	Install curb extension (northeast corner)	Reduce speed & discourage shortcutting on Witney Ave
10	18th Street - Avenue W to Vancouver Avenue	Install sidewalk on north side (with priority for area in front of school - Ave X to Montreal Ave)	Improve pedestrian safety & connectivity on school route

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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 Meadowgreen.

The Meadowgreen neighbourhood is located on the west side of the South Saskatchewan River and is bound by railway line to the south, Avenue W to the east, Circle Drive to the west, and 22nd Street to the north. The area use is mostly residential, with an elementary school (W.P. Bate School) on 18th Street, and some commercial land use along 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, AND POSSIBLE SOLUTIONS

A public meeting was held in January 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 included 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 Meadowgreen, the bordering arterial streets (22nd Street and Avenue W) are 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:

- Witney Ave between 18th Street & 20th Street
- Montreal Avenue
- 18th Street
- 21st Street (near park)
- Avenue X between 20th Street & 22nd Street
- Avenue Y between 20th Street & 22nd Street
- Back lane west of Witney Ave (south of 22nd Street)

Proposed solutions identified by residents:

- Install traffic calming (i.e. median islands, roundabouts, speed humps)
- Install four-way stop
- Provide more links in and out of Meadowgreen
- Create connections to Circle Drive

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:

- 18th Street & Avenue W
- Witney Avenue & 20th Street
- 22nd Street – dips in median are not safe to cross at; crosswalk lights take too long to activate

Proposed solutions identified by residents:

- 18th Street & Avenue W – install pedestrian signal; install bus shelter
- 21st Street (near park) – install sidewalk

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:

- Witney Avenue & 20th Street
- Witney Avenue & 19th Street

Proposed solutions identified by residents:

- Install four-way stop (Witney Avenue & 20th Street, 21st Street & Avenue Y, 21st Street & Avenue X)
- Change the direction of the stop signs (Witney Avenue & 19th Street)

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:

- Avenue X (near Sarcan)
- Witney Avenue & 20th Street
- Back lane near Avenue X & 22nd Street

Proposed solutions identified by residents:

- Parking restrictions
- Parking enforcement
- Back lane closure
- Blocking driveways

2.5 Concern 5 – Maintenance

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

Neighbourhood concerns regarding maintenance were:

- Back lane maintenance
- Snow removal (especially on bus routes)
- Trees blocking signs

2.6 Concern 6 – Major Intersections

Major intersections include roadways with higher traffic volumes (i.e. arterials, collectors) or intersections with an existing traffic signal.

Neighbourhood concerns regarding major intersections:

- 22nd Street & Witney Avenue
- 22nd Street & Avenue W

Proposed solutions identified by residents:

- 22nd Street & Witney Avenue:
    - Install a right-turn lane on 22nd Street to accommodate eastbound traffic to turn southbound onto Witney Avenue.
    - Move the lane marking on Witney Avenue to the centre of the road. It is offset to the west to make that side of the street narrower.
    - The intersection requires an advance left-turn signal for south bound traffic on Witney Avenue.
    - Install an advanced green turning light for traffic turning west (left) onto 22nd Street from Witney Avenue.
    - Install concrete barriers on Witney Avenue in front of gas station access to restrict entering and exiting going southbound.
    - No left turns allowed between 4:00pm – 6:00 pm.
    - Add another southbound lane.
- 22nd Street & Avenue W:
    - North traffic should be one lane for left turn, one lane for straight or right.
    - Remove the traffic calming at 23rd Street (causes queuing at 22nd Street)
    - Even though there is a left hand turning arrow, it is not long enough. There is so much traffic (vehicular and pedestrian) from the Agrium buses coming from the parking lot (No Frills parking lot) it can be dangerous.
    - Walk light northbound should be longer.

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
    - 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. 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**.

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 Meadowgreen 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**.

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

Street	Between	Class	Average Daily Traffic (vpd)	Speed (kph)
Back lane south of 22nd Street	Witney Avenue & Vancouver Avenue	lane	<100	NA
Witney Avenue	21st Street to 20th Street	local	4,100	48.7
Witney Avenue	19th Street to 20th Street		1,100	46.5
Montreal Avenue	19th Street to 20th Street		459	49.8
21st Street	Avenue Y to Avenue X		510	39.9
Avenue X	20th Street to 21st Street		635	45.6
Avenue Y	21st Street & 20th Street		922	38.7
18th Street	Avenue Y to Avenue X	collector	1,600	school=42.9; regular=49.1
18th Street	Ottawa Avenue to Montreal Avenue		786	47.2
20th Street	Witney Avenue to Montreal Avenue	minor arterial	1,845	51.6
20th Street	Witney Avenue to Vancouver Avenue		2,511	52.3

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**.

Table 3-3: All-Way Stop Assessments

Location	Criteria 1: Peak Hour Count	Criteria 2: Average Daily Traffic (vpd)	Criteria 3: # of Collisions within most recent 12 months	Condition 1: % of Traffic from minor street	Condition 2: Traffic Signals or all-way stop within 200m	All-Way Stop Warrant
18th Street & Avenue W	561	6,260	2	18%	no	All-Way Stop Not Warranted
Avenue W & 21st Street	875	8,770	5	16%	yes	
21st Street & Avenue Y	138	1,440	1	30%	no	
20th Street & Witney Avenue	488	5,600	4	46%	no	Additional Review

20th Street & Witney Avenue was further reviewed due to high collisions and concerns raised during the public consultation. Since the additional conditions (percent of traffic on the minor street and distance from the nearest traffic signals or all-way stop) are met, a four-way stop should improve safety while maintaining adequate traffic flow. For these reasons, a four-way stop will be included in the recommendations. Traffic volumes will be monitored after the installation to determine the effectiveness.

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:

- 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 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**.

Table 3-4: Pedestrian Assessment

Location	Number of Pedestrians Crossing During Peak Hours	Results
18th Street & Avenue W	172	Active Pedestrian Corridor Warranted
Avenue W & 21st Street	86	Pedestrian Device Not Warranted
20th Street & Witney Avenue	33	

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

3.5 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:

- Avenue W & 21st Street
- 20th Street & Witney Avenue
- Avenue W & 18th Street
- Avenue X & 19th Street
- Avenue W & 19th Street

Details of the collision analysis are provided **Appendix E.**

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 not 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
18th Street & Avenue Y	Install curb extension (southeast corner) & median island (east side)	Improve pedestrian safety & reduce speed near elementary school
Witney Avenue & 21st Street	Install curb extension (northeast corner)	Reduce speed & discourage shortcutting on Witney Avenue

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
Avenue W & 18th Street	Install active pedestrian corridor	Improve pedestrian safety
18th Street & Avenue Y	Install curb extension (southeast corner) & median island (east side)	Improve pedestrian safety & reduce speed near elementary school
21st Street between Witney Avenue & Avenue W	Install sidewalk on south side	Improve pedestrian safety near park
21st Street & Avenue W	Enhance pedestrian signs	Enhance visibility of stop signs & driver compliance; improve pedestrian safety
18th Street - Avenue W to Vancouver Avenue	Install sidewalk on north side	Improve pedestrian safety & connectivity on 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
Witney Avenue & 19th Street	Change east-west yield to north-south stop	Improve safety at intersection & discourage speeding on Witney Avenue
Witney Avenue & 20th Street	four-way stop	Improve driver safety
21st Street & Avenue W	Add hazard boards to stop signs	Enhance visibility of stop signs & driver compliance
21st Street & Avenue Y	Change yield signs to stop signs	Enhance driver compliance

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
Avenue X between 2nd driveway (behind 'Touch of Ukraine') south of 22nd Street to 125 Avenue X	Install parking restrictions on west side	Improve visibility for driveways (Bylaw 7200, The Traffic Bylaw states that motorists cannot park within 1m of a driveway due to safety reasons/visibility. Beginning at the driveway behind 'Touch of Ukraine' to 125 Avenue X South, motorists do not have adequate space to legally park because they're encroaching 1m from a driveway.)

4.6 Transit Improvements

During the consultation a bus shelter was requested at the bus stop north of 18th Street on the east side of Avenue W. During the site reviews it was noted that this location had many riders waiting to get on the bus. Unfortunately the stop is not ideal for a bus shelter, as the space is limited due to the narrow boulevard. A bus shelter is recommended on the south side of the intersection, as there is adequate space for implementation. Furthermore, the active pedestrian corridor at 18th Street and Avenue W is recommended to be installed on the south side, which will provide a better connection. These comments were forwarded to Transit Services for further consideration of installation of the bus shelter through their programs.

4.7 Follow Up Consultation – Presentation of Traffic Management Plan

The initial recommended improvements were presented at a follow-up public meeting in September 2015. 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 E**. A decision matrix for additional comments received after the draft traffic plan is also included in **Appendix E**.

The recommendations were circulated to the Civic Divisions (including Police Service, Light & Power, Saskatoon Fire Department, Environmental Services, and 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 22nd Street or Avenue W, 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 Meadowgreen 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 Control Signs Cost Estimate
- **Table 5-2**: Pedestrian Devices Cost Estimate
- **Table 5-3**: Miscellaneous Signs Cost Estimate
- **Table 5-4**: Sidewalk Cost Estimate
- **Table 5-5**: Total Cost Estimate

Table 5-1: Traffic Control Signs Cost Estimate

Location	Device	Number of Signs	Cost Estimate	Time Frame
Witney Avenue & 19th Street	Stop signs	2	$500	1 to 2 years
Witney Avenue & 20th Street	Stop signs	4	$1,000	
21st Street & Avenue Y	Stop signs	2	$500	
Totals		**8**	**$2,000**	

Table 5-2: Pedestrian Devices Cost Estimate

Location	Device	Cost Estimate	Time Frame
Avenue W & 18th Street	Active pedestrian corridor	$20,000	1 to 5 years
Total		**$20,000**	

Table 5-3: Miscellaneous Signs Cost Estimate

Location	Device	Number of Signs	Cost Estimate	Time Frame
21st Street & Avenue W	Add hazard boards to stop signs	2	$500	1 to 2 years
21st Street & Avenue W	Oversized pedestrian signs	4	$1,000	
Avenue X between 2nd driveway (behind 'Touch of Ukraine') south of 22nd Street to 125 Avenue X	"No Parking" sign	2	$500	
Back lane south of 22nd Street - access from Witney Avenue	20kph speed sign	1	$250	
Totals		**9**	**$2,250**	

Table 5-4: Sidewalk Cost Estimate

Street	Between	Length (metres)	Cost Estimate	Time Frame
21st Street	Witney Avenue & Avenue W (south side only)	270	$94,500	5 years plus
18th Street	Avenue W to Vancouver Avenue (north side only)	630	$220,500	
Totals		**900**	**$315,000**	

Table 5-5: Total Cost Estimate

Category	Signing & Temporary Traffic Calming	Permanent
Traffic Calming	$1,500	$95,000
Traffic Control Signs	$2,000	0
Pedestrian Devices	$0	$20,000
Miscellaneous Signs	$2,000	0
Sidewalk	$0	$315,000
Totals	**$5,500**	**$430,000**

The total cost estimate for the signage and temporary traffic calming to be installed in 2016 is **$5,500**. The total cost estimate for the installation of future permanent devices, including the active pedestrian corridor, and sidewalks, is **$430,000**.

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

MEADOWGREEN TRAFFIC PLAN

City of Saskatoon

LEGEND

- EXISTING STOP SIGN
- EXISTING YIELD SIGN
- EXISTING TRAFFIC SIGNAL
- PEDESTRIAN ACTUATED SIGNAL LOCATION

Item	Location	Recommendation	Reason
1	Witney Avenue & 19th Street	Change east-west yield to north-south stop	Improve safety at intersection & discourage speeding on Witney Avenue
2	Witney Avenue & 20th Street	4-way stop	Improve driver & pedestrian safety (visibility concerns due to parked cars & high collisions)
3	Avenue W & 18th Street	Install active pedestrian corridor	Improve pedestrian safety
4	18th Street & Avenue Y	Install curb extension (southeast corner) & median island (east side)	Improve pedestrian safety & reduce speed near elementary school
5	21st Street between Witney Avenue & Avenue W	Install sidewalk on south side	Improve pedestrian safety near park
6	Avenue X between 2nd driveway (behind 'Touch of Ukraine') south of 22nd Street to 125 Avenue X	Install parking restrictions on west side	Improve visibility for driveways (Bylaw 7200 states that motorists cannot park within 1m of a driveway due to safety reasons/visibility. Beginning at the driveway behind 'Touch of Ukraine' to 125 Avenue X South, motorists do not have adequate space to legally park because they're encroaching 1m from a driveway.)
7	21st Street & Avenue W	Add hazard boards to stop signs & enhance pedestrian signs	Enhance visibility of stop signs & driver compliance; improve pedestrian safety
8	21st Street & Avenue Y	Change yield signs to stop signs	Enhance driver compliance
9	Witney Avenue & 21st Street	Install curb extension (northeast corner)	Reduce speed & discourage shortcutting on Witney Ave
10	18th Street - Avenue W to Vancouver Avenue	Install sidewalk on north side (with priority for area in front of school - Ave X to Montreal Ave)	Improve pedestrian safety & connectivity on school route

Table 5-6: Meadowgreen Neighbourhood Recommended Improvements

Item	Location	Recommendation	Reason
1	Witney Avenue & 19th Street	Change east-west yield to north-south stop	Improve safety at intersection & discourage speeding on Witney Avenue
2	Witney Avenue & 20th Street	four-way stop	Improve driver & pedestrian safety (visibility concerns due to parked cars & high collisions)
3	Avenue W & 18th Street	Install active pedestrian corridor	Improve pedestrian safety
4	18th Street & Avenue Y	Install curb extension (southeast corner) & median island (east side)	Improve pedestrian safety & reduce speed near elementary school
5	21st Street between Witney Avenue & Avenue W	Install sidewalk on south side	Improve pedestrian safety near park
6	Avenue X between 2nd driveway (behind 'Touch of Ukraine') south of 22nd Street to 125 Avenue X	Install parking restrictions on west side	Improve visibility for driveways (Bylaw 7200 states that motorists cannot park within 1m of a driveway due to safety reasons/visibility. Beginning at the driveway behind 'Touch of Ukraine' to 125 Avenue X South, motorists do not have adequate space to legally park because they're encroaching 1m from a driveway.)
7	21st Street & Avenue W	Add hazard boards to stop signs & enhance pedestrian signs	Enhance visibility of stop signs & driver compliance; improve pedestrian safety
8	21st Street & Avenue Y	Change yield signs to stop signs	Enhance driver compliance
9	Witney Avenue & 21st Street	Install curb extension (northeast corner)	Reduce speed & discourage shortcutting on Witney Ave
10	18th Street - Avenue W to Vancouver Avenue	Install sidewalk on north side (with priority for area in front of school - Ave X to Montreal Ave)	Improve pedestrian safety & connectivity on school route

APPENDIX A: MEETING MINUTES

Meadowgreen LAP Meeting #7
Neighbourhood Traffic Review Meeting
W. P. Bate School Community Room
2515 18th St West
January 14, 2015
7:00 pm

Attendees: Pat Tymchatyn, Vasanth Iynkaran, Diane Tate, Cindy Friesen, George Henderson, Jeff Kolody, Yvonne Boehn, Raichelle Bueckert, Allan Alexander, Morgan Wolochuk, Orest Ewaniuk, Nicola Lawson, George Benden, Seling Drake, R. Russell, R. Dueck, Nicole Simpson, Hannah Chukwu, Sultan Ali Sadat, Rina Veltkamp, Gilbert Ouellette, Lisa Neudorf, Michael Greene, Hugh Pingue, Mark Emmons - Senior Planner, Mark Wilson - Planner, Justine Nyen & Lanre Akindipe - Traffic Engineers, Angela Gardiner - Director of Transportation Division, Constable Brad Tuck - Traffic Safety Division, Councillor Pat Lorje, Shirlene Palmer – Recording Secretary

1. Welcome, Introductions & Agenda

Meeting called to order at 7:00 p.m.
Mark Emmons introduced himself as the lead planner of the Meadowgreen Local Area Plan and thanked everyone for coming out to tonight's meeting. Thanks to W.P. Bates School for hosting the meeting.

Councilor Lorje has been a great support throughout the LAP process. She has to leave early tonight to attend another meeting, but will be around for the beginning of our meeting.

Meadowgreen neighbourhood goes from 22nd Street in the north to Avenue W to the east, the railway tracks to the south and Circle Drive to the west. This is the area we will focusing on tonight. We know there are traffic issues on 11th Street and because that corridor spans several neighbourhoods, it's being dealt with at a separate meeting with several neighbourhoods.

This meeting is also part of the ongoing Meadowgreen Local Area Plan. Through the LAP process, we have a series of topic-based meetings to talk about what the neighbourhood wants to discuss, such as neighbourhood safety, parks, culture, municipal services. With the new neighbourhood-level traffic review program, we are utilizing this process to contribute to the overall LAP project.

Mark is the lead of the LAP and through community input he will work with the community to develop a plan to help the neighbourhood address challenges/opportunities. The plan will result in a document filled with recommendations that will be implemented. Every recommendation is a local improvement project that is assigned to a City department or community organization.

Mark noted there is a great turn out for tonight's meeting and hopes some of these attendees will continue working on the LAP.

Mitch Riabko & Kathy Dahl, Great Works Consulting, will facilitate tonight's meeting. They help you get to where you want to be. There are a number of traffic concerns that will be looked at tonight. First we will start with sharing information through a short presentation so everyone is on the same page followed by small group work and there will then be a time for questions. Not only discuss the issues, but what are some solutions that may address them. The attendees are asked to please follow the Foundations of Success that are posted.

2. Foundations for Success

Foundations for Successful Meetings specify how the meeting will be conducted. They are used to ensure that attendees feel comfortable sharing their concerns, opinions and ideas with the group here tonight.

The Foundations for Success are:

1. **Information Sharing & Gathering**
   - Share what you think is important
   - Everyone works together to make decisions
2. **Respect**
   - Respect every comment or idea that comes forward
   - Respect each other's opinions and perceptions
3. **Integrity**
   - Speak your mind respectfully
   - Honesty is the best policy!
   - Your voice is not heard if you don't participate
4. **Fair and Equal Representation**
   - Everyone will have their opportunity to share
   - Everyone has something important to contribute
   - Strive for equal representation from all stakeholders within the area
5. **No Repetitive Discussion**
   - There is limited time within meetings, discussion of topics already covered may have to occur outside scheduled meeting time
6. **Orderly Participation**
   - Listen when others are speaking
   - Please raise hand to share your thoughts

<u>Councillor Lorje Opening Comments</u>

Councillor Lorje thanked Pat Tymchatyn, Community Association President for being so involved with the LAP. She also thanked all the attendees for taking part, it is always exciting to hear what people have to say.

She noted the City, CN and CP rails have agreed to begin meeting on a senior level to negotiate and try to resolve some of the traffic issues throughout the city. If anyone is experiencing traffic delays please note the specific details (day, time, location and length of delay) and email to Councillor Lorje who will pass it along to the committee.

She also noted there is a separate meeting being held in June to address the concern of increased traffic on 11th Street due in part to the new south bridge.

3.a. Traffic Management Presentation
Justine Nyen, Traffic Engineer

11th Street Review

- A separate meeting has been scheduled for June 3rd, 2015 at W.P. Bate School to assess the corridor from Circle Drive to Avenue H.
- The meeting will address issues, such as:
  - Number of Lanes
  - Pedestrian accommodation
  - Type of traffic control (signals vs. signs)
  - Type of intersections
  - Access management

Neighbourhood Traffic Management

- Address neighbourhood traffic issues:
  - Speeding concerns
  - Short-cutting concerns
  - Pedestrian safety
  - Intersection safety

- In August 2013 there was a program change that now includes a Neighbourhood-wide review which gives more community/stakeholder feedback and at the same time efficient use of staff resources.

- Timeline for Meadowgreen Traffic Review:
  - January 2015 is this initial Traffic Meeting
  - January to Fall 2015 we will gather feedback, conduct traffic studies, collect data, develop traffic plan
  - Fall 2015 there will be a follow up Traffic Meeting with a display of the proposed traffic plan and feedback will be gathered.
  - There will then be approximately one month to continue gathering feedback and the plan will be finalized.
  - The Traffic Plan will then be presented to City Council for approval, with implementation to follow.

Sources of Information

- Information has been collected from collision statistics, Community Engagement Online Tool, phone calls and emails received by the Transportation Division since neighbourhood-wide traffic program was developed in August 2013.

- In the future, information will be gathered from public consultations (meetings, correspondence, Shaping Saskatoon discussion and traffic counts and assessments.

Description of Traffic Calming

Traffic calming is intended to slow speeds, reduce collisions, enhance safety for pedestrians and reduce shortcutting. Some of the traffic calming is relatively inexpensive.

Types:

- Curb Extensions
  - Zebra/striped crosswalk – enhance visibility
  - Landscaping can improve appearance
- Raised Median
  - Can also serve as a refuge when pedestrian crossing
- Roundabouts
  - Very nice landscaping can be done.
- Speed Humps
  - Not recommended on transit routes
  - Can increase emergency response times
  - Creates some noise
- Raised Cross Walk
- Diverter
- Right In Right Out Island
- Directional Closure
  - Large curb extensions with one-way street which eliminates shortcutting
- Raised Median Through Intersection
- Full Closure

Pedestrian Safety Around Parks & Playgrounds

- A report was submitted to City Council in March 2014 responding to an inquiry regarding implementation of "Children at Play Speed Zones" around pools, playgrounds and water parks located outside of school zones or school hours.
- Rather than commissioning a study, City Council has advised we gather feedback directly from communities to address their concerns
- We want to know:
  - Are there any parks/playgrounds in your area that you have concerns about?
  - What are your solutions?

- Opportunity to discuss in small groups

b. Saskatoon Police Service Presentations
Constable Brad Tuck

Constable Tuck stated this is his third year involved with Traffic Safety for Meadowgreen and 8th year with Police Services. Meadowgreen is a unique neighbourhood as you don't have major roadway going through but are surrounded by them.

Although he does not have the numbers with him at the meeting, there is generally a lot of enforcement at 22nd and Witney as it is a High Collision Enforcement Intersection so it gets a lot of attention. On 11th Street there is a lot of laser/radar enforcement done as well. We do not get a lot of complaints about the school zone, but will do drive throughs regularly.

Questions:

- **If someone has a concern about speeding or other traffic concerns what number should they contact?**

  They should contact the main number, (306) 975-8300 which is the Communication Centre and say they would like to report a traffic complaint and they will be forwarded to the appropriated department. These complaints are then reviewed daily.

- **Do you ever set up speed traps down back lanes? Some back lanes are like speedways.**

  Radar is not set up in back lanes, but if there are concerns contact the 8300 number so it can be reviewed. The more specific you are about an issue the better; if it is a particular vehicle that races daily down the lane ensure you give time of day, type/color of vehicle, etc.

Comments:

- On Avenue W and 22nd Street, even though there is a left hand turning arrow, it is not long enough. There is so much traffic (vehicular and pedestrian) from the Agrium buses coming from the parking lot (No Frills parking lot) it can be dangerous. Pedestrians cross wherever they want and police presence does not seem to be there.

Constable Tuck noted this is the first time he has heard of this concern. This is something he can look into if he knows what time of day these concerns usually are.

- When previously contacting Communication Centre about a specific driver and their speed I was told I would have to go into Police Services and officially lay a complaint and might even have to go to court. I don't want to have to do this so I don't call.

Constable Tuck stated if you are just calling in a traffic complaint you can just do this anonymously by saying you want to report a traffic complaint. If you want to specifically report one person then you do have to come into Police Services, in order for consideration of laying charges against the driver.

c. Traffic Issues in Meadowgreen Discussion
Seeking Your Ideas & Solutions

The attendees were divided into three groups and asked to discuss the following:

1. What ideas or solutions do you have to improve traffic flow/safety in your neighbourhood (what's working or not working)?
2. Identify additional traffic issues and solutions in Meadowgreen.

Following the discussion they were asked to then prioritize the concerns. This does not mean that anything will get dropped for the list but shows where the most concern is. Everything is important, but what are your priorities?

Mark Emmons Group

1. Southbound on Witney turning into CreeWay backs up when turning left. Barricade maybe?
2. Northbound Witney turning left onto 22nd. Light too short. Needs left turn arrow. Parked vehicles on east side of Witney near 22nd also an issue.
3. 20th & Witney vehicles nose too far out into 20th at stop sign. Possibly due to visibility issues.
4. CNR trains idling between 18th St and south end of Meadowgreen. Idle for hours, noise pollution for adjacent homes. Dangerous fumes too.

General comment: People drive different in winter. Often ignoring rules of road. Traffic education and enforcement issue.

5. Bus stop on north Witney (west side) is across from CreeWay where drivers are backed up, as noted in #1. So right lane has bus & left turning vehicles bog down Witney, leaving no room for southbound drivers to get through. Maybe add another southbound lane by shaving off edge of recycling depot.
6. 21st St homes by Montreal & Vancouver with rear garages need access to Witney to go northbound. Currently come out of back lane because other accesses are closed to vehicles and only other option is 20th St Barricade at CreeWay would create new problems for those north end homeowners.
7. Trains blocking 11th Street
8. 11th & W intersection impossible to turn left onto 11th at rush hour, even tough to turn right onto 11th at that time too.
9. Snow removal needed on bus routes.

General Comment: Visibility of signage in many locations is an issue, overgrown trees

10. 18th St at Circle or 20th at Circle would provide another exit from neighbourhood. Concerned about impacting school or residents through. Complex challenge. No consensus on how to proceed. Would like to see feasible options for neighbourhood to consider.

Landre Akindipe Group

- Witney/22nd Street
    - Driveway Issues
    - LT traffic northbound/southbound
    - Signal timing review
    - Red light running motorists
- 18th St (Winnipeg-Ave W)
    - Speeding Concerns
- 18th St/Ave W
    - Traffic calming devices
    - Ped actuated signal
    - Lots of Ped activities
- Witney/20th
    - Speeding issues/shortcutting/traffic calming
- Creating outlets/options for traffic from the neighbourhood
    - Links to Circle (18th/20th)
- Noise Reduction on Circle Drive (18th & 20th)
    - Sound walls
- Playground Issues
    - Speeding isn't an issue due to proximity to schools.

<u>Mark Wilson/Justine Nyen Group</u>

- McDonalds access on W, south of 22nd Street. Creates vehicle back up when people are trying to turn in. 100 block south.
- Traffic noise from Circle Drive, due to no sound attenuation. Across from 18th and from Clancy.
- Volume and speed off of 22nd Street and onto Ave Y and X. Doing a loop around to get to bar and Sarcan and 21st St.
- Need for a sidewalk on 21st Street, near park\Stop signs or 21st Street on Ave X possibly 4 way stop)
- Rear lane, shortcutting, speeding, block driveway specifically rear lane off of 22nd Street, between Ave X & Y. Maybe a need to close the rear lane.
- North on W toward 22nd St is a <u>great</u> system. But, walk light going south is too short.
- Review of signal timing between 4 and 6 pm at Witney and 22nd and at 22nd Street and Ave W.
- Transit route on Witney, can it be on W instead?
- Difficulty turning left on 22nd Street and Ave W, right of way arrows more frequently between 4 & 6 pm, should have left turn or left lane turn only.
- Rear lane assessment, backs onto 22nd Street, west of Witney.
- Concern with parked cars blocking driveways. Need for "no parking between signs" signs.
- Witney and 20th Street. No following stop signs on Witney and speeding on 20th (both directions) Solution: Four way stop, round-about, more studies here.
- Alternate sign at 19th and Witney or something to decrease speeds.
- Snow is being piled on the parking lane on 20th Street
- 18th and W. Something to improve the crossing.
- Need for bus shelter on Ave W and 18th Street
- Railway track, need for sound attenuation 18th to 22nd.

- On 22nd pedestrian crossing, dips, middle of the medians. Not safe to cross the street.
- Crosswalk lights on 22nd Street takes too long to engage.

4. Next Steps
Angela Gardiner, Director, Transportation Division

a. Continue monitoring traffic issues in your neighbourhood
b. Mail-in comments no later than February 14/15
c. Additional public input via City on-line Community Engagement webpage no later than February 14/15

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

d. Traffic count data collection - spring 2015
e. City review of public input and data collected from traffic studies and prepare draft Traffic Plan
   - Follow-up public input meeting to provide input on draft
   - Determine revisions and finalize Traffic Plan
   - Present Traffic Plan to City Council for approval

Angela stated once all information is collected a neighbourhood wide plan will be drafted. Unfortunately not able to do everything that is suggested as there needs to be balance for the overall neighbourhood.

The proposed plan will then be brought back to groups and usually there are only a few minor tweaks that need to be done prior to bringing to City Council.

Important to note, depending on the nature of the modification things will not happen overnight. Temporary measures are usually put into place and monitored for about a year to ensure change does not affect another part of the neighbourhood in a negative manner. Once decided should be permanent then it will be added to the budgets for completion.

Thanks for everyone's input tonight. This is the beginning point of the process and we are moving towards a traffic-safe neighbourhood.

Comments:

- The issue at intersection of Witney Ave and 22nd Street has been going on for quite awhile and don't know if it can wait for another year before something is done.

Angela noted there may be some "low hanging fruit" that can be dealt with some quick fixes. If it is a matter of signal timing can be done quicker, but may take longer if more significant changes are required.

- Challenges in dealing with railways are noted.

Angela noted the City is very encouraged they have the ear of both CN and CP Rails and they have committed to working with us. The City has been collecting data since August 2013, documenting delays, time of delays, etc. Other municipalities have done this with positive outcomes. Also able to lobby for funding from provincial government to help with solutions.

8. Closing

Mitch thanked everyone for coming out to the meeting. A meeting will be held in fall of 2015 for residents to review the proposed draft Traffic Plan, so watch for flyers.

Mark also thanked everyone for attending. He noted it has been a struggle to get people out to the other LAP meetings and really hoped some of tonight residents would continue coming to future LAP meetings.

Next Meeting: Wednesday, February 25, 2015, W.P. Bate School

Meeting adjourned at 8:45 pm.

Meadowgreen LAP Meeting #12
Neighbourhood Traffic Review Meeting
W. P. Bate School Community Room
2515 18th St West
September 15, 2015
7:00 pm

Attendance: 23

Mark Emmons - Senior Planner, Ellen Pearson - Planner, Justine Nyen & Goran Lazic - Traffic Engineers, Jay Magus - Engineering Manager , Constables S. Talic & R. Kuny - Saskatoon Police Services, Councillor Pat Lorje, Shirlene Palmer – Recording Secretary

1. Welcome, Introductions & Agenda

Meeting called to order at 7:00 p.m.

Mitch Riabko & Kathy Dahl from Great Works Consulting will facilitate tonight's meeting.

Mitch Riabko Opening Comments

As part of developing the LAP for Meadowgreen neighbourhood, there were a variety of traffic issues to resolve. The first meeting was held last January and attendees were asked to provide feedback on traffic issues and more importantly, identify solutions.

Feedback collect from the meeting, observations over the last few months, as well as information collected via email, phone calls and on-line were analyzed and considered by City staff when creating this proposed Traffic Plan.

Tonight a presentation will be given to attendees to see the proposed Traffic Plan and to give your feedback. The goal of this meeting is to hear what residents have to say.

At the January meeting it was brought up that traffic is not the only issue in the neighbourhood but also there was a lot of traffic violation that added to the problems. Constables S. Talic and R. Kuny are with us tonight to help answer any questions that might arise.

The purpose of tonight's meeting:

1. To present the new neighbourhood traffic plan based on input received from the community; provide reasoning for decisions. and
2. Gain focused feedback from the community about each plan proposal.

To ensure you are successful the attendees are encouraged to follow some simple Foundations for Success

Mark Emmons introduced himself as the lead planner of the Meadowgreen Local Area Plan and thanked everyone for coming out to tonight's meeting. Through the LAP process, we are looking for local improvements for your neighbourhood. The LAPC has already had meetings on Land Use, Parks, Community Gardens & Open Spaces, Culture, Heritage & New Canadians, Neighbourhood Safety, Municipal Services and the first Traffic meeting. Upcoming meetings will be Property Maintenance, Vacant Lots, Brownfields, Housing Incentive Programs and Neighbourhood Safety.

If you have not been to an LAP meeting prior to today give your email to Shirlene to be added to the email distribution list in order to be kept informed about the LAP.

2. Foundations for Success

Foundations for Successful Meetings specify how the meeting will be conducted. They are used to ensure that we feel comfortable sharing their concerns, opinions and ideas with the group here tonight.

The Foundations for Success are:

1. **Information Sharing & Gathering**
   - Share what you think is important
   - Everyone works together to make decisions
2. **Respect**
   - Respect every comment or idea that comes forward
   - Respect each other's opinions and perceptions
3. **Integrity**
   - Speak your mind respectfully
   - Honesty is the best policy!
   - Your voice is not heard if you don't participate
4. **Fair and Equal Representation**
   - Everyone will have their opportunity to share
   - Everyone has something important to contribute
   - Strive for equal representation from all stakeholders within the area
5. **No Repetitive Discussion**
   - There is limited time within meetings, discussion of topics already covered may have to occur outside scheduled meeting time
6. **Orderly Participation**
   - Listen when others are speaking
   - Please raise hand to share your thoughts

Councillor Pat Lorje Comments

Slowly but surely the City of Saskatoon is undergoing a new process for planning ahead and growth. She is seeing signs that services are better spread throughout the city but still a long way to go. The landscaping on the west side of the Circle Drive South Bridge did not come as it should have and this will be corrected next year.

There have been concerns brought to her about the noise and fumes from the trains and she is meeting with CN at the end of September to discuss this matter. There is also a lot of concern from Montgomery as they are trapped when trains run through. She hopes there can be at least a short term solution until a long term solution can be found. In closing, if anyone has any concerns they can call or email her.

3.a. Traffic Management Presentation
Justine Nyen, Traffic Engineer

Neighbourhood Traffic Management Program

- Address neighbourhood traffic issues:
  - Speeding concerns
  - Shortcutting 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

- January 2015 - Initial Traffic Meeting
- January to September 2015 - gather feedback, conduct traffic studies, collect data, develop traffic plan
- September 2015 - Follow Up Traffic Meeting - display proposed traffic plan and gather feedback.

What We Heard

1. Speeding/Shortcutting
   - Montreal Avenue
   - 18th Street
   - 21st Street (near park)
   - Avenue X (between 20th St & 22nd St)
   - Avenue Y (between 20th St & 22nd St)
   - Back lane west of Witney Ave (south 22nd St)

2. Pedestrian Safety
   - 18th Street & Avenue W
   - Crossing 20th Street

3. Intersection Safety
    - 22nd Street & Witney Avenue
    - 22nd St & Avenue W

4. Parking
    - Avenue X (near Sarcan)

5. Other Issues
    - Other links in/out of Meadowgreen
    - Snow removal
    - Trees blocking signs
    - Noise reduction
    - Bus routes/shelters

What We Did

- Collected data
    - Past study
    - 25 attendees at initial meeting
    - Resident responses - phone calls, emails, letters (8)
    - Recorded comments from Shaping Saskatoon discussions
    - Intersection/pedestrian counts (5)
    - 7 day, 24 hour, traffic count (10) & Average Speed measurements
    - Back lane traffic volume count (1)
    - Collision history
- Field Reviews
- Assessed the issues
- Generated proposed recommendations

What we Propose

See Appendix A for list of proposed recommendations.

3.b. Traffic Operation
Goran Lazic, Traffic Engineer

It can be difficult to make changes to arterial roads at a neighbourhood level as they usually affect more than one neighbourhood and corridor so need to be careful when requesting changes. Information gather from Shaping Saskatoon helps us to look at these issues on a larger scale.

A concern heard in the neighbourhood was the back up of traffic at Witney and 22nd Street. Issue is turning left onto Witney from 22nd Street as traffic being held up by people turning into gas station at corner as well as turning left onto 22nd Street from Witney due to increase traffic coming from Shoppers. Also length of pedestrian walk light not long enough for slower crossers.

Goran noted the issue is most older intersections are not made for the traffic volumes using them. It can be challenging to change access to businesses due to the geometry

of their lots/entrances. He noted making major changes to intersection configuration can be very costly, require lots of planning and still may not be possible.

Some changes that could be looked at are lane labeling to ensure proper use of lanes, stating one is left turn lane and other is straight and right turn. This may alleviate some of the traffic moving south and north from Witney to 22nd Street. The timing of the pedestrian walk lights could be increase to accommodate slower crossers.

These changes could also be done at Avenue W & 22nd Street.

In summary, we can make small improvements to alleviate some of the concerns but any more drastic changes will need to wait to see what larger plans are in store in the future plan of 22nd Street overall.

Comments:

- The north/south traffic movement light seems to take a long to time to change to green.

Goran noted there is a traffic loop overhead that signals when there is a vehicle there. It may not be working properly they can take a look at this.

4. Small Groups:

The attendees were broken into 3 groups and asked to review the recommendations and make supply comments to facilitators.

See Appendix B for results of small group discussions.

5. Next Steps
Jay Magus, Engineering Manager
Transportation & Utilities Division

1. Mail-in or email comments no later than October 15/15
2. Additional public input via Shaping Saskatoon no later than October 15/15

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

3. Additional consultation if required
4. Present traffic plan to City Council for approval
5. Once approved then will become part of neighbourhood LAP document for implementation.

Jay noted there is a meeting scheduled on Tuesday, October 27, 7:00 pm at St. John School to address the comprehensive plan for 11th Street from Circle Drive to Avenue H. This meeting is identical to the one held earlier this year so there is no need to attend if you attended the previous one.

8. Question & Answer

Questions:

- **What happened to the plan to connect 17th Street to Circle Drive?**

  Jay noted this is back on the table again so will be discussed.

- **What is happening with Active Transportation in the area as the above connection was taking it into consideration, a safe path right to the river.**

  Jay noted the City is currently working on an overall bike/pedestrian trail system. There will be some public events this fall.

- **With the Growth Plan of 500,000 maybe we need more bridges?**

  There are Growth Plan/Come & Go Public Events planned that would give a better answer to this question.
  - Wednesday, October 21, 4:30 - 8:30 pm, Mayfair United Church
  - Thursday, October 22, 4:30 - 8:30 pm, Saskatoon Field House, Lobby

- **There is a lot of speeding on Avenue W between 11th and 22nd Street. Can something be done to slow the traffic down?**

  Justine stated Avenue W is an arterial road so traffic calming is not recommended. Enforcement would be the best for this area; she will pass along this information to Saskatoon Police Services and they can do a speed study.

- **Can the stop signs at 11th Street and Fletcher Avenue be removed? They were originally only to be temporary while South Bridge was built; now they are affecting traffic in the area in a negative way when people are trying to turn east from Avenue W to 11th Street.**

  Justine will pass along to be looked into.

9. Closing

Mitch thanked everyone for coming out to the meeting.

Mark also thanked everyone for attending. He passed along the message from Pat Tymchatyn that the Meadowgreen Community Association AGM is scheduled for October 6, 7:00 pm, W.P. Bate School, Community Room.

Next Meeting: **Wednesday, October 28, 2015, W.P. Bate School**
Wednesday, November 4, 2015, W.P. Bate School

Meeting adjourned at 9:00 pm.

Appendix A - Meadowgreen Draft Traffic Recommendations - Sept 15/2015

Item	Location	Recommendation	Reason
1	Witney Ave & 19th St	Change east-west yield to north-south stop	Improve safety at intersection & discourage speeding on Witney Avenue
2	Witney Ave & 20th St	4-way stop	Improve driver & pedestrian safety (visibility concerns due to parked cars & high collisions)
3	Avenue W & 18th St	Install active pedestrian corridor	Improve pedestrian safety
4	18th St & Ave Y	Install curb extension (southeast corner) & median island (east side)	Improve pedestrian safety & reduce speed near elementary school
5	21st St between Witney Ave & Ave W	Install sidewalk on south side	Improve pedestrian safety near park
6	Ave X between 2nd driveway south of 22nd St to 125 Ave X	Install parking restrictions on west side	Improve visibility for driveways
7	21st St & Ave W	Add hazard boards to stop signs & enhance pedestrian signs	Improve visibility at intersection (including enhance visibility of stop signs), enhance driver compliance & improve pedestrian safety
8	21st St & Ave Y	Change yield signs to stop signs	Enhance driver compliance
9	Back lane south of 22nd St - access from Witney Ave	Install 20kph speed sign	Reduce speed
10	Witney Ave & 21st St	Install curb extensions (south side) & standard pedestrian crosswalk	Reduce speed, discourage shortcutting on Witney Ave & improve pedestrian safety

Major intersections
22nd St & Ave W
22nd St & Witney Ave

Other departments
Request bus shelter on Ave W north of 18th St

Appendix B – Meadowgreen Traffic Recommendations Sept 15/2015

Item	Location	Recommendation	Reason	Group 1 - Ellen Pearson	Group 2 - Mark Emmons	Group 3 - Jay Magus
1	Witney Ave & 19th St	Change east-west yield to north-south stop	Improve safety at intersection & discourage speeding on Witney Avenue	Yes	Should measure 19th St because of multi-block free-flow. Could be new issue.	
2	Witney Ave & 20th St	4-way stop	Improve driver & pedestrian safety (visibility concerns due to parked cars & high collisions)	are the curbs coloured to prevent parking close?	Yes	
3	Avenue W & 18th St	Install active pedestrian corridor	Improve pedestrian safety	Yes	Yes	
4	18th St & Ave Y	Install curb extension (southeast corner) & median island (east side)	Improve pedestrian safety & reduce speed near elementary school	how do curb extensions effect cyclists turning radii? Median islands are good.	Indifferent. Uncertain that it's needed. Could effect on-street parking negatively.	
5	21st St between Witney Ave & Ave W	Install sidewalk on south side	Improve pedestrian safety near park	Also install sidewalk on north side of 20th/Montreal	Who'll maintain it? City doesn't clear snow from sidewalk. Putting it on the north side may be better.	
6	Ave X between 2nd driveway (behind 'Touch of Ukraine') south of 22nd St to 125 Ave X	Install parking restrictions on west side	Improve visibility for driveways (Bylaw 7200 states that motorists cannot park within 1m of a driveway due to safety reasons/visibility. Beginning at the driveway behind 'Touch of Ukraine' to 125 Avenue X South, motorists do not have adequate space to legally park because they're encroaching 1m from a driveway.)	Yes	Good plan. Sarcan needs to do better job of maintaining their site. Maybe they could do angle parking on their site. Major traffic generator and not enough on-site parking.	
7	21st St & Ave W	Add hazard boards to stop signs & enhance pedestrian signs	Enhance visibility of stop signs & driver compliance; improve pedestrian safety	Yes	Better than nothing. Would prefer active crossing.	
8	21st St & Ave Y	Change yield signs to stop signs	Enhance driver compliance	Yes	Not against it but not sure if it will have any effect.	
9	Back lane south of 22nd St - access from Witney Ave	Install 20kph speed sign	Reduce speed; enhance compliance of speed limit in back lane	Prostitution in back alley, needles - install "Local Traffic Only"	May already have 15kph signs posted here.	
10	Witney Ave & 21st St	Install curb extensions (south side) & standard pedestrian crosswalk	Reduce speed, discourage shortcutting on Witney Ave & improve pedestrian safety	maintain bushes to increase visibility	Doesn't seem needed. May effect buses negatively.	Trim hedges on southeast corner

Other departments

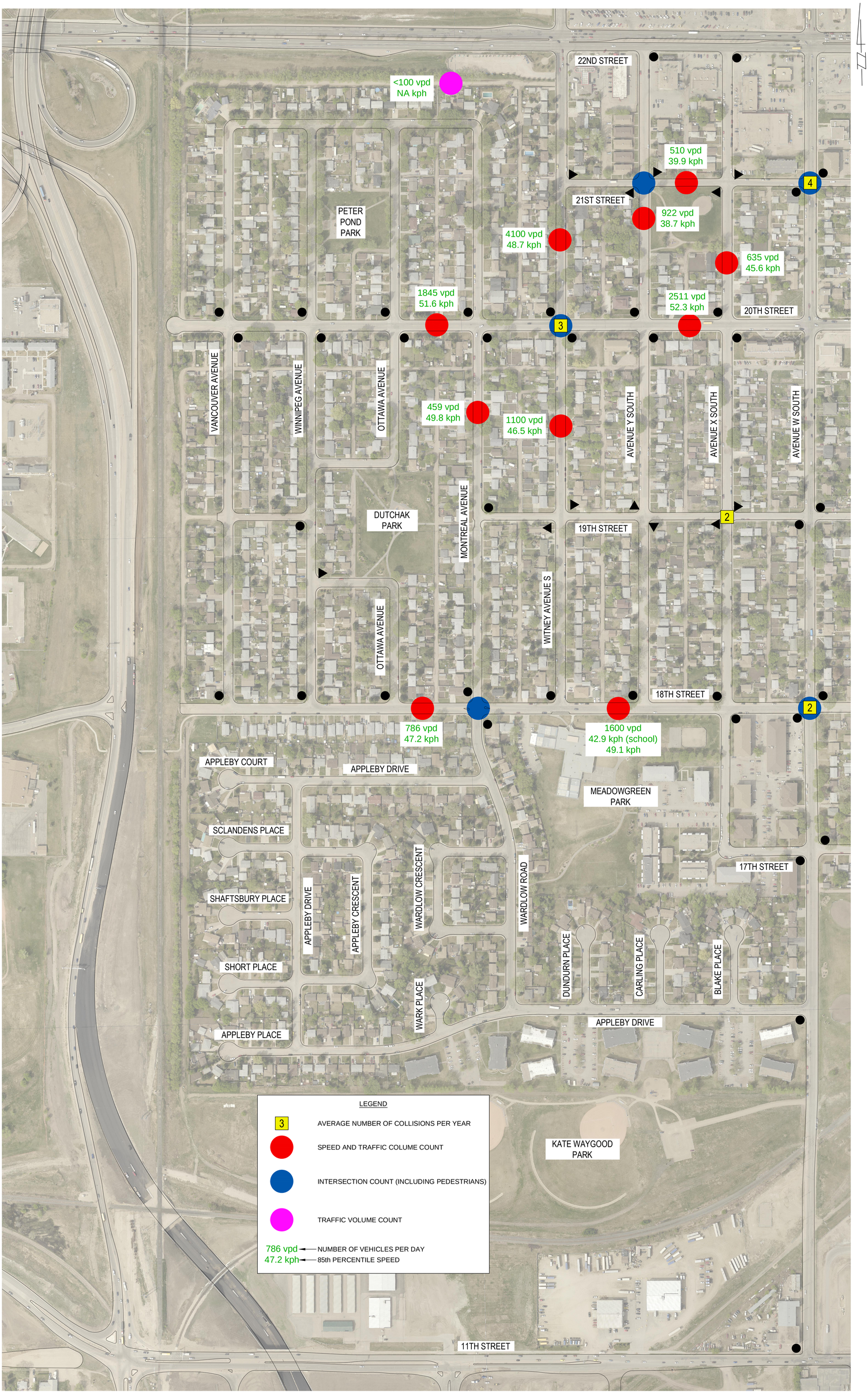
Request bus shelter on Ave W north of 18th St

	Location	Concern
1	Various	tree maintenance to prevent visibility issues, pedestrian enforcement, cycling enforcement/training
2	22nd St & Witney Ave	possible to use jersey barriers; loop detection is broken
3	Witney Ave between 20th-22nd	lane painting
4	18th St across from school (north side)	sidewalk needed
5	Ave W & 22nd St (facing northbound)	needs signs identifying lanes
6	Ave W	speeding
7	21st St & Ave X	trim tree on northwest corner
8	Wardlow Cres & Wardlow Rd	trim evergreen on northwest corner
9	Back lanes	speed limit signs
10	22nd St & Ave W	make inside lane left turn & outside lane Thru/Right Turn

APPENDIX B: TRAFFIC DATA COLLECTION

MEADOWGREEN TRAFFIC DATA

City of Saskatoon



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
18th Street & Ave W	18% (no)	no	Conditions NOT met.
Ave W & 21st St	16% (no)	yes	
21st St & Ave Y	30% (no)	no	
20th St & Witney Ave	46% (yes)	no	Conditions met. Proceed to Step 2.

Step 2:

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	Condition 1: 5 or more collisions in most recent 12 months	Condition 2: total number of vehicles entering the intersection from all approaches averages at least 600 per hour for the peak hour	Condition 3: total intersection entering volume exceeds 6,000 vehicles per day	Results
20th St & Witney Ave	4 - Condition NOT met	488 - Condition NOT met	5,600 - Condition NOT met	Further consideration due to high collisions.

APPENDIX D: PEDESTRIAN DEVICE ASSESSMENTS

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

Witney Avenue & 20th Street:

1. Lanes Priority Points:

L = 2 lanes = number of lanes.

LANF = 0.0 points = (L-2) x 3.6 to a max of 15 points, urban x-section only.

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 = 340 m = distance from study location to nearest protected crosswalk.

LOCF = 10.5 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 = 33.0 = total number of children, teenagers, seniors and/or impaired counted.

Pa = 0.0 = total number of adults counted.

Pw = 49.5 = weighted average of pedestrians crossing the main street.

Pcm = 9.9 = weighted average hourly pedestrian volume crossing the main street.

V = 2042.0 = volume of traffic passing through the crossing(s).

Vam = 408.4 = average hourly volume of traffic passing through the crossing(s).

VOLF = 8.1 points = Vam x Pcm / 500

6. Satisfaction of Installation Criteria:

SUMF = (LANF + MEDF + SPDF + LOCF + VOLF)

SUMF = 31 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 W & 18th Street:

1. Lanes Priority Points:

L = 2 lanes = number of lanes.

LANF = 0.0 points = (L-2) x 3.6 to a max of 15 points, urban x-section only.

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 = 410 m = distance from study location to nearest protected crosswalk.

LOCF = 15.0 points = (D-200) / 13.3 to a maximum of 15 points.

Actual value = 15.78947 points.

5. Pedestrian/Vehicle Volume Priority Points:

H = 5.0 = (hours) duration of counting period.

Ps = 113.0 = total number of children, teenagers, seniors and/or impaired counted.

Pa = 60.0 = total number of adults counted.

Pw = 229.5 = weighted average of pedestrians crossing the main street.

Pcm = 45.9 = weighted average hourly pedestrian volume crossing the main street.

V = 2481.0 = volume of traffic passing through the crossing(s).

Vam = 496.2 = average hourly volume of traffic passing through the crossing(s).

VOLF = 45.6 points = Vam x Pcm / 500

6. Satisfaction of Installation Criteria:

SUMF = (LANF + MEDF + SPDF + LOCF + VOLF)

SUMF = 73 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.

18th Street & Wardlow Ave:

1. Lanes Priority Points:

L = 2 lanes = number of lanes.

LANF = 0.0 points = (L-2) x 3.6 to a max of 15 points, urban x-section only.

2. Median Priority Points:

MEDF = 3.0 points = indicating there is a 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 = 103 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 = 25.0 = total number of children, teenagers, seniors and/or impaired counted.

Pa = 0.0 = total number of adults counted.

Pw = 37.5 = weighted average of pedestrians crossing the main street.

Pcm = 7.5 = weighted average hourly pedestrian volume crossing the main street.

V = 225.0 = volume of traffic passing through the crossing(s).

Vam = 45.0 = average hourly volume of traffic passing through the crossing(s).

VOLF = 0.7 points = Vam x Pcm / 500

6. Satisfaction of Installation Criteria:

SUMF = (LANF + MEDF + SPDF + LOCF + VOLF)

SUMF = 10 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 W & 21st St:

1. Lanes Priority Points:

   L = 2 lanes = number of lanes.

   LANF = 0.0 points = (L-2) x 3.6 to a max of 15 points, urban x-section only.

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 = 170 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 = 40.0 = total number of children, teenagers, seniors and/or impaired counted.

Pa = 46.0 = total number of adults counted.

Pw = 106.0 = weighted average of pedestrians crossing the main street.

Pcm = 21.2 = weighted average hourly pedestrian volume crossing the main street.

V = 3036.0 = volume of traffic passing through the crossing(s).

Vam = 607.2 = average hourly volume of traffic passing through the crossing(s).

VOLF = 25.7 points = Vam x Pcm / 500

6. Satisfaction of Installation Criteria:

SUMF = (LANF + MEDF + SPDF + LOCF + VOLF)

SUMF = 38 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.

Pedestrian Corridor Warrant Calculation

Witney Avenue & 20th Street:

Time (15 minute intervals) of	Vehicle Counts		Pedestrian Counts				P.C. Periods	Points
	Total Both Sides		Factored Counts			Warrant	Wrnt'd	Wrnt'd
	15 min. Points	30 min. (1=Yes)	Child	Teen	Adult	Senior / Impaired	Total	15 min. 30 min.
7:00								
7:15								
7:30								
7:45								
8:00	79	79						
8:15	85	164						
8:30	132	217	1			1 1	1	217
8:45	123	255	2			2 2	3	765
9:00	44	167					2	334
9:15		44						
9:30								
9:45								
AM Totals		463		3		3		
11:30	69		1			1 1		
11:45	83	152	2			2 2	3	456
12:00	82	165	3			3 3	5	825
12:15	83	165	1			1 1	4	660
12:30	65	148	4			4 4	5	740
12:45	90	155	3			3 3	7	1,085
13:00	79	169					3	507

13:15	88	167	1		1	1	1	167
Noon Totals		639		15		15		
14:00								
14:15								
14:30								
14:45								
15:00	81	81						
15:15	116	197	4		4	4	4	788
15:30	127	243	4		4	4	8	1,944
15:45	136	263	3		3	3	7	1,841
16:00	113	249					3	747
16:15	124	237	1		1	1	1	237
16:30	109	233	3		3	3	4	932
16:45	134	243					3	729
17:00		134						
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 940 15 15

Totals 2,042 33 33

100% 100%

West Crosswalk = 13

East Crosswalk = 20 <<< install crosswalk on this side of the int.

SUMMARY

Total Warranted PC Points: or / period

Highest PC point value: 1,944 at

Average PC point value: 865

No. of periods warranted:

Avenue W & 18th Street:

Time

(15 minute intervals) Vehicle Counts Pedestrian Counts P.C. Periods Points of

Total Both Sides Factored Counts Warrant Wrnt'd Wrnt'd

15 min. 30 min. Child Teen Adult Senior / Impaired Total 15 min. 30 min. Points (1=Yes) Periods

7:00

7:15												
7:30												
7:45												
8:00	110	110			5	2	7	4.5	4.5	495		
8:15	117	227	6	2	2	2	12	10.34	14.84	3,369		
8:30	129	246	6		5	2	13	10.5	20.84	5,127	1	5,127
8:45	134	263	6		5		11	8.5	19	4,997		
9:00		134							8.5	1,139		
9:15												
9:30												
9:45												
AM Totals	5,127	490		18	2	17	6	43				
11:30	98			4	7	4	15	10.18				
11:45	121	219	4		5	2	11	8.5	18.68	4,091		
12:00	120	241	8		2		10	9	17.5	4,218		
12:15	99	219	5		1		6	5.5	14.5	3,176		
12:30	117	216	4				4	4	9.5	2,052		
12:45	95	212	8	1			9	8.67	12.67	2,686		
13:00	109	204	1	2	3		6	3.84	12.51	2,552		
13:15	94	203		1			1	0.67	4.51	916		
Noon Totals		853		30	8	18	6	62				
14:00												
14:15												
14:30												
14:45												
15:00	131	131	3				3	3	3	393		
15:15	125	256	4		2	2	8	7	10	2,560		

15:30	171	296	10	4	3	2	19	16.18	23.18	6,861	1	6,861
15:45	151	322	3		5	1	9	6.5	22.68	7,303	1	7,303
16:00	138	289			4		4	2	8.5	2,457		
16:15	143	281	5				5	5	7	1,967		
16:30	140	283	4		1		5	4.5	9.5	2,689		
16:45	139	279	2		10	3	15	10	14.5	4,046		
17:00		139							10	1,390		
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	14,164	1,138		31	4	25	8	68				
Totals	2,481		79	14	60	20	173					
			46%	8%	35%	12%	100%					
					North Crosswalk =				60			

South Crosswalk = 113 <<< install crosswalk on this side of the int.

SUMMARY

Total Warranted PC Points: 19,291 or 6,430 / period

Highest PC point value: 7,303 at

Average PC point value: 4,299

No. of periods warranted: 3

Wardlow Ave & 18th St:

Time (15 minute intervals)	Vehicle Counts		Pedestrian Counts				P.C.	Periods	Points of
	Total Both Sides		Factored Counts				Warrant	Wrnt'd	Wrnt'd
	15 min.	30 min.	Child	Teen	Adult	Senior / Impaired	Total	15 min.	30 min.
	Points	(1=Yes)	Periods						
7:00									
7:15									
7:30									
7:45									
8:00	12	12							
8:15	17	29	1		1	1	1	29	
8:30	9	26	1		1	1	2	52	
8:45	22	31					1	31	
9:00		22							

9:15								
9:30								
9:45								
AM Totals		60		2		2		
11:30	8		2		2	2		
11:45	5	13	1		1	1	3	39
12:00	14	19					1	19
12:15	11	25	1		1	1	1	25
12:30	8	19	1		1	1	2	38
12:45	4	12					1	12
13:00	7	11						
13:15	6	13						
Noon Totals		63		5		5		
14:00								
14:15								
14:30								
14:45								
15:00	13	13						
15:15	10	23	4		4	4	4	92
15:30	10	20	8		8	8	12	240
15:45	15	25	4		4	4	12	300
16:00	7	22	1		1	1	5	110
16:15	16	23	1		1	1	2	46
16:30	15	31					1	31
16:45	16	31						
17:00		16						
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 102 18 18

Totals 225 25 25

100% 100%

West Crosswalk = 16 <<< install crosswalk on this side of the int.

East Crosswalk = 9

SUMMARY

Total Warranted PC Points: or / period

Highest PC point value: 300 at

Average PC point value: 71

No. of periods warranted:

Avenue W & 21st St:

Time (15 minute intervals)	Vehicle Counts		Pedestrian Counts					P.C.	Periods	Points
	Total Both Sides		Factored Counts			Warrant		Wrnt'd	Wrnt'd	
	15 min. Points	30 min. (1=Yes)	Child	Teen	Adult	Senior / Impaired	Total	15 min.		30 min.
7:00										
7:15										
7:30										
7:45										
8:00	105	105			1	1	0.5	0.5	53	
8:15	103	208	1		3	4	2.5	3	624	
8:30	135	238		1	1	2	1.17	3.67	873	
8:45	150	285	2		2	4	3	4.17	1,188	
9:00		150						3	450	
9:15										
9:30										
9:45										
AM Totals		493		3	1	7	11			
11:30	106			1	1	2	1.17			
11:45	127	233			2	2	1	2.17	506	
12:00	126	253	2		1	3	2.5	3.5	886	
12:15	139	265	1		3	4	2.5	5	1,325	
12:30	116	255	1		3	4	2.5	5	1,275	

12:45	128	244	1		3		4	2.5	5	1,220		
13:00	141	269							2.5	673		
13:15	125	266	2				2	2	2	532		
Noon Totals		1,008		7	1	13		21				
14:00												
14:15												
14:30												
14:45												
15:00	155	155	5	1	3		9	7.17	7.17	1,111		
15:15	168	323			1		1	0.5	7.67	2,477		
15:30	209	377	3	1	2		6	4.67	5.17	1,949		
15:45	182	391	1		6		7	4	8.67	3,390		
16:00	212	394			6		6	3	7	2,758		
16:15	197	409			2		2	1	4	1,636		
16:30	225	422	4	1	4		9	6.67	7.67	3,237		
16:45	187	412	10	2	2		14	12.34	19.01	7,832	1	7,832
17:00		187							12.34	2,308		
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	1,535		23	5	26		54	
	7,832							
Totals	3,036		33	7	46		86	
			38%	8%	53%		100%	

North Crosswalk = 66 <<< install crosswalk on this side of the int.

South Crosswalk = 20

SUMMARY

Total Warranted PC Points: 7,832 or 7,832 / period

Highest PC point value: 7,832 at

Average PC point value: 2,420

No. of periods warranted: 1

APPENDIX E: COLLISION ANALYSIS

Collision Analysis

Collision data provided by SGI (2009 to 2013)

Street 1	Street 2	Ugrid	All Collisions	All collisions - 2013	RA, LT, RT	RA, LT, RT - 2013 only	Collector or Arterial	Ave
21st St	Avenue W	D8-53	20	5	10	5	yes	4
20th St	Witney Avenue	C8-8	17	3	11	2	yes	3
18th St	Avenue W	D9-29	12	2	5	1	yes	2
19th St	Avenue X	C8-1	11	2	8	2	no	2
19th St	Avenue W	D8-36	11	2	7	1	yes	2
21st St	Avenue Y	C8-5	6	1	5	1	no	1
20th St	Avenue Y	C8-3	4	1	2	1	yes	1
Appleby Dr	Wardlow Rd	C9-32	4	1	1	1	no	1
21st St	Avenue X	C8-45	3	0	3	0	no	1
20th St	Montreal Avenue	C8-25	3	0	2	0	yes	1
20th St	Avenue X	C8-2	3	0	0	0	no	1
20th St	Ottawa Avenue	C8-20	3	1	0	0	no	1
19th St	Witney Avenue	C8-66	2	0	2	0	no	0
19th St	Avenue Y	C8-29	2	1	1	0	no	0
18th St	Avenue X	C9-19	2	0	1	0	yes	0
18th St	Montreal Avenue	C9-20	2	0	1	0	yes	0
18th St	Witney Avenue	C9-2	2	0	0	0	no	0
Appleby Dr	Wardlow Rd	C9-37	1	0	1	0	no	0
21st St	Witney Avenue	C8-10	1	1	0	0	no	0
Montreal Avenue	Winnipeg Avenue	C8-70	1	1	0	0	no	0
19th St	Vancouver Avenue	C8-72	1	0	0	0	no	0
18th St	Ottawa Avenue	C9-10	1	0	0	0	no	0
18th St	Winnipeg Avenue	C9-38	1	0	0	0	no	0
Appleby Dr	Dundurn Pl	C9-28	1	0	0	0	no	0
Appleby Dr	Blake Pl	C9-25	1	0	0	0	no	0

20th St	Winnipeg Avenue	C8-11	0	0	0	0	no	0
20th St	Vancouver Avenue	C8-12	0	0	0	0	no	0
Vancouver Avenue	Ottawa Avenue	NA	0	0	0	0	no	0
19th St	Montreal Avenue	C8-79	0	0	0	0	no	0
19th St	Winnipeg Avenue	C8-91	0	0	0	0	no	0
18th St	Avenue Y	C9-48	0	0	0	0	no	0
18th St	Vancouver Avenue	C9-84	0	0	0	0	no	0
Ottawa Avenue	Winnipeg Avenue	NA	0	0	0	0	no	0
Ottawa Avenue	Winnipeg Avenue	NA	0	0	0	0	no	0
Appleby Dr	Wardlow Cres (north leg)	NA	0	0	0	0	no	0
Appleby Dr	Wardlow Rd (south leg)	NA	0	0	0	0	no	0
Appleby Dr	Appleby Crt	C9-41	0	0	0	0	no	0
Appleby Dr	Sclandens Pl	C9-57	0	0	0	0	no	0
Appleby Dr	Shaftsbury Pl	NA	0	0	0	0	no	0
Appleby Dr	Short Pl	NA	0	0	0	0	no	0
Appleby Dr	Appleby Dr	C9-42	0	0	0	0	no	0
Appleby Dr	Wark Pl	C9-59	0	0	0	0	no	0
Appleby Dr	Carling Pl	C9-55	0	0	0	0	no	0

APPENDIX F: DECISION MATRIX

Decision Matrix - Recommendations proposed at the September 15, 2015 meeting

Item	Location	Recommendation	Reason	Group 1 - Ellen Pearson	Group 2 - Mark Emmons	Group 3 - Jay Magus	Decision
1	Witney Ave & 19th St	Change east-west yield to north-south stop	Improve safety at intersection & discourage speeding on Witney Avenue		Should measure 19th St because of multi-block free-flow. Could be new issue.		Carried. Continue to monitor traffic patterns after installation.
2	Witney Ave & 20th St	4-way stop	Improve driver & pedestrian safety (visibility concerns due to parked cars & high collisions)	are the curbs coloured to prevent parking close?			Carried.
3	Avenue W & 18th St	Install active pedestrian corridor	Improve pedestrian safety				Carried.
4	18th St & Ave Y	Install curb extension (southeast corner) & median island (east side)	Improve pedestrian safety & reduce speed near elementary school	how do curb extensions effect cyclists turning radii? Median islands are good.	Indifferent. Uncertain that it's needed. Could effect on-street parking negatively.		Carried.
5	21st St between Witney Ave & Ave W	Install sidewalk on south side	Improve pedestrian safety near park	Also install sidewalk on north side of 20th/Montreal	Who'll maintain it? City doesn't clear snow from sidewalk. Putting it on the north side may be better.		Changed to sidewalk installation on north side.
6	Ave X between 2nd driveway (behind 'Touch of Ukraine') south of 22nd St to 125 Ave X	Install parking restrictions on west side	Improve visibility for driveways (Bylaw 7200 states that motorists cannot park within 1m of a driveway due to safety reasons/visibility. Beginning at the driveway behind 'Touch of Ukraine' to 125 Avenue X South, motorists do not have adequate space to legally park because they're encroaching 1m from a driveway.)		Good plan. Sarcan needs to do better job of maintaining their site. Maybe they could do angle parking on their site. Major traffic generator and not enough on-site parking.		Carried.
7	21st St & Ave W	Add hazard boards to stop signs & enhance pedestrian signs	Enhance visibility of stop signs & driver compliance; improve pedestrian safety		Better than nothing. Would prefer active crossing.		Carried.
8	21st St & Ave Y	Change yield signs to stop signs	Enhance driver compliance		Not against it but not sure if it will have any effect.		Carried.
9	Back lane south of 22nd St - access from Witney Ave	Install 20kph speed sign	Reduce speed; enhance compliance of speed limit in back lane	Prostitution in back alley, needles - install "Local Traffic Only"	May already have 15kph signs posted here.		Removed. 20kph sign is already installed.
10	Witney Ave & 21st St	Install curb extensions (south side) & standard pedestrian crosswalk	Reduce speed, discourage shortcutting on Witney Ave & improve pedestrian safety	maintain bushes to increase visibility	Doesn't seem needed. May effect buses negatively.	Trim hedges on southeast corner	Remove standard crosswalk from recommendation. No sidewalk connections. May consider crosswalk once sidewalk is installed. Install curb extension on north east corner to address speeding/shortcutting concerns. Forward request for tree trimming to Parks.
11	Ave W - north of 18th St	Forward information to Transit for further consideration - install bus shelter on east side	Many transit users				Carried.

Decision Matrix - Additional Issues raised at the September 15, 2015 meeting

Item	Location	Concern	Decision
1	Various	tree maintenance to prevent visibility issues, pedestrian enforcement, cycling enforcement/training	Noted.
2	22nd St & Witney Ave	possible to use jersey barriers; loop detection is broken	Documented for further consideration as part of the Major Intersection Reviews
3	Witney Ave between 20th-22nd	lane painting	Not recommended because Witney Avenue is a local roadway.
4	18th St between Ave W to Vancouver Ave	sidewalk needed	Added to recommendations. Priority 1- in front of school between Ave X and Montreal Ave; Priority 2 - Ave X to Ave W and Montreal Ave to Vancouver Ave
5	22nd St & Ave W (facing northbound)	needs signs identifying lanes; make inside lane left turn & outside lane Thru/Right Turn	Documented for further consideration as part of the Major Intersection Reviews
6	Ave W	speeding	Traffic calming devices not recommended on arterials. No further recommendations.
7	21st St & Ave X	trim tree on northwest corner	Site check determined trimming not needed.
8	Wardlow Cres & Wardlow Rd	trim evergreen on northwest corner	Site check determined trimming not needed.
9	Back lanes	speed limit signs	Need specific locations.

Decision Matrix – Additional comments

Item	Location	Concern	Decision
1	Various	tree maintenance to prevent visibility issues, pedestrian enforcement, cycling enforcement/training	Noted.
2	22nd St & Witney Ave	possible to use jersey barriers; loop detection is broken	Documented for further consideration as part of the Major Intersection Reviews
3	Witney Ave between 20th-22nd	lane painting	Not recommended because Witney Avenue is a local roadway.
4	18th St between Ave W to Vancouver Ave	sidewalk needed	Added to recommendations. Priority 1- in front of school between Ave X and Montreal Ave; Priority 2 - Ave X to Ave W and Montreal Ave to Vancouver Ave
5	22nd St & Ave W (facing northbound)	needs signs identifying lanes; make inside lane left turn & outside lane Thru/Right Turn	Documented for further consideration as part of the Major Intersection Reviews
6	Ave W	speeding	Traffic calming devices not recommended on arterials. No further recommendations.
7	21st St & Ave X	trim tree on northwest corner	Site check determined trimming not needed.
8	Wardlow Cres & Wardlow Rd	trim evergreen on northwest corner	Site check determined trimming not needed.
9	Back lanes	speed limit signs	Need specific locations.