2015 IMPLEMENTATION PLAN

Risk Level D = Higher Risk Risk Level C = Moderate Risk Risk Level B = Lower Risk Risk Level A = Minimal Risk

Corridor = St. Albert Trail

Risk Level	Issue ID	Location	Action	Area
D	S29-A	Boudreau Rd @ Hospital Crossing	Removed crosswalk	Completed prior
C	I06-C	SAT @ Sturgeon / St Anne	Remove permissive sign and leave only NO PEDESTRIAN sign. Also, consider allowing pedestrian crossings on all four sides of intersection	Signs
C	I12-D	SAT nbound approaching Boudreau	Install LANE ENDS sign	Signs
C	I09-B	SAT @ St Vital Ave	Adjust signal split by providing a short walk interval and a longer clearance interval	Signals
C	I09-C	SAT @ St Vital Ave	Adjust signal timing to accommodate pedestrians of all ages	Signals
C	I11-B	SAT @ Inglewood Dr	Adjust signal timing to accommodate pedestrians of all ages	Signals
C	Corridor	SAT @ McKenney	Installation of zebra bar style line markings in turn bays (4.0m x 0.6m zebra bar at 3 per turn bay	Road Markings
C	Corridor	SAT @ McKenney	Installation of 20cm pedestrian parallel crossing lines at signalized crossing locations	Road Markings
C	Corridor	SAT @ Lennox	Installation of 20cm pedestrian parallel crossing lines at signalized crossing locations	Road Markings
C	I02-A	SAT @ Gate	Clear foliage	Tree Maintenance
C	S10-A	West side of SAT from McKenney to Lennox	Sidewalks should be continuous; extend sidewalk	Infrastructure
C	S11-A	West side of sAT from Giroux to Lennox	Sidewalks should be continuous; extend sidewalk	Infrastructure
C	Corridor	SAT @ Lennox	Installation of zebra bar style line markings in turn bays (4.0m x 0.6m zebra bar at 3 per turn bay) with increased traction material	Road Markings
C	Corridor	SAT @ McKenney	Installation of zebra bar style line markings in turn bays (4.0m x 0.6m zebra bar at 3 per turn bay	Road Markings
B	I01-C	SAT @ Hebert	Adjust signal timing to accommodate pedestrians of all ages. Use walking speed of 1.0 m/s if possible	Signals
B	I01-D	SAT @ Hebert	Adjust signal split by providing a short walk interval and a longer clearance interval	Signals
B	I02-E	SAT @ Gate	Adjust signal timing to accommodate pedestrians of all ages. Use 1.0 m/s if possible	Signals
B	I06-E	SAT @ St Anne	Adjust signal split by providing a short walk interval and a longer clearance interval	Signals
B	I06-F	SAT @ St Anne	Adjust signal timing to accommodate pedestrians of all ages. Use walking speed of 1.0 m/s if possible	Signals
B	I11-A	SAT @ Lennox	Adjust signal split by providing a short walk interval and a longer clearance interval	Signals
B	I12-A	SAT @ Boudreau	Adjust signal split by providing a short walk interval and a longer clearance interval;	Signals
B	I12-B	SAT @ Boudreau	Adjust signal timing to accommodate pedestrians of all ages. Use walking speed of 1.0 m/s if possible	Signals
B	I13-E	SAT @ Villeneuve	Re-configure signal timing	Signals

B	I02-B	SAT @ Gate SW corner	Install curb ramps	Infrastructure
A	I01-F	NE corner of SAT @ Hebert - PetroCan	Install either a 'Turn Right' (RB-14R) sign or a 'Left Turn Prohibited' (RB-11L) sign to direct drivers	Signs
A	I12-E	Southbound SAT approaching Giroux	Move sign further north, ahead of right turn channel - Place new warning sign for lane having to turn - applicable to both north and southbound on SAT approaching Boudreau	Signs
A	S11-B		Install stop sign to replace yield signs from businesses	Signs
A	I13-J	Ebound Villeneuve RT at SAT	Re-orientate the angle of Free Flow signs for driver recognition	Signs

Corridor = Boudreau Road / Giroux Road

Risk Level	Issue ID	Location	Action	Area
C	I32-D	Boudreau @ Bellerose	Protected-permissive phasing is already provided. Check to see that it is provided during all peak periods and off-peak daytime.	Signals
C	I42-A	Boudreau @ Campbell	Consider revising the road network in this area to provide either signal-control or right-in / right-out only access at intersections.	Monitoring – Warrant Study
C	I42-B	Boudreau @ Campbell	Consider revising the road network in this area to provide either signal-control or right-in / right-out only access at intersections.	Monitoring – Warrant Study
C	I34-C	Boudreau @ Westwood	Install full traffic signal	Signals
C	I38-B	Boudreau @ Forest Dr	Install full traffic signal	Signals
C	S38-A	Boudreau @ Hebert	Consider removing this sign or relocating it to the median.	Sign
C	I22-B	Giroux Rd @ Lacombe Dr (E)	Make these crossings more visible using pavement markings and oversize pedestrian crossing signs. Monitor volumes and review the need for overhead or pedestrian-activated crossing control.	Signals / Line Markings
C	S26-A	Giroux Road ebound approaching Delbrook Blvd	Provide pedestrian crosswalk warning sign.	Signs
C	S27-A	Giroux Road ebound approaching Delbrook Blvd	Provide WC-2 sign on westbound approach	Signs
C	I32-C	Boudreau @ Bellerose	Protected-permissive phasing is already provided. Check to see that it is provided during all peak periods and off-peak daytime.	Signals
B	S32-A	Boudreau @ Sturgeon River Crossing	A CAT-350 or FLEAT end treatment is suggested. Also reflectors on the W-Beam in addition to Hazard markers on the approach at the hinge point	Barriers
B	S32-B	Boudreau @ Sturgeon River Crossing	Hazard markers required and reflectors on W-Beam	Barriers
B	I30-A	Boudreau Rd @ Erin Ridge Dr	Consider re-timing signal to allow greater flow of left turning traffic per cycle	Signals
B	S25-A	Giroux Rd wbound @ Larson	Trim shrubbery on approach. Since shrubbery is likely to re-grow, also provide a tertiary signal head on far-left side.	Tree Maintenance / Signals
B	I38-B	Boudreau @ Forest	Install full traffic signal	Transportation Management

Estimated Value of Work Completed in 2015 = $60,000
Operating Budget Funds Used in 2015 = $60,000
Requested Funding through Charter = $0

2016 IMPLEMENTATION PLAN

Risk Level D = Higher Risk Risk Level C = Moderate Risk Risk Level B = Lower Risk Risk Level A = Minimal Risk

Corridor = St. Albert Trail

Risk Level	Issue ID	Location	Action	Area
D	S12-B	SAT between Boudreau and Villenuve	Install hazard markers on existing barriers	Signs
D	I14-A	SAT @ Coalmine Rd	Install impact attenuator and flair as well as hazard marker WA-36 left or right as required	Barriers
D	I15-A	SAT @ Everitt Dr	Install impact attenuator and flair as well as hazard marker WA-36 left or right as required	Barriers
D	I16-A	SAT @ Neil Ross Rd	Install impact attenuator and flair as well as hazard marker WA-36 left or right as required	Barriers
C	Corridor	Entire Corridor	Installation of black on flourescent pedestrian crossing signs in right turn channels - 52 turn channels total with 2 signs to be installed at each location	Signs
C	Corridor	SAT @ Hebert	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road Markings
C	Corridor	SAT @ Gate	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road Markings
C	Corridor	SAT @ St Anne	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road Markings
C	Corridor	SAT @ St Vital	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road Markings
C	Corridor	SAT @ Boudreau	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road Markings
C	Corridor	SAT @ Villeneuve	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road Markings
C	I13-G	SAT @ Erin Ridge Rd	Minimum lane width of 3.5 m s suggested	Road markings
C	I13-F	SAT @ Villeneuve	Install a pedestrian warning sign for ebound right turn movements	Signs
B	S06-B	SAT southbound approaching St Anne St	Place lane designation sign overhead; or provide a shoulder-mounted oversize sign; improve pavement markings for lane turns; consider providing solid line to separate right turn and through lane	Signs / Road Markings
B	I13-B	SAT @ Villeneuve	Align push buttons towards the proper crossing direction	Signals
B	I09A	SAT approaching St Vital	Provide advance warning for the bus exchange	Signs
B	S01-A	SAT approaching Gate also on Gervais approaching Grange	Provide advance warning sign to the park-and-ride facility	Signs
B	I00-A	Commercial exit from TD Bank	Install Right Turn only allowed sign in island; relocate Exit Only Sign	Signs
A	S10-B	SAT between Lennox and McKenney Ave	Consider north/south bus connections by relocating bus stops	Transit
A	I01-G	Commercial exit from Petro-Can north of Hebert	Install a Right Turn Only allowed sign in the island	Signs
A	S11-B	Commercial exit at Visions	Remove Yield sign and replace with Stop sign	Signs

City	Data management	SAT @ Hebert	Installation of permanent count stations	ITS
City	Data management	SAT @ Boudreau	Installation of permanent count stations	ITS
City	Data management	SAT @ McKenney	Installation of permanent count stations	ITS
City	N/A	SAT between the midlot access and Everitt Dr	Install guardrail on west side of St. Albert Trail, at the curvature of the roadway	Barriers

Corridor = Boudreau Road / Giroux Road

Risk Level	Issue ID	Location	Action	Area
D	I36-A	Boudreau @ SWCA	Convert east/west left-turn phasing to protected-only. Also consider reducing posted speed	Signals
D	S36-A	Boudreau ebound at Fraser	Install pedestrian crosswalk with RA-4 signs, parallel pavement markings and a WC-2 sign to warn drivers of the upcoming pedestrian crossing.	Signs / Road markings
C	S31-A	Boudreau ebound between Erin Ridge Dr and Bellerose	Enhanced intersection warning and speed enforcement	Signs / Enforcement
C	Corridor S-22B 127-B	Entire Corridor	Installation of black on flourescent pedestrian crossing signs in right turn channels – 9 turn channels total with 2 signs to be installed at each location	Signs
C	Corridor	Boudreau @ Bellerose	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road markings
C	Corridor	Boudreau @ Hebert	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road markings
C	I37-A	eastbound Boudreau approaching Fraser	Install road marking notification and signs	Signs / Road markings
C	I41-C	Boudreau @ Campbell	the informal merge lane should be extended if possible and the traffic control converted to merge operation. If extending the lane is not possible, it should be converted to a lower-radius yield control and the yield control and pedestrian crosswalk further emphasized.	Signs / Road markings
B	139-B	Boudreau @ Forest	Remove pedestrian curb ramps on the west side	Infrastructure
B	141-A	Boudreau @ Campbell	Install Pedestrian crossing signs on all channels	Signs
B	S32-C	Boudreau @ Sturgeon River Bridge	Provide Object Marker signs on each barrier end	Signs
B	I23-A	Giroux Rd @ Lockhart	Consider placing the left-side signal head on the far side of the intersection (i.e. southwest quadrant) rather than the near side.	Signals
A	S32-D	Boudreau @ Firehall	Paint Stop line	Road Markings
City	Data management	Boudreau @ Bellerose	Installation of permanent count stations	ITS

Estimated Value of Work for 2016 = $334,200
Operating Budget Funds for 2016 = $17,700
Requested Funding through Charter for 2016 = $316,500

2017 IMPLEMENTATION PLAN

Risk Level D = Higher Risk Risk Level C = Moderate Risk Risk Level B = Lower Risk Risk Level A = Minimal Risk

Corridor = St. Albert Trail

Risk Level	Issue ID	Location	Action	Area
C	I13-H	Northbound west of Erin Ridge Road	Install guiderail or flatten side slope	Barriers
C	S04-B	North end of west guardrail (west side of SAT) at the SWCA overpass	W-Beam must be reinstalled as per spec with the curb; remove the turned-down end; install a FLEAT or CAT-350 end treatment.	Barriers
C	Corridor	SAT @ Everitt Dr	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road Markings
C	Corridor	SAT @ Neil Ross Rd	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road Markings
B	I09-D	Rivercrest Cres @ Transit Loading	Due to the complexity of this problem, consider conducting a full study	Study / Road markings and signs
B	I13-D	SAT @ Villeneuve Rd	Resurface with a higher skid resistance material	Road markings
B	I02-F	SAT @ Gate	Install concrete pad area for access to push button	Signals
A	I06-D	NW corner of SAT@ St Anne	Introduce a *Smart Channel* on NW corner.	Infrastructure
City	Data Management	SAT @ Villeneuve	Installation of permanent count stations	ITS

Corridor = Boudreau Road / Giroux Road

Risk Level	Issue ID	Location	Action	Area
C	Corridor	Boudreau @ Veness	Installation of zebra bar style line markings with increased traction and visibility material in turn bays	Road markings
C	I32-B	NB Right Turn at Boudreau @ Bellerose	Realign northbound approach to reduce right-turn radius - *Smart Channel*	Infrastructure
C	I36-B	north side of Boudreau from Westwood to SWCA	Review the need for this link based on network trail map.	Infrastructure
B	I39-C	Hebert nbound approaching Boudreau	Raise traffic signal displays. - Install new cantilever with mast arm	Signals
B	S43-A	Boudreau Rd north side, from Veness to Chatelain	Check if this sidewalk link is required in network	Infrastructure
City	Data Management	Boudreau Rd @ Campbell Rd	Installation of permanent count stations	ITS
City	Data Management	Boudreau Rd @ SWCA	Installation of permanent count stations	ITS

Estimated Value of Work for 2017 = $589,000
Operating Budget Funds 2017 = $0
Requested Funding through Charter for 2017 = $589,000

2018 IMPLEMENTATION PLAN

Risk Level D = Higher Risk Risk Level C = Moderate Risk Risk Level B = Lower Risk Risk Level A = Minimal Risk

Corridor = St. Albert Trail

Risk Level	Issue ID	Location	Action	Area
B	S09-A	SAT @ Pedestrian Bridge Overpass	Add F-Shape barrier to protect errant vehicles	Barriers
B	I13-A	SAT @ Villeneuve	Install impact attenuator and flair as well as hazard marker WA-36 left or right as required	Barriers
B	I10-B	SAT @ McKenney NB to EB free flow	Re-design the geometry of the channel island at the gore	Infrastructure
B	S03-B	East side of SAT south of Sterling	Improve sidewalk condition to meet universal design standards; avoid having more than 2% cross-slope. Install sidewalk from Sterling to Gate	Infrastructure
B	S04-A	West side of SAT on SWCA overpass	Refer to AT Roadside Design Guide for the placement of curbs and barriers	Infrastructure
B	S06-A	west side of SAT on north side of Sturgeon River bridge at pathway connection	Re-align AT path so that it meets the sidewalk	Infrastructure
B	I00-A		Install a right turn only sign and move Exit Only sign upstream to face NB traffic to mitigate the potential for a driver entering the exit.	Signs
City	Data Management	SAT @ St Anne	Installation of permanent count stations	ITS
City	Data Management	SAT @ Neil Ross / North End	Installation of permanent count stations	ITS

Corridor = Boudreau Road / Giroux Road

Risk Level	Issue ID	Location	Action	Area
City	Data Management	Boudreau Rd @ Sturgeon Rd	Installation of permanent count stations	ITS
City	Data Management	Giroux Rd @ Hogan Rd	Installation of permanent count stations	ITS

Estimated Value of Work for 2018 = $438,500
Operating Budget Funds for 2018 = $0
Requested Funding through Charter for 2018 = $438,500

ISSUES TO BE ADDRESSED WITHIN SEPARATE CHARTERS

Risk Level D = Higher Risk Risk Level C = Moderate Risk Risk Level B = Lower Risk Risk Level A = Minimal Risk

Corridor = St. Albert Trail

Risk Level	Issue ID	Location	Action	Charter / Project
C	S00-A	SAT south of Superstore - nbound	Gateway with 'Prepare to Stop' (WB-5) since this is the first signalized intersection in transition from mainly rural to urban	Arterial / Collector Intersection Enhancements
B	I12-C	SAT @ Giroux Rd / Boudreau Rd	Increase length of EB left turn lane	Arterial / Collector Intersection Enhancements
B	I14-B	NW corner of SAT @ Coalmine	Fill pothole with aggregate	Arterial Paving
B	I02-C	SAT @ Gate Ave	Provide APS	Transportation Systems
B	I13-C	SAT @ Villeneuve	Install APS	Transportation Systems

Corridor = Boudreau Road / Giroux Road

Risk Level	Issue ID	Location	Action	Charter / Project
C	I39-A	Boudreau @ Forest	Install APS devices	Transportation Systems
C	S22-A	Giroux Rd @ High School	School Area signage should be considered, since vehicle movements to/from the layby or pedestrian movements are less predictable than at the driveways. Consider dividing layby into parent and bus drop off to make movements more predictable. Also monitor pedestrian volumes and review the need for pedestrian-activated crossing control	Safe Journeys
C	Corridor	Boudreau @ Campbell	Installation of zebra bar style line markings in turn bays	
B	I40-A	Boudreau @ Page / Akins	Enhance drainage by redesigning transition from ramp to road	Side walks
B	I40-B	Boudreau @ Page / Akins	Re-design refuge islands on all corners. Dual-ramp design oriented towards each crosswalk is recommended.	Sidewalks
B	I41-D	Boudreau @ Campbell	Same as above.	Arterial / Collector Intersection Enhancements

IDENTIFIED ISSUES UNDER CONSIDERATION

Risk Level D = Higher Risk Risk Level C = Moderate Risk Risk Level B = Lower Risk Risk Level A = Minimal Risk

Corridor = St. Albert Trail

Risk Level	Issue ID	Location	Action Recommended
D	I01-A	SAT @ Hebert	Significant improvements have already been recently implemented. Consider grade-separation in longer term.
D	S04-C	SWCA Overpass	Narrow all lanes to 3.5 m to get 0.6 m extra space which is the base of a Jersey barrier (F-shaped), use 1 m for width of pedestrian facility on either side of the overpass; or (2) cantilever pedestrian bridge on the outside of the barrier (NB direction), this would be very expensive but would not require changing lane widths
D	S07-B	West side of SAT between Mission Ave and Madison Ave	Revision to access and parking required at this location
D	I06-A	SAT @ Sturgeon	Allow pedestrians to cross at all approaches
D	I13-I	SAT @ Villeneuve	Replace with larger LED lens and yellow backboards. Alternatively, use retro-reflective conspicuity tape instead of yellow backboards
D	S12-A	SAT median north of Boudreau	Install hazard markers as required.
C	I02-D	SAT @ Gate Ave	Allow pedestrians to cross at all approaches
C	I01-B	SAT @ Hebert	Ramp metering to downstream signal if queues spill back on mainline
C	S08-A	West side of SAT from St Vital to Madison	Increase sidewalk width to a minimum of 1.5 m and separate from face of curb by 1 m grass strip
C	S08-B	West side of SAT from St Vital to Madison	Revision to access and parking required at this location so that there is unobstructed path for pedestrians
C	S13-A	SAT from Villeneuve north	Re-align to urban cross-section or increase speed limit to match the current cross-section
C	S14-A	SAT from Villeneuve north	Re-align to urban cross-section or increase speed limit to match the current cross-section
C	S15-A	SAT from Villeneuve north	Re-align to urban cross-section or increase speed limit to match the current cross-section
C	S16-A	SAT from Villeneuve north	Review speed zoning and roadway cross-section
C	I10-A	SAT @ McKenney Ave	Allow pedestrians to cross at all approaches
C	I03-A	SAT @ Grenier Place	Eliminate EB left-turn using geometric treatments, not just signage. Allow only NB left movements onto Grenier place
B	S07-A	West side of SAT between Mission Ave and Madison Ave	Relocate the sidewalk and provide a 1 m grass strip
B	S03-A	West side of SAT between Sterling and Grenier	Rationalize accesses; could provide only one access with an access road; requires land acquisition and gas station pump relocation (this would be the preferred treatment); could look at opportunities to consolidate driveways without providing an access road
A	I01-E	NE corner of SAT @ Hebert	Close the southern access, use the middle access for the gas station and mall
A	I06-B	SAT @ St Anne	allow pedestrian crossings at grade; this could require additional signal timing

Corridor = Boudreau Road / Giroux Road

Risk Level	Issue ID	Location	Action
C	I41-B	Boudreau @ Campbell	Move the crosswalk further upstream, to midway along the channelization island.
C	S29-B	South side of Boudreau at Summit Center commercial access / exit	Encourage traffic from these developments to use alternate access points or modify to Right-in; right:out
C	I31-A	Boudreau @ Ironwood	Monitor turning volumes and collisions then run warrant for protected-permissive left-turn phasing.
C	S31-A	Boudreau @ Bellerose	Enhanced intersection warning and speed enforcement
C	138-A	Boudreau @ Forest	Install Pedestrian Signal Head – Completed 2015 with new signal installs.
B	I22-A	n side of Giroux between Hogan Rd and Lacombe Dr	Monitor growth of trees in the summer. Review the need to remove the tree closest to the intersection to expand sight triangle. Alternatively, increase level of illumination at the intersection to reduce strobe effect and revise landscaping policies to increase spacing between street trees.
B	I26-B	Giroux @ Deer Ridge Dr	Commence discussions with gas station about consolidating driveways. There are already 3 driveways to the development.
B	I27-A	Giroux @ Deer Ridge Dr	Enhance drainage by redesigning transition from ramp to road
B	I17-A	Giroux Rd @ Ray Gibbon Dr	Provide sidewalks with curb ramps on all islands. This is particularly in anticipation of future development and increase in pedestrian volumes.
B	I23-B	Giroux @ Lockhart Dr	Narrow the throat widths by extending either the median or the corner curb.
B	I34-A	Boudreau @ Westwood	Consider providing slotted left-turn lanes in the median, to reduce the offset. In the interim, trim median shrubbery so that the left-turn bay is easier to see both vehicles and the lane. If it is not feasible to fit in the slotted left-turn lanes, review traffic volumes and the benefits of providing protected-permissive phasing.
B	I39-D	Boudreau @ Hebert	Ensure wayfinding signage is installed further from intersections to avoid causing distraction from traffic control devices or sight obstructions.
B	S32-E	Boudreau @ Firehall	Provide median island between driveways, to prevent errant vehicles from entering it accidentally or using it as an acceleration lane or passing lane.
A	I27-C	Giroux @ Lexington	If the purpose is to highlight the crosswalk, reapply texturing to make it more visible, narrow the approach and provide curb ramps on either side.
A	126-A	Giroux @ Dawson	Ebound left turn storage capacity is low – monitor for signal timings and /or extend turn bay capacity

Corridor Wide Issues

Risk Level	Issue ID / Example	Location	Safety Issue
C	N/A	N/A	Limited accommodation for cyclists along the corridors.
C	N/A	N/A	Design of right turn channels
B	122-C	Boudreau / Giroux	Enhance pedestrian crossings through pavement markings and oversized signs. Review warrant process and pedestrian crossing accommodation

ISSUE AND IMPLEMENTATION STRATEGY SUMMARY

Total Issues Identified within the Final Report:

- St. Albert Trail Issues = 72
- Boudreau / Giroux Road Issues = 53
- Corridor Wide (both corridors) Issues = 20

- Total Issues = 145

Enhancement Implementation Year	Corridor	Issues	Total	Charter Funding Request
2015	St. Albert Trail	23		$ 0
	Boudreau / Giroux Road	15		
	Corridor	5	43	
2016	St. Albert Trail	14		$ 316,500
	Boudreau / Giroux Road	12		
	Corridor	10	36	
2017	St. Albert Trail	6		$ 589,000
	Boudreau / Giroux Road	4		
	Corridor	3	13	
2018	St. Albert Trail	7		$ 438,500
	Boudreau / Giroux Road	0		
	Corridor	0	7	
Sub-Total of Implemented Enhancements			99	
Sub-Total of Issues Addressed Within Other Charters			10	
Sub-Total of Issues Under Consideration			36	
TOTAL ISSUES WITHIN IMPLEMENTATION STRATEGY			145	$ 1,344,000