Safe Journeys to School

Final Consultant Report

City of St. Albert
March 2, 2015





Team Lead/Contact:

Raheem Dilgir
President, TranSafe Consulting Ltd.
908 – 1495 Richards Street
Vancouver, BC V6Z 3E3
604-563-9988
raheem@transafe.ca

TranSafe

TABLE OF CONTENTS

EXECUTIVE SUMMARY

1.0 INTRODUCTION 1
1.1 Project Objectives 1
1.2 Joint Public Steering Committee 1
1.3 Consulting Team 1
1.4 Project Context 2
1.5 Safe Journeys Principles 2
1.6 Project Phases and Cycles 3

2.0 PROJECT METHODOLOGY 5
2.1 Methodology Overview 5
2.2 Community Engagement Methodology 6
2.3 Engineering Review Methodology 8
2.4 Current and Best Practice Research Methodology 9
2.5 Issues and Enhancements 10

3.0 COMMUNITY ENGAGEMENT FINDINGS 11
3.1 Overview of Findings 11
3.2 MindMixer, Public Open House Workshops and Focus Groups 11
3.3 Parent Engagement Questionnaire 13
3.4 Student Engagement Questionnaire 25

4.0 ENGINEERING REVIEW FINDINGS 33
4.1 Collision Analysis 33
4.2 General On-Site Observations 37
4.3 Common Issues 39
4.4 School-Specific Issues 42
4.5 Effective Practices 43

5.0 CURRENT AND BEST PRACTICE REVIEW FINDINGS 49
5.1 School Bus Transportation 49
5.2 Crosswalk Safety Patrols 52
5.3 Active Transportation Programs and Safe Routes to School 58
5.4 Enforcement and Encouragement 60
5.5 Provincial Regulations and Programs 64
5.6 Other Municipal School Traffic Safety Programs 66

6.0 CITY-WIDE STRATEGIES 71
6.1 Philosophical Approach 71
6.2 Engineering 72
6.3 Education 75
6.4 Encouragement 80
6.5 Enforcement 84
6.6 Overarching Strategy 86

7.0 SCHOOL-SPECIFIC STRATEGIES 91
7.1 Summary of Strategies at 26 Existing Schools 91
7.2 Summary of Strategies at Two New Schools 100
7.3 Implementation Guidance 101

APPENDIX A TEAM ORGANIZATIONAL CHART
APPENDIX B COMMUNITY ENGAGEMENT WORKPLAN
APPENDIX C ENGINEERING REVIEW WORKPLAN
APPENDIX D SCHEDULE OF OPEN HOUSE WORKSHOPS
APPENDIX E PARENT SURVEY QUESTIONNAIRE (ENGLISH)
APPENDIX F PARENT SURVEY QUESTIONNAIRE (FRENCH)
APPENDIX G PARENT SURVEY RESULTS (SURVEY MONKEY)
APPENDIX H MINDMIXER WEBSITE PARTICIPATION SUMMARY REPORT
APPENDIX I MINDMIXER WEBSITE "IDEAS" SUMMARY REPORT
APPENDIX J STUDENT SURVEY QUESTIONNAIRE
APPENDIX K CLASSROOM ACTIVITY TOOLKIT
APPENDIX L RICHARD FOWLER SAFE JOURNEY TO SCHOOL PLAN
APPENDIX M STURGEON HEIGHTS SAFE JOURNEY TO SCHOOL PLAN
APPENDIX N ECOLE MARIE POBURAN SAFE JOURNEY TO SCHOOL PLAN
APPENDIX O KEENOSHAYO SAFE JOURNEY TO SCHOOL PLAN
APPENDIX P VITAL GRANDIN SAFE JOURNEY TO SCHOOL PLAN
APPENDIX Q JJ NEARING SAFE JOURNEY TO SCHOOL PLAN
APPENDIX R ÉCOLE LA MISSION SAFE JOURNEY TO SCHOOL PLAN
APPENDIX S WILD ROSE ELEMENTARY SCHOOL SAFE JOURNEY TO SCHOOL PLAN
APPENDIX T ÉCOLE SECONDAIRE SAINTE MARGUERITE D'YOUVILLE (ESSMY) SAFE JOURNEY TO SCHOOL PLAN
APPENDIX U VINCENT MALONEY JUNIOR HIGH SAFE JOURNEY TO SCHOOL PLAN
APPENDIX V ALBERT LACOMBE ELEMENTARY SAFE JOURNEY TO SCHOOL PLAN
APPENDIX W NEIL M. ROSS SAFE JOURNEY TO SCHOOL PLAN
APPENDIX X SIR ALEXANDER MACKENZIE SAFE JOURNEY TO SCHOOL PLAN
APPENDIX Y ÉCOLE FATHER JAN SAFE JOURNEY TO SCHOOL PLAN
APPENDIX Z BELLEROSE COMPOSITE HIGH SAFE JOURNEY TO SCHOOL PLAN

APPENDIX AA	WILLIAM D. CUTS JUNIOR HIGH SAFE JOURNEY TO SCHOOL PLAN
APPENDIX BB	LORNE AKINS JUNIOR HIGH SAFE JOURNEY TO SCHOOL PLAN
APPENDIX CC	PAUL KANE HIGH SAFE JOURNEY TO SCHOOL PLAN
APPENDIX DD	RONALD HARVEY ELEMENTARY SAFE JOURNEY TO SCHOOL PLAN
APPENDIX EE	MURIEL MARTIN ELEMENTARY SAFE JOURNEY TO SCHOOL PLAN
APPENDIX FF	SIR GEORGE SIMPSON JUNIOR HIGH SAFE JOURNEY TO SCHOOL PLAN
APPENDIX GG	ROBERT RUNDLE ELEMENTARY SAFE JOURNEY TO SCHOOL PLAN
APPENDIX HH	ST ALBERT HIGH SAFE JOURNEY TO SCHOOL PLAN
APPENDIX II	LEO NICKERSON ELEMENTARY SAFE JOURNEY TO SCHOOL PLAN
APPENDIX JJ	BERTHA KENNEDY CATHOLIC SAFE JOURNEY TO SCHOOL PLAN
APPENDIX KK	ELMER S. GISH SAFE JOURNEY TO SCHOOL PLAN
APPENDIX LL	LOIS HOLE ELEMENTARY SAFE JOURNEY TO SCHOOL PLAN (NEW)
APPENDIX MM	ALEXANDRE TACHE ELEMENTARY SAFE JOURNEY TO SCHOOL PLAN (NEW)


30 km/h
08:00-16:00
MON-FRI
PHOTO RADAR
ENFORCED

EXECUTIVE SUMMARY

Introduction

The City of St. Albert (City), in conjunction with its partners in school traffic safety, commissioned a comprehensive review of traffic safety for its schools, to minimize the risk of collisions and injuries involving students by identifying specific strategies and programs through a holistic 4-E approach (Engineering-Education-Encouragement-Enforcement).

Safe Journeys to School (SJ2S) is an initiative of the City, overseen by a Joint Public Steering Committee (JPSC). The JPSC is chaired by a City Councillor and composed of members of the City administration, the School Divisions, the RCMP and the public. The committee receives and reviews the consultant team's findings. The objectives of the consultant project are to:

- Gather information and feedback through public consultations at all 26 St. Albert schools, towards identifying enhancements that will mitigate student traffic safety risks.
- Identify the most effective engineering, education, enforcement and encouragement strategies to enhance student travel safety among all schools.
- Develop recommendations and specific action plans to enhance student and school traffic safety at each of the 26 existing schools and the two new school sites.

Traffic safety enhancements sometimes improve traffic efficiency. However, most suggestions in this report, particularly those geared at improving pedestrian and bicycle safety, are likely to negatively impact vehicle traffic efficiency. While the City always aims for a balance between safety and efficiency, the primary focus of this report is on enhancing student traffic safety.

Review Methodology

The review methodology is summarized in FIGURE ES.1.

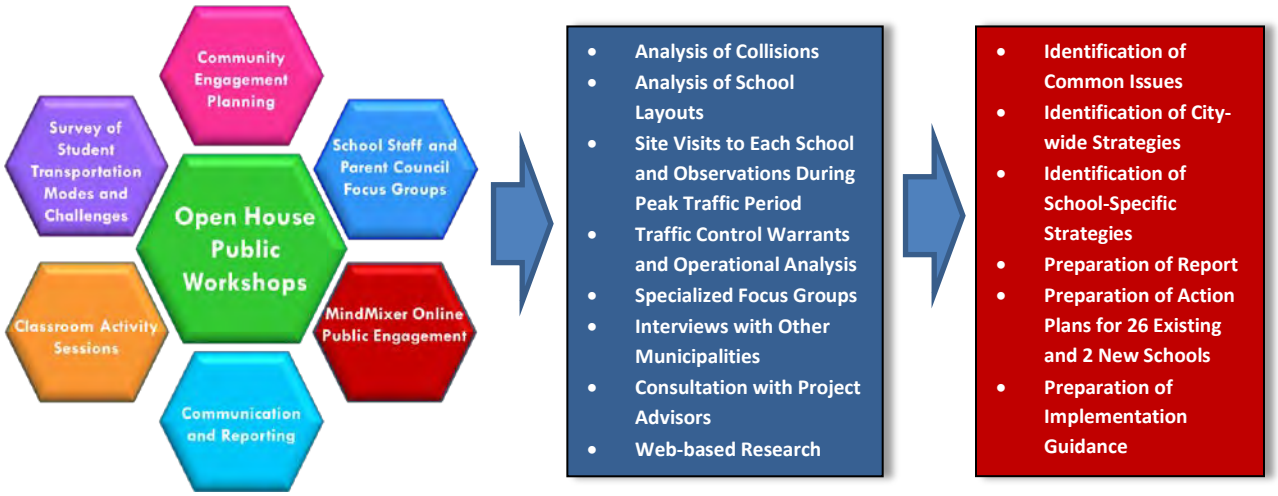


FIGURE ES.1 REVIEW METHODOLOGY

To meet the project schedule requirements, the school-based engagement and engineering activities were split into two cycles: Cycle A in June 2014 (5 existing schools) and Cycle B in September-October 2014 (21 existing and two new schools). The locations of the schools covered in the project are shown in FIGURE ES.2. The project covered all elementary, junior and high schools, and schools from four School Districts.

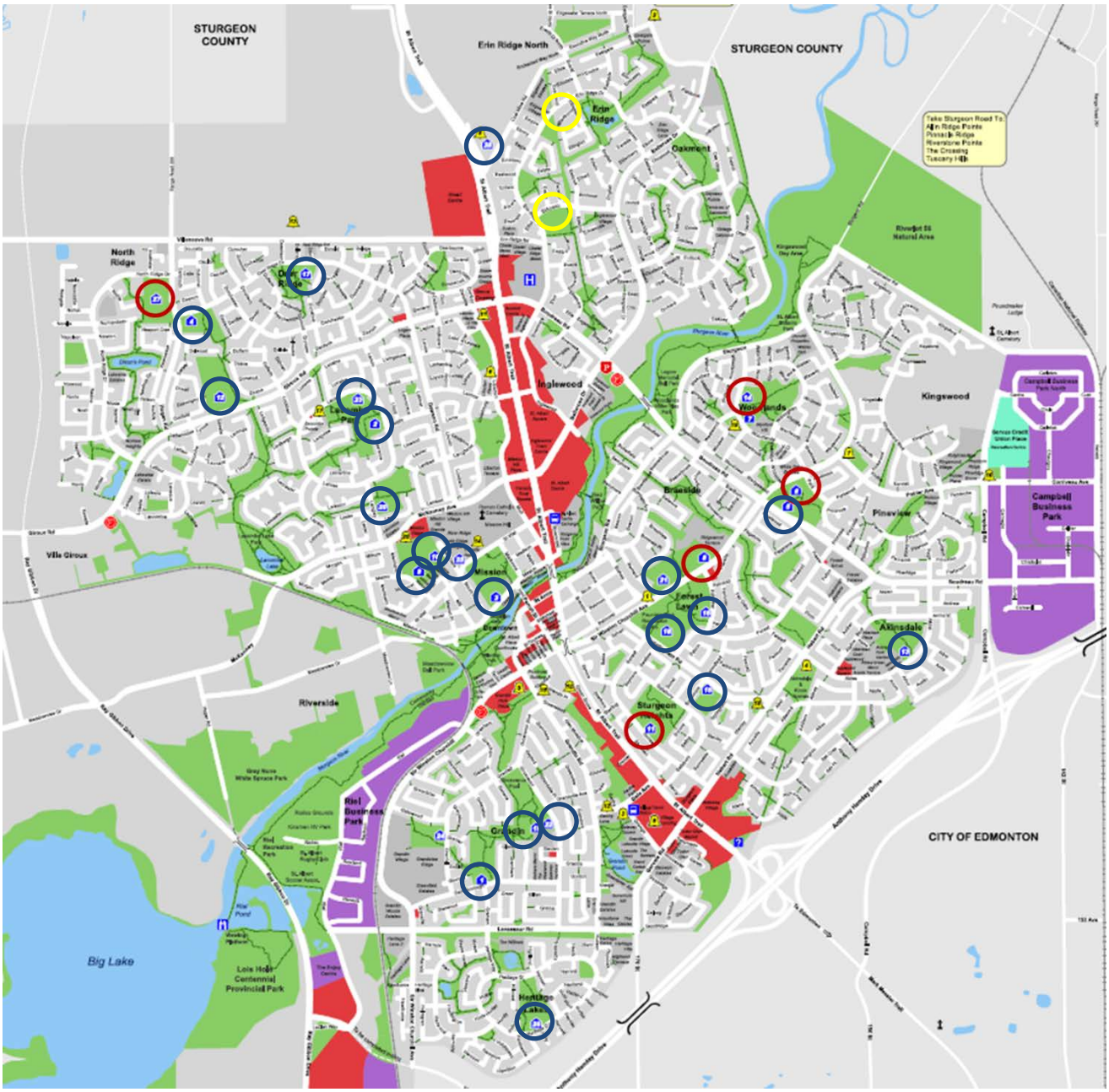


FIGURE ES.2 SCHOOLS REVIEWED IN SAFE JOURNEYS TO SCHOOL INITIATIVE

Community Engagement Findings

Participation in the community engagement activities was wide and varied, and provided a diverse range of input methods and participants:

- Open house public workshops: A total of 24 workshops were held for the 26 schools (two were combined sessions with adjacent schools). 819 parents attended, and several hundreds of issues were noted by the project team.
- MindMixer: An on-line engagement tool, "MindMixer" was set up as another convenient source for input for the wider community. This platform drew 1,520 identified users and a total of 7,350 hits.
- Focus Groups: Facilitated discussions were held with school staff, parent councils, RCMP, School Bus Transportation providers and School District senior management. A total of over 100 individuals participated in these focus groups.

From the above engagement methods, seven common themes of traffic safety concerns emerged:

1. Pedestrian Crossing Control
2. Availability of Safe Walking Routes
3. Availability of Parking
4. Impact of Snow / Weather
5. Traffic Violations
6. Student Behaviours
7. School Bus Transportation Services

To provide an even wider and more statistically significant sample of parent and student inputs, questionnaires were developed and distributed by the engagement team and completed separately by parents and students:

- Parent questionnaire: 772 completed questionnaires were received between June 9 and September 30, 2014, including at least one from each school.
- Student questionnaire: 1,773 completed questionnaires were received between September 1 and November 7, 2014 from Grade 4 to 12 students at 12 schools.

One of the key objectives of the questionnaires was to obtain a profile of student travel mode and the distance of the journey. The following trends were noted from the parent responses:

- Mode split is presently estimated at 47% school bus, 33% car, 16% walk and 3% bicycle;
- 16% of trips are within 1 km and 47% of trips are within 2.5 km; and
- The leading reason cited for mode choice was "convenience", followed by "safety" and "speed".

The student questionnaire responses indicated similar trends, with the exception that "fun" was a more prominent factor in student mode choice than "safety". The above trends indicate three mode shift opportunities:

- a shift from car trips to bus trips for distances over 2.5 km/h;
- a shift from car to foot trips for shorter distances; and
- a shift from car to bicycle trips for all distances.

It also suggests that students often choose walking or cycling for fun, and are less aware of the safety implications that their parents. Weather was also determined to be a significant barrier to walking or cycling, with a significant drop of 11% in winter (from 24% of trips to 13% of trips), as compared to fall and spring. The top three traffic safety issues and challenges mentioned in the parent questionnaire responses were:

- The failure of drivers to see and yield to pedestrians;
- Vehicle speeding; and
- Crossing the street safely.

The first and third responses both reflect concerns regarding being seen by drivers and crossing the street in safety. The student questionnaire also solicited issues and potential solutions identified by students. The top three issues on the journey were:

- Crossing the street;
- Bus or car accidents; and
- Busy roads.

The concerns regarding pedestrian safety while crossing the street echo the top issues identified through the other engagement methods. The other issues are also related, but also reflect other perceptions. For example, "bus or car accidents" suggest that there is a prevailing fear among students regarding the potential consequences of their journeys. "Busy roads" may suggest the lack of crossing opportunities, particularly across the arterial or collector roads that may or may not be in the vicinity of their school, but are still along their journey to school.

The project team prepared resources for arranged for the direct engagement of students in the classroom. This has been packaged as a "Classroom Activity Toolkit" (CAT) which teachers can utilize. It contains resources provided by Alberta Transportation, Green Communities Canada, the Alberta Motor Association and other organizations.



Engineering Review Findings

The engineering reviews consisted of a City-wide collision analysis and reviews of each school. The collision analysis was based on pedestrian, bicycle and school bus collisions reported in the City between January 2009 and April 2014 (a period of 5 years and 4 months). Due to the difficulty in establishing which collisions in the City were school-related trips, as well as to address concerns regarding safety for pedestrians and cyclists, the analysis was focused on collisions involving pedestrians, cyclists and school buses. The following trends were noted:

- *Transportation Mode:* Nearly half of the extracted sample of collisions involved school buses; about one-third involved pedestrians; and about one-fifth involved bicycles.
- *Severity:* Pedestrian/cyclist collisions typically result in injury; most school bus collisions resulted in property damage only.
- *Annual Trend:* There was a drop in 2010 and a slight increase in the past two years.
- *Hourly Distribution:* Most collisions occur between 7 and 9 am, and between 2 and 4 pm, with a slight noon peak. These peaks are just prior to and after school hours.
- *Road Surface:* Nearly half of the collisions for which the road surface condition was indicated were reported during adverse (snow, ice or wet) road surface conditions.
- *Driver Action:* The most common "improper" driver action was "Failed to Yield to Pedestrian" (one-third of crashes for which an improper driver action was reported).
- *Neighbourhood:* At least one collision was reported in each neighbourhood. Communities with the most collisions were Akinsdale and Grandin.

Due to the limitations of collision data, the engagement methods and site visits were aimed at identifying collision risks through anecdotal experiences such as "traffic conflicts" (close-calls).

During the individual school visits, engineering team members noted several effective practices and common issues. Effective practices at each school are listed in the report. The common issues are described in detail in the report and summarized in TABLE ES.1.

TABLE ES.1 COMMON SCHOOL TRAFFIC SAFETY ISSUES

Driver-Related Issues	Pedestrian/Cyclist – Related Issues	Infrastructure-Related Issues
• Parked Vehicles Blocking View Of Pedestrians • Speeding In School Zones Outside Peak Periods • Inefficient Use Of Pick-Up And Drop-Off Facilities • Aggressive / Inappropriate Driving Behaviour	• Pedestrian Conflicts In Parking Lots • Pedestrians Jaywalking In Front Of School • Poor Crosswalk Awareness / Compliance • Pedestrian And Cyclist Routing Between Street And School	• Conflicts Between Bus And Parent Loading Activities • Short Term Demand For Pick-Up Drop-Off Exceeds Facilities • Winter Conditions Impact Accessibility • Inconsistent Application Of Standards





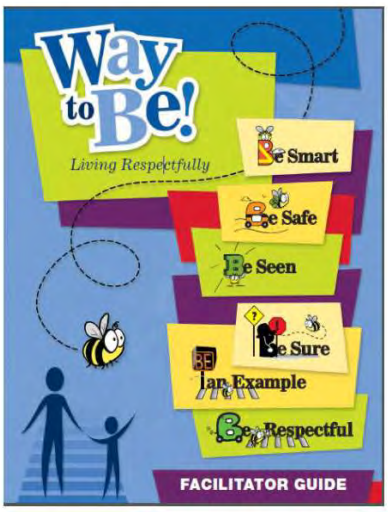


Current and Best Practice Review Findings

The current and best practice review aimed to bring the best of other jurisdictions to St. Albert, and the best of St. Albert to the rest of City. Research and consultations were conducted in five specific areas:

- School Bus Transportation
- Crosswalk Safety / Patrols
- Active Transportation / Safe Routes to School
- Enforcement and Encouragement
- Provincial Regulations and Programs

The consultations included specialized focus groups, interviews with other Alberta municipalities, consultation with project advisors (subject-matter experts). The discussions with other municipalities suggested St. Albert is among the provincial leaders for similar-sized municipalities in its traffic safety programming.



An example of a program that emerged from the best practice review is the Alberta Motor Association / Safe and Caring Communities of Alberta's *Way to Be! – Living Respectfully* program, which includes a student curriculum aimed at building a stronger traffic safety culture in which all road users respect one another in their interactions. This program is being piloted in Alberta in Fall 2015 at interested schools.

City-Wide Strategies

The recommended City-wide approach to improving the safety of journeys to school is depicted graphically in FIGURE ES.3. This holistic framework (nicknamed the "Safer Journeys Wheel") illustrates the key principles, strategies, tools and approaches that can be leveraged in support of safer journeys, with the perpetual goal of safer journeys, and the need for a cultural transformation among all stakeholders in order to achieve this goal.

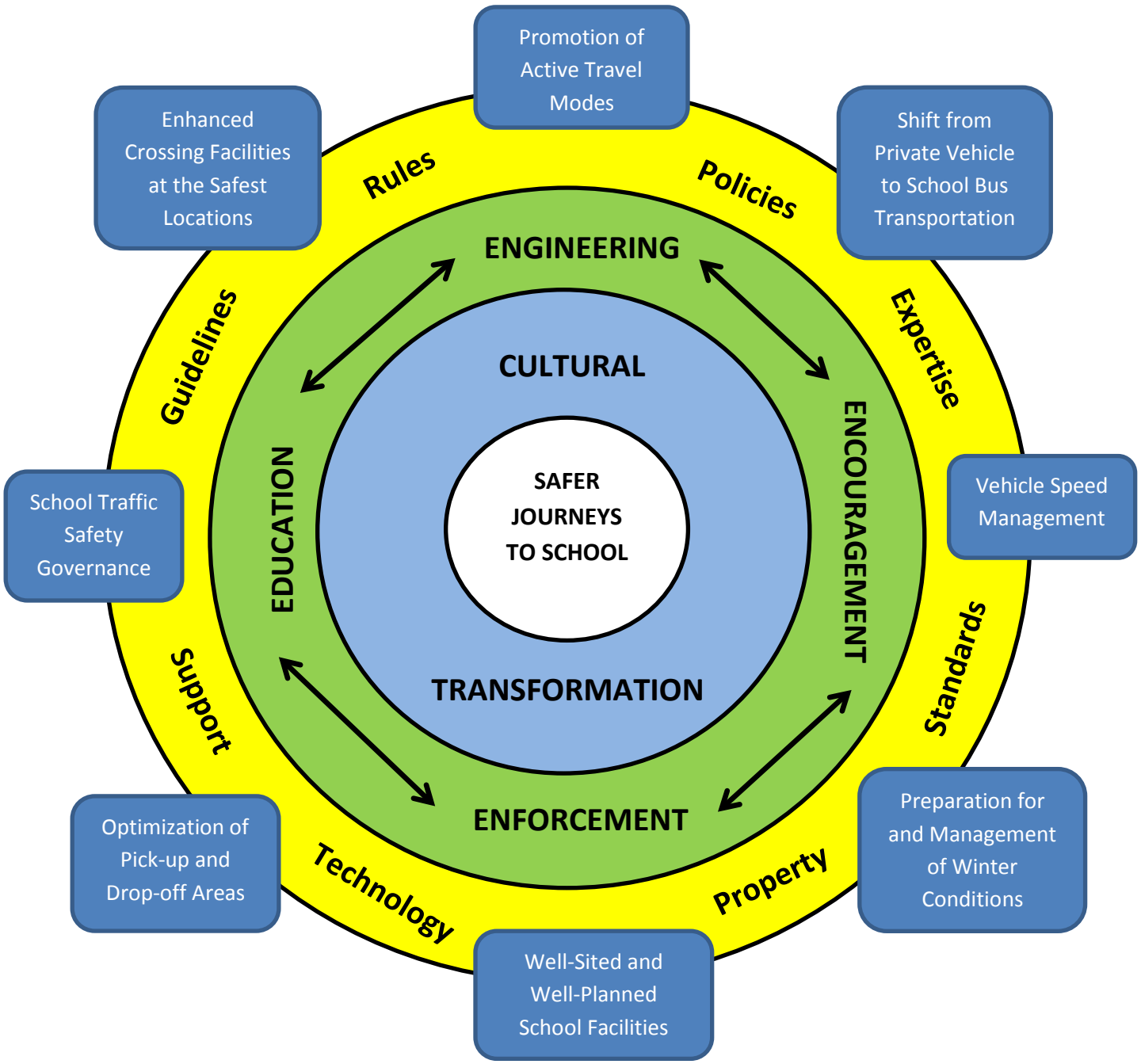


FIGURE ES.3 HOLISTIC FRAMEWORK ("WHEEL") FOR SAFER JOURNEYS TO SCHOOL

This framework reflects the *Safer Systems* concept, in which success is achieved by realizing the co-dependency of and interactions between the various elements; and by recognizing that the most vulnerable users of the system must be placed at the highest priority and protected through measures such as improved facilities and lower vehicle speeds. The framework includes eight safer journeys principles (the blue boxes, or "cogs of the wheel"), which if upheld can have a significant impact on school traffic safety. For each of the eight areas, multi-disciplinary strategies based been developed, and are summarized in TABLE ES.2.

TABLE ES.2 CITY-WIDE STRATEGIES FOR SAFER JOURNEYS TO SCHOOL

Principle #1: Promotion of Active Travel Modes	
For students living closer to school, the promotion of walking and cycling will lead to a more sustainable reduction in congestion and safety issues around schools. This can be pursued both through encouragement, by understanding the barriers and providing resources, collaborating with advocacy groups, and providing infrastructure that more safely accommodates these modes, particularly for cyclists. An enhanced walking and cycling culture is expected to increase the safety of these modes by making their presence more visible, predictable and acceptable. While an increase conflicts may occur in the short term, they are expected to decrease over the longer term.	• "Walking/Cycling School Buses" • Theme days and contests • Discuss weather barriers • Do walkabouts/cycle-abouts • Develop safe routes to school maps • Work with cycling groups • Pilot bike lanes / road diets • Rear pathways / alternate entrances • Keep facilities free of snow
Principle #2: Shift from Private Vehicle to School Bus Transportation	
For students living further from school, a shift from private vehicle to school bus transportation is expected to reduce congestion and the associated safety issues *provided* there is sufficient space for buses on-site, that no additional buses would be required (i.e. increase in utilization), and that improvements are made to attract more riders. The key measures to encourage this shift include increasing cost-effectiveness, improved safety and a superior on-board performance. Restoring a culture of safety on school buses will be a critical first step, which depends on the reliability and efficiency of the system, as well as the implementation of improvements to school bus transportation.	• Driver Training programs • More flexible cost structure • On-board storage • On-board surveillance • Address issues at bus stops • Optimize routes to avoid congestion • Proximity to school entrances • Collision avoidance technology • Winterization of school buses/tires • Spacious passenger waiting areas
Principle #3: Vehicle Speed Management	
Lower vehicle speeds result in higher yielding rates at crosswalks, make pedestrians and cyclists more comfortable when crossing the roadway, and reduce the risk of injury in the event of a collision. Compliance with school zone speed limits is best achieved through a combination of engineering speed reduction measures and education, encouragement and enforcement efforts. The most effective speed reduction measures are physical in nature (such as road narrowings); these can be supplemented by temporary measures such as patrols and cones during peak school traffic. Measures such as reader-boards can both educate and enforce.	• Gateway treatments • Real-time flashers • Speed zone reminders • Speed reader-boards and follow-up enforcement • Rewards for compliance • Raised crosswalks/curb extensions • Targeted speed enforcement • Automated speed enforcement
Principle #4: Preparation for and Management of Winter Conditions	
Since the school year coincides with the most adverse weather conditions and walking and cycling trips are relatively rare in the winter, an approach needs to be taken to both prepare students/parents/vehicles for journeys to/from school during winter conditions, as well as to minimize the impact of these conditions on journeys to school, including the preservation of facilities in the vicinity of schools. An emphasis on geometric measures and signage rather than pavement markings will increase the chances that facilities can remain effective during winter conditions.	• Discuss concerns with students • Reflective/climate-appropriate clothing • Snow blading policy • Sidewalk clearing policy • Windrow clearance policy • "Winter app" to report windrows • Enhanced signage and warning • Enhanced crosswalks
Principle #5: Enhanced Crossing Facilities at the Safest Locations	
Crossing facilities should be provided at locations where sight lines are clear, away from speed transitions and where sufficient demand for crossing exists - and not at other locations. The City has a policy for providing crossing	• Revised hierarchy of controls • No Stopping within 10 m of crosswalks • Curb extensions/in-street signs • Use of zebra/ladder markings at school crossings

facilities, which should be reviewed given the concerns raised during the engagement opportunities. Where crossing facilities are provided, they can be enhanced to make them more visible, to provide real-time controls, to ease the crossing manoeuvre, and to encourage lower vehicle speeds. Geometric enhancements such as curb extensions and raised crosswalks are expected to be the most effective upgrades. Each of these has advantages and disadvantages, which are described in this report. Keeping sight lines clear is a critical function and should also be carried out right away for locations with identified obstructions.	• Raised crosswalks • Higher visibility markings • Enhanced Student Patrols • Temporary measures (e.g. cones) • Illumination of pathways/crosswalks • Advance warning measures, including RRFB's, yield lines and crosswalk warning signs • Maintenance of shrubs • Automated pedestrian detection • Adult guards for unique situation
Principle #6: Well-Sited and Planned School Facilities	
The majority of safety and operational issues take place on the road with frontage to the school. Therefore, most of these could be prevented by moving some of the pick-up and drop-off facilities onto the school site and managing access and conflict points. Facilities that are new or being redeveloped should include features that support Principles 7 and 8. One of the most notable features is to make the school accessible from the rear for pedestrians and cyclists, to decentralize some of the activity from the front of the school. This may, however, require additional staff supervision to manage multiple student access points.	• Multiple frontage roads • Separates access points for buses and vehicles/staff • Staff parking in central part of lot • Location of school entrances • Fences to prevent jaywalking • Stacking at the downstream end • One-way on-site circulation • Sidewalks outside of driveways • Reverse-in staff parking • Consistent on-site sign content and format • Staggered hours for nearby schools
Principle #7: Optimization of Pick-up and Drop-off Areas	
It is not possible to significantly re-design most school sites; therefore, the pick-up and drop-off operations have to be optimized within the available space. Where possible, private vehicles and buses should be separated, with higher priority for buses (closer to school entrance or a dedicated school entrance), as well as revising the parking/stopping regulations to clarify the difference between stopping and parking and to give priority for immediate drop-off closer to the school entrance. Encouraging parking and walking from further away would also relieve congestion.	• Separation of buses and vehicles • Institute "No unattended vehicles" regulation • Shorter times for pick-up/drop-off parking • Restrict parking across the street • Possibility of shared zones outside of peaks • Use of positive/symbolic signing • Busing / parking patrols • Approach from/park on same side • Use of City parking lots where available
Principle #8: School Traffic Safety Governance	
The success of the above strategies will depend on the governance structures are put in place or maintained. School traffic safety will need to remain high on the City and School District priority list to continue the momentum and implement the findings of this report. The collaboration between the partners should mirrored as much as possible at the School District and individual school levels. Besides increasing the chances of successful implementation, solid governance and leadership will set a good example for parents and students, which in turn will support the building of a stronger and more sustainable traffic safety culture. Keeping the public informed about school traffic safety initiatives may increase their support through improved behaviours, and continue to build a sense of community.	• Public traffic safety committee • School-based traffic safety committees • Dedicated funding for traffic safety • Continued and expanded collaboration between all partners • Standardized student newsletter content • Traffic fines that better reflect risk • RCMP members dedicated to school safety • Maintain Safe Journeys website • Implement/enhance curriculum • Review locations/corridors raised as concerns • Traffic Conflict monitoring program • Coordination with Alberta Traffic Safety Plan member

These strategies were developed based on all of the analyses and research conducted, including concerns raised in the engagement activities that were validated by the study team or reflect perceptions that negatively affect student behaviours.

The strategies listed in TABLE ES.2 and the other recommended strategies are further described in TABLES 6.1 through 6.4 of the report. The critical components, including those recommended for priority implementation, are further described in the implementation guidance in TABLE ES.5.

To make journeys to and from school as safe as possible, a cultural transformation must accompany the strategies outlines in this report. A key opportunity identified is the *Way to Be! – Living Respectfully* Program of the Alberta Motor Association and Safe and Caring Communities of Alberta. The TranSafe team recommends that the City consider piloting this program among its schools.

Safe Journeys to School Plans

Draft Plans for safe journeys to school for the 26 existing and 2 proposed schools have been completed, and are in the report appendices. Each plan is a self-contained report, containing detailed findings, photographs and suggested short, medium, and long-term and enhancements, for the consideration of the JPSC.

The identified school-specific strategies are summarized in TABLE ES.3 for the existing 26 schools and in TABLE ES.4 for the new schools. The tables include the enhancement type, the suggested priority and the suggested "lead" for each strategy:

- The "type" of enhancement is one of the 4 E's. Engineering enhancements are not necessarily the responsibility of the engineering department.
- The "lead" is one of the City, RCMP, School District, or individual school. The identification of a lead is based on whether the enhancement is on or off the school site, the extent of the improvement, and other factors. It is assumed that anything engineering oriented on school sites would be addressed and funded through a District budget, as opposed to the individual school's budget. The lead and support roles can be refined based on further discussions between the partners as they work towards implementation.
- The time frames are defined based on funding availability (as opposed to risk level):
    - *Short Term – 1st Priority*: City projects that have existing budgets (operating or capital) that can easily be implemented and have a significant impact.
    - *Short Term* – can be addressed with existing operating and capital projects
    - *Medium Term* – using annual capital programs that require prioritization.
    - *Long Term* – require planning, design, and project justification.

TABLE ES.3 SUMMARY OF SITE-SPECIFIC STRATEGIES FOR EXISTING 26 SCHOOLS

SCHOOL	STRATEGY	TYPE	TIME FRAME	LEAD
Richard S. Fowler Catholic Junior High School	Encourage walking and cycling to reduce parking demand	Encouragement	Short	School
	Provide pick-up / drop-off area on street	Engineering	Long	City
	Create pedestrian route to parking stalls	Engineering	Medium	District
	Create staff only parking area	Engineering	Short	District
	Replace no parking with no stopping signs	Enforcement	Short	District
	Provide "road diet" with bicycle lanes on SWCA	Engineering	Long	City
	Create pedestrian/cycling routes around perimeter of lot	Engineering	Medium	District
	Assign yielding priority to the school buses	Engineering	Short	District
	Upgrade crosswalk at Fairview Drive	Engineering	Short	City
Keenoo-shayo Elementary School	Redesign on-site pick-up /drop-off area to provide 3 "lanes"	Engineering	Medium	District
	Provide channelization between parking lot and crosswalk	Engineering	Short	District
	Enhance crosswalk visibility	Engineering	Short	District
	Supervise pedestrian movements	Encouragement	Short	School
	Review school bus routing and arrival times	Education	Short	District
	Permit buses to use on-street PU/DO area as overflow	Encouragement	Short	District
	Enhance one-way signs and markings	Engineering	Short	District
	Install curb ramps for on-site crosswalk	Engineering	Medium	District
	Remove parking spaces in conflict areas and enforce restrictions	Engineering	Short	District
	Upgrade special crosswalk to current TAC standard	Engineering	Medium	City
	Review crosswalk flasher timing at Sturgeon Road	Engineering	Short	City
	Monitor speeds along section with adjacent school zones	Enforcement	Medium	RCMP
	Provide school zone signs between the two schools	Engineering	Short	City
	Reverse locations of staff and scramble parking	Engineering	Short	School
	Limit on-street parking restrictions to peak bus times	Engineering	1st Priority	City
	Change from "no parking" to "no stopping" near crosswalks	Engineering	1st Priority	City
	Extend south sidewalk or pathway to front of school	Engineering	Medium	District
	Provide directional signing for pedestrians at east end of lot	Engineering	Short	District
Sturgeon Heights Elementary / Junior High School	Create pathways from sidewalk to school outside of driveways	Engineering	Short	District
	Narrow and formalize driveways	Engineering	Short	District
	Construct driveways with sidewalk let-downs (not curb returns)	Engineering	Long	City
	Mark and sign parking and access aisle direction	Engineering	Short	District
	Encourage longer term parking on east side	Education	Short	School
	Construct a Temporary Asphalt Walkway on west side of Hogan	Engineering	Short	City
	Construct a Concrete Sidewalk along full length of Hogan	Engineering	Long	City
	Relocate Signs at South Crosswalk to improve visibility	Engineering	1st Priority	City
	Coordinate School Start-Up Times with JJ Nearing School	Education	Short	School
	Install Crosswalk on South Leg of Dartmouth Intersection	Engineering	1st Priority	City
	Lengthen School Zone on Northridge Drive	Engineering	Short	City
	Connect School Sidewalk to Northridge Sidewalks	Engineering	Short	District
	Install Crosswalk on North Ridge Drive west of Northstar Close	Engineering	1st Priority	City
École Marie Poburan	Encourage walking and cycling to reduce parking demand	Encouragement	Short	School
	Continue to Encourage Efficient Use of Space	Education	Short	School
	Continue with On-Site Reminders and Enforcement	Enforcement	Short	RCMP
	Reconfigure East Parking Lot to Separate Pedestrians	Engineering	Medium	District
	Provide Curb Extension and Crosswalk at East Parking Lot	Engineering	Medium	District
	Provide Sidewalk from East Parking Lot to Park Ave	Engineering	Medium	District
	Provide Connection to Sidewalk at NE Corner of Site	Engineering	Medium	District
	Provide Connection to Sidewalk at NW Corner of Site	Engineering	Medium	District

	Provide a Sidewalk on the ESSMY Lane	Engineering	Medium	District
	Provide a Sidewalk on the West Access Lane	Engineering	Medium	District
	Clarify Signage to Reinforce No Unattended Vehicles	Engineering	Short	District
	Monitor Drop-Off Zone	Education	Short	School
	Increase Width of Sidewalk in front of school	Engineering	Medium	District
	Paint Line Back from Curb along sidewalk in front of school	Education	Short	School
	Increase Priority for windrow clearance	Engineering	Short	City
	Implement Adult Crossing Guard Program at SWCA/Woodlands	Engineering	Short	District
	Install Advance Warning Sign and Crosswalk Paving Textures at SWCA / Woodlands	Engineering	Short	City
	Install Traffic Signal at SWCA/Woodlands when warrants are met	Engineering	Medium	City
	Formalize Two Lane Approach Southbound on Woodlands at SWCA	Engineering	Short	City
	Monitor Left Turn Operations at SWCA/Woodlands	Engineering	Long	City
	Implement North and Southbound Protected Only Left Turns at Boudreau and SWCA Pedestrian Crossings	Engineering	Short	City
	Raise Pedestrians' Awareness of Turning Vehicle Conflict at Boudreau and SWCA Pedestrian Crossings	Education	Short	RCMP
	Install a Special Crosswalk on Poirier Ave at Parkwood Dr	Engineering	Short	City
	Construct Missing Sidewalks on Sir Winston Churchill Ave and on Boudreau Rd	Engineering	Medium	City
Vital Grandin Catholic School	Utilize Reservoir Access Road for Vehicle Circulation	Engineering	Long	City
	Paint Lines and Provide Signs for On-Site Parking Stalls	Engineering	Short	District
	Eliminate Parking Stalls Closest to Driveway	Engineering	Short	District
	Enforce Immediate Loading / Unloading	Enforcement	Short	School
	Relocate Handicapped Stall	Engineering	Short	District
	Provide Missing Sidewalk Link immediately west of school	Engineering	Medium	City
	Flatten roadside with missing link west of school	Engineering	Medium	City
	Realign East Crosswalk towards school entrance	Engineering	Short	City
	Provide Curb Extensions at Crosswalk Locations on Sunset Blvd.	Engineering	Medium	City
	Encourage Students to Cross at Crosswalks	Encouragement	Medium	School
	Conduct Speed Enforcement on Sunset Blvd.	Enforcement	Short	RCMP
	Limit On-Street Restrictions to Peak Bus Times	Education	Short	City
	Encourage Stopping at Downstream End of Area in front of school	Encouragement	Short	School
	Change "No Parking" to "No Stopping" Near Crosswalks	Education	1st Priority	City
	Encourage Property Owner Across the Street to Trim Shrubs	Engineering	1st Priority	City
	Encourage Property Owners to Un-park Safely	Encouragement	Short	City
	Sidewalk Repairs East of School	Engineering	Medium	City
	Review School Bus Routes, Stops and On-Board Procedures	Education	Short Term	School District
École La Mission	Provide crosswalk through bus loop	Engineering	Short	District
	Provide sidewalk connection through landscaped area	Engineering	Medium	District
	Install buffer to separate sidewalk from road	Engineering	Medium	District
	Post signs to clearly indicate reserved use of bus loop	Engineering	Short	District
	Post No Stopping signs along south side of loop	Engineering	Short	District
	Post stopping restrictions on Heritage Drive and near crosswalks	Engineering	1st Priority	City
	Install fencing to separate wooded area from school property	Encouragement	Medium	District
	Install crosswalk signs and markings at Hamilton Crescent	Engineering	1st Priority	City
	Install crosswalk signs and markings at Hardcastle Place	Engineering	1st Priority	City
	Paint crosswalk between parking lot and bus loop, and continuity lines through driveway aprons	Engineering	Short	District

	Keep all pedestrian connections clear of snow and windrows	Engineering	Short	District
	Provide ladder-style crosswalk at Heritage Drive and Holly Place	Engineering	1st Priority	City
	Remove or relocate bush on corner of Heritage and Holly	Engineering	1st Priority	City
	Place speed reader boards on Heritage Drive	Encouragement	Short	City
	Review need for school patrol program	Encouragement	Short	School
Wild Rose Elementary School	Encourage staff to park further away from the school	Encouragement	Short	School
	Make use of City-owned parking lot behind school property	Encouragement	Short	School
	Formalize school side of Grenfell as a pick-up / drop-off area	Engineering	1st Priority	City
	Install fence between the sidewalk and parallel parking	Engineering	Short	District
	Post no-stopping restrictions near the crosswalk south of school	Encouragement	1st Priority	City
	Provide curb extensions to improve visibility of pedestrians entering from pathways at south crosswalk	Engineering	Medium	City
	Move north crosswalk south to near the north driveway	Engineering	1st Priority	City
	Move south crosswalk and patrols to the south side of south driveway	Engineering	1st Priority	City
	Extend school zone to beyond the crosswalk in either direction	Engineering	Short	City
	Move Curve Warning sign north of school further north	Engineering	Short	City
	Move southbound school zone start to before north crosswalk	Engineering	Short	City
	Provide positive guidance for students exiting the main entrance	Engineering	Short	District
	Encourage staff to back into parking stalls	Encouragement	Short	School
	Re-designate part of the bus drop-off area as bus-only	Engineering	Short	City
	Properly escort students around the other buses to avoid conflicts	Encouragement	Short	School
	Discourage staff from parking near on-site sidewalks	Encouragement	Short	School
	Provide zebra or ladder-style markings at the main school crosswalk	Engineering	1st Priority	City
JJ Nearing Catholic School	Encourage Safety Over Convenience	Encouragement	Short	School
	Build Additional On-Site Parking Lot	Engineering	Long	District
	Encourage Improved Behaviour With New Signs	Engineering	1st Priority	City
	Construct Curb Extensions at Crosswalks	Engineering	Medium	City
	Install Speed Reader Boards on Hogan Road	Education	Short	City
	Provide Sidewalk / Pathway from the east to School Building	Engineering	Medium	District
	Formalize Lane for Pick-up / Drop-off With Paint Markings	Engineering	Short	District
	Provide Stop sign at outbound driveway	Engineering	Short	District
	Install Stop Control and Crosswalk at Delwood and Newmarket	Engineering	Short	City
Wild Rose Elementary School	Encourage staff to park further away from the school	Encouragement	Short	School
	Make use of City-owned parking lot behind school property	Encouragement	Short	School
	Formalize school side of Grenfell as a pick-up / drop-off area	Engineering	1st Priority	City
	Installation fence between the sidewalk and parallel parking	Engineering	Short	District
	Post no-stopping restrictions several metres in both directions near the crosswalk south of school	Encouragement	1st Priority	City
	Provide curb extensions to improve visibility of pedestrians entering from pathways at south crosswalk	Engineering	Medium	City
	Move the north crosswalk south to near the north driveway	Engineering	1st Priority	City
	Move the south crosswalk and patrols to the south side of the intersection/south driveway, and have patrollers direct them	Engineering Encouragement	1st Priority	City School
	Extend school zone to beyond the crosswalk in either direction	Engineering	Short	City
	Move the Curve Warning sign north of school further north	Engineering	Short	City
	Move southbound school zone start to before north crosswalk	Engineering	Short	City
	Provide positive guidance for students exiting the main entrance	Engineering	Short	District
	Encourage staff to back into parking stalls	Encouragement	Short	School

	Re-designate part of the bus drop-off area as bus-only	Engineering	Short	City
	Properly escort students around the other buses to avoid conflicts	Encouragement	Short	School
	Discourage staff from parking near on-site sidewalks	Encouragement	Short	School
	Provide zebra or ladder-style markings at the main crosswalk	Engineering	1st Priority	City
École Secondaire Sainte Marguerite d'Youville (ESSMY)	Maintain Staggered Start/End Schedule from École Marie Poburan	Education	Short	School
	Encourage Parents to Use East Access Aisle for Pick-up	Encouragement	Short	School
	Provide Sidewalk on West Side of West Access Aisle	Engineering	Medium	District
	Provide north/south protected-only left-turns at Boudreau/SWCA	Engineering	Short	City
	Raise Pedestrians' Awareness of Turning Vehicle Conflict	Education	Short	RCMP
	Construct Missing Sidewalks on SWCA and on Boudreau Rd	Engineering	Medium	City
	Implement Adult Crossing Guard Program at SWCA/Woodlands	Engineering	Short	District
	Install Advance Warning Sign and Crosswalk Paving Textures at SWCA / Woodlands	Engineering	Short	City
	Install Traffic Signal at SWCA/Woodlands when warrants are met	Engineering	Medium	City
Vincent J. Maloney Catholic Junior High School	Construct a pick-up/drop-off area in off-site emergency lane	Engineering	Short	City
	Provide pedestrian crossings through parking lot	Engineering	Medium	District
	Provide school staff to supervise parking lot	Encouragement	Short	School
	Provide School Area signs approaching Mont Clare Place	Engineering	1st Priority	City
	Notify parents of responsible behaviours	Education	Short	School
	Promote Active Transportation	Encouragement	Short	School
	Investigate using off-site locations for pick-up/drop-off	Education	Short	School
	Emphasize safety over convenience	Education	Short	School
	Install access control signage at the driveways to parking lot	Engineering	Short	District
Albert Lacombe Elementary School	Discourage staff from parking illegally	Encouragement	Short	School
	Encourage staff to park in west lot	Encouragement	Short	School
	Encourage parents to park further on the same side	Encouragement	Short	School
	Convert west parking lot to pick-up/drop off area	Engineering	Medium	School
	Align Crosswalks with Entrances	Engineering	Medium	School
	Enforce against jaywalking	Enforcement	Medium	RCMP
	Extend school zone further west	Engineering	1st Priority	City
	Provide school zone flashers	Engineering	Short	City
	Provide Speed Reader-board and Enforcement	Enforcement	Medium	RCMP
	Sign and Mark Crosswalk at Grantham Place	Engineering	1st Priority	City
	Provide signage to discourage vehicles from bus zone	Engineering	Short	School
	Delineate bus passenger waiting area	Engineering	Short	School
	Narrow Driveways	Engineering	Short	School
	Implement Angle Parking	Engineering	Short	School
	Relocate and Orient Driveway Signs	Engineering	Short	School
	Encourage parking further into lot	Encouragement	Short	School
	Encourage reverse-in parking	Encouragement	Short	School
	Improve pathway connection from the east	Engineering	Medium	School
	Repair sidewalks along front of school	Engineering	Medium	City
	Review need for crosswalk at Levasseur and Grosvenor	Engineering	1st Priority	City
Neil M. Ross	Provide painted walkway north of parked vehicles	Engineering	Short	District
	Provide continuous sidewalk south of parked vehicles	Engineering	Medium	District

Catholic School	Coordinate discharge and provide greater supervision	Encouragement	Short	School
	Remove parking stalls immediately adjacent to on-site crosswalk	Engineering	Short	District
	Flatten slanted sidewalk on south side of school building	Engineering	Short	District
	Implement no stopping within 10 metres of crosswalks	Engineering	1st Priority	City
	Construct curb extensions at both crosswalks on Woodlands	Engineering	Medium	City
	Hatch parking lot near driveways to discourage parking	Engineering	Short	District
	Replace Do Not Enter and One-way signs with standard MUTCDC signs	Engineering	Short	District
	Install Curb Extensions	Engineering	Medium	City
	Remove Tree near Crosswalk	Engineering	Medium	City
	Upgrade special crosswalks to current TAC standard	Engineering	Medium	City
	Provide signed and marked crosswalk at Willoughby	Engineering	1st Priority	City
	Align handicapped parking space with curb on school side	Engineering	Short	District
	Discourage u-turns at Westwood following PU/DO	Encouragement	Short	School
	Review feasibility of school bus route revision	Encouragement	Short	District
	Install speed reader-boards along Woodlands, and enforce speed limit outside of school peaks	Education Enforcement	Short	City RCMP
Sir Alexander Mackenzie School	Encourage Parking at Locations Other than Front of School	Engineering	Medium	District
	Relocate Visitor Parking	Engineering	Short	District
	Sign and Educate about Reverse Angle Parking	Education	Short	School
	Upgrade Crosswalk on Bishop Street at Bernard Drive to Zebra	Engineering	1st Priority	City
	Replace No Parking with No Stopping Signs and Enforce	Enforcement	1st Priority	City
École Father Jan	Construct a pick-up/drop-off area in the parking lot	Engineering	Long	District
	Assign staff to supervise parking lot	Encouragement	Short	School
	Install signed and marked crossing at east end of school	Engineering	1st Priority	City
	Construct curb extensions at main crosswalk	Engineering	Medium	City
	Enforce posted speed limits on Mission Avenue	Enforcement	Short	RCMP
	Notify parents of responsible behaviours	Education	Short	School
	Promote Active Transportation	Encouragement	Short	School
	Investigate using off-site locations for pick-up/drop-off	Education	Short	District
	Emphasize safety over convenience	Education	Short	School
Bellerose Composite High School	Define school bus and passenger car zones within the lay-by	Engineering	1st Priority	City
	Provide oversize signs and ladder markings at Giroux/Lacombe	Engineering	1st Priority	City
	Conduct speed survey on Giroux Road	Engineering	Short	City
	Provide speed reader-boards on Giroux Road	Education Enforcement	Short	City RCMP
	Provide messages in school newsletters	Education	Short	School
	Provide speed humps and speed limit in parking lot	Engineering	Medium	District
	Officially close pathway crossing on Giroux Rd	Engineering	Medium	City
	Identify intended use of the existing lay-by with clear signage	Engineering/ Education	Short	City
	Widen driveway and add centre median	Engineering	Medium	District
	Clearly mark sidewalk through driveways	Engineering	1st Priority	City
William D. Cuts Junior High School	Install crosswalk on Larose across from school entrance	Engineering	1st Priority	City
	Provide curb extensions at new crosswalk	Engineering	Medium	City
	Divide school bus and passenger car zones within lay-by	Engineering	1st Priority	City
	Install No U-Turn signs on Larose and Larson and at the westerly driveway to the school	Engineering Enforcement	Short	City RCMP
	Connect west pathway to southwest corner of school	Engineering	Medium	District
	Realign easterly pathway to south of staff parking lot	Engineering	Medium	District
	Provide ladder-style markings at Larson & Larose crosswalks	Engineering	1st Priority	City
	Install stop or “yield to pedestrians” sign at driveway exit	Engineering	Short	District

	Provide school zone reminder signs within zone	Engineering	Short	City
	Provide speed reader boards on Larose and enforce	Education Enforcement	Short	City RCMP
Lorne Akins Junior High School	Provide Mid-Block Crosswalk with curb extensions on Fairview in front of the school, and Encourage its utilization	Engineering Encouragement	Medium	City School
	Use School Buses Queue as a Barrier to discourage jaywalking	Encouragement	Short	District
	Provide School Crosswalk on Fairview at Fairfax	Engineering	1st Priority	City
	Install No U-Turn Signs in front of school, and enforce	Engineering Enforcement	Short	City RCMP
	Replace 'No Parking' Signs with 'No Stopping' and Bus Zone Signs	Engineering	1st Priority	City
	Staff or Parent Monitor Parking Behaviours, follow-up bylaw enforcement	Encouragement Enforcement	Short	School City
	Use Public Transit Bus Zone for School Bus Overflow	Engineering	Short	City
	Conduct Speed Studies on SWCA, and Continue Enforcement	Engineering Enforcement	Short	City RCMP
	Provide SWCA Road Diet: two-lanes plus PU/DO lane	Engineering	Long	City
Paul Kane High School	Install Speed Humps in South Parking Lot Monitor Speeds and Tie to Parking Privilege	Engineering Encouragement	Short	District School
	Provide Raised Crosswalk and Stop Sign at South Exit	Engineering	Short	District
	Provide "do not enter except buses" signing in bus lane area	Engineering	Short	District
	Install lighting in bus only area	Engineering	Medium	District
	Paint Arrows in Parking Lot to reinforce one-way operation	Engineering	Short	District
	Extend Pick-up / Drop-off Area to the east	Engineering	Medium	District
	Convert Cunningham Road to two lanes plus PU/DO lane	Engineering	Long	City
Ronald Harvey Elementary School	Provide ladder crosswalk across Langley through bus bay	Engineering	Short	City / District
	Provide raised crosswalk across Langley to Lester Cres	Engineering	Medium	City / District
	Restrict stopping on the east side of Langley Ave	Engineering	1st Priority	City
	Restrict Stopping on west side of Langley south of Lester	Engineering	1st Priority	City
	Provide monolithic sidewalk on west side of Langley Ave	Engineering	Medium	City
	Formalize staff parking lot as one-way pick up/drop off area	Engineering	Medium	School
	Upgrade Special Crosswalk at Langley & Lester to current TAC standard	Engineering	Medium	City
	Trim landscaping on SW corner of Langley and Larkspur	Engineering	1st Priority	City
	Provide signage of bus bay	Engineering	Short	District
	Install One Way signage at south end of bus bay	Engineering	Short	District
	Install speed reader-boards on Langley Avenue, follow up with targeted speed enforcement	Education Enforcement	Short	City RCMP
Muriel Martin Elementary School	Reallocate Street Space to Provide Bus and Parent PU/DO	Engineering	Short	City / District
	Construct Curb Extensions across Deer Ridge Drive	Engineering	Medium	City
	Provide Periodic Crossing Guard Training	Education	Short	School
	Install "In-Street" School Crosswalk Sign on Deer Ridge	Engineering	1st Priority	City
	Install Speed Reader Boards on Deer Ridge Drive	Engineering	Short	City
	Educate and Monitor Jaywalking Across Deer Ridge	Education	Short	School
	Provide No Parking signs on either side of pathway approaching Desmarais Cres, and enforce	Engineering Enforcement	1st Priority	City RCMP
	Conduct warrant for pedestrian crosswalk at Desmarais	Engineering	Short	City
	Install No Stopping signs on Deer Ridge Dr at Denney Ct	Engineering	1st Priority	City
Sir George Simpson	Review efficiencies in school bus operations	Education	Short	District
	Prohibit bus drivers from blocking crosswalk	Enforcement	Short	City
	Extend west sidewalk further north of school	Engineering	Medium	City

Junior High School	Restrict Stopping Across Grosvenor Blvd	Engineering	Short	City
	Encourage Parking Along School Field	Encouragement	Medium	School
	Minimize Gaps Between Buses	Encouragement	Short	District
	Enforce Against Jaywalking	Enforcement	Short	City
	Provide signing at entrance of the bus bay	Engineering	Short	City
	Enlarge existing bus bay signage	Engineering	Short	City
	Provide enhanced school zone signing	Engineering	Short	City
	Mark centre-line along Grosvenor Blvd	Engineering	Short	City
	Conduct speed enforcement on Grosvenor Blvd	Enforcement	Short	RCMP
	Trim treetops	Engineering	Short	City
	Consider moving the 50 km/h zone further south	Engineering	Short	City
	Provide more supervision, education of pedestrian signal	Education	Short	School
	Consider piloting automated pedestrian detection	Engineering	Medium	City
	Revise Timing of Parking Restrictions Across Grosvenor	Engineering	1st Priority	City
	Enforce parking restrictions at driveways	Enforcement	Short	City
	Mark crosswalk across north leg of frontage road at Grandin	Engineering	Short	City
	Provide curb ramps at north leg of frontage road at Grandin	Engineering	Short	City
	Provide push-button instructions	Education	Short	City
	Trim tree on northwest corner at Grandville and Grandin	Engineering	1st Priority	City
Robert Rundle Elementary	Provide Rundle Signage Closer to Garden Crescent	Engineering	Short	District
	Consultation Regarding One-Way Operation of Garden	Education	Medium	City
	Review feasibility of providing on-site PU/DO Area	Engineering	Long	District
	Provide School Area Signage and Mark Crosswalk	Engineering	1st Priority	City
	Provide Curve Warning Signage on Garden Cres.	Engineering	Short	City
	Establish One-Way Circulation within Small City Lot	Engineering	Short	School
	Encourage greater use of large City lot	Encouragement	Short	School
	Provide specialized training and supervision for patrollers	Education	Short	School
	Restrict stopping in front of pathway entrance in small lot	Engineering	Short	City
	Consider providing sidewalks along Garden Crescent	Engineering	Medium	City
	Provide signed/marked crosswalk at east opening in fence	Engineering	1st Priority	City
	Revise staff lot signage to provide clearer directions	Engineering	1st Priority	District
	Mark crosswalks through staff parking lot	Engineering	Short	District
	Mark islands in staff lot and clear snow along hill	Engineering	Short	District
	Encourage staff to use north parking lot	Encouragement	Short	School
	Explore options for on-site pick-up / drop-off facility	Engineering	Long	District
St Albert Catholic High School	Park buses to physically prevent students crossing in-between	Encouragement	Short	District
	Construct on-site parent PU/DO area adjacent to bus area	Engineering	Long	District
	Replace parking lot crosswalk with ladder-style markings	Engineering	Short	District
	Implement School Area on Malmo Avenue	Engineering	1st Priority	City
	Promote Active Transportation	Encouragement	Short	School
	Investigate using off-site locations for pick-up/drop-off	Education	Short	School
	Emphasize safety over convenience	Education	Short	School
	Encourage proper use traffic control devices (incl. 4-way stop)	Education Enforcement	Short	RCMP
Leo Nickerson Elementary School	Promote Active Transportation	Encouragement	Short	School
	Investigate using off-site locations for pick-up/drop-off	Education	Short	School
	Emphasize safety over convenience	Education	Short	School
	Construct a pick-up/drop-off area along Cunningham Road	Engineering	Long	City
	Repaint crossing at Pedestrian Signal with ladder-style marking	Engineering	1st Priority	City
	Trim boulevard trees on approaches to the pedestrian signal	Engineering	1st Priority	City
	Provide sidewalk along south side of Sycamore Dr for PU/DO	Engineering	Medium	City
	Post speed reader boards along Cunningham, and enforce	Engineering Enforcement	Short	City RCMP

	Implement road diet on Cunningham Road (1 lane/direction)	Engineering	Long	City
	Consolidate clutter of on-site signs at parking lot	Engineering	Short	District
	Discourage school buses from double-parking	Encouragement	Short	District
	Install pedestrian lighting in pathway connections	Engineering	Medium	City
Bertha Kennedy Catholic Community School	Change "no parking" near crosswalks and bus stop on Larose to "no stopping"	Engineering Enforcement	1st Priority	City
	Replace, relocate or unhide one-way and do not enter signs	Engineering	Short	District
	Paint crosswalk across lot to signalized crossing at Leddy Ave.	Engineering	Short	District
	Install reminders of school zone speed limit	Engineering	Short	City
	Install speed reader boards on Larose Drive and enforce	Education Enforcement	Short	City RCMP
	Repaint crosswalk on Larose between Longview and Laydon	Engineering	1st Priority	City
	Provide curb extensions at Larose Crosswalk	Engineering	Medium	City
	Paint ladder markings at Larose Dr /Leddy Ave intersection	Engineering	1st Priority	City
Elmer S. Gish Elementary / Junior High School	Discourage u-turns and in-street pick-up / drop-off	Encouragement Enforcement	Short	School RCMP
	Install sidewalks from Akins Dr through lot to school entrance (interim paint)	Engineering	Short	District
	Discourage pick-up/drop-off in townhouse area	Encouragement	Short	School
	Upgrade Five Crosswalks with ladder-style markings	Engineering	1st Priority	City
	Upgrade Crosswalk Signs at 2 locations	Engineering	Short	City
	Upgrade special crosswalk in front of school to TAC standard	Engineering	Medium	City
	Restrict eastbound left turns into east entrance of PU/DO area	Engineering	Short	City
	Promote Active Transportation	Encouragement	Short	School
	Investigate using off-site locations for pick-up/drop-off	Education	Short	School
	Emphasize safety over convenience	Education	Short	School

TABLE ES.4 SUMMARY OF ENHANCEMENTS FOR TWO NEW SCHOOLS

SCHOOL	ENHANCEMENT	TYPE	TIME FRAME	LEAD
Lois E. Hole Elementary School	Implement No Stopping on North Side of Everitt Drive	Engineering	Short	City
	Install Two Crosswalks across Everitt Drive	Engineering	Short	City
	Raise Awareness of Mid-Block Crossings with Curb Extensions	Engineering	Short	City
	Move Bus Pullout Curb Extension out Towards Travel Lane	Engineering	Short	District
	Raise Awareness of Pedestrian Priority at Driveways	Engineering	Short	District
	Install School Zone Gateways on Everitt Drive	Engineering	Short	City
	Reallocate Parking Lot Space to Include a Visitor Row	Engineering	Short	District
	Reallocate Street Space to Include Cycle Lanes	Engineering	Short	City
École Alexandre Taché	Change "no parking" restrictions to "no stopping"	Engineering	Short	City
	Extend sidewalk across driveways with letdowns to the street	Engineering	Short	District
	Prohibit Pick-up / Drop-off Activity in the Parking Lot	Engineering	Short	District
	Provide a Barrier to Make Pedestrians Walk Around Bus Area	Engineering	Short	District
	Provide sidewalk to / crosswalk across bus lane	Engineering	Short	District
	Provide Pedestrian Connection from Eldorado Drive to School	Engineering	Short	District
	Install School Zone Gateways	Engineering	Short	City
	Switch Visitor Parking and Staff Parking Locations	Engineering	Short	District
	Reallocate Street Space to Include Cycle Lanes	Engineering	Short	City

Implementation Guidance

This report includes a long list of suggested City-wide strategies and school-specific strategies. Therefore, some general implementation guidance has been developed for the City, School Districts and other partners to discuss further. Note, cost estimates of recommended enhancement were not part of this review, but will be necessary for budgeting purposes.

Priority 1 (Year 1) City-wide Safe Journeys Strategies

As a first priority, it is suggested that the following enhancements be implemented at all schools. Depending on the City's budget process, these would ideally be implemented in the first year following the adopting of the Safe Journeys strategy. The objective of these initial changes would be to provide a minimum standard or "baseline" at all schools, as well as to provide consistency in regulation and appearance of traffic control devices and facilitate more effective enforcement. This first set of changes should be accompanied by a public awareness campaign, supplementary education in the classroom, and targeted enforcement following an initial educational period (particularly for the new parking and pick-up/drop-off regulations).



- Marked and signed crosswalks (including any new proposed crosswalks, and changing all school crossing markings to zebra or ladder-style);
- Signage of pick-up / drop-off zones (including changing existing signage to No Parking with No Unattended Vehicles tab);
- Signage of parking regulations (including changing No Parking to No Stopping where appropriate); and
- Sight line improvements (not all have been noted, but these are relatively easy to implement – tree trimming, etc.)

Note, while it is expected that the first three of the above items will apply to most/all schools, specific locations where they were observed to be an issue have been flagged in TABLES ES.2 (denoted as "1st Priority"), and described in each of the respective Safe Journey to School Plans.

Summary of Safe Journeys Strategies

Other City-wide strategies for the City to consider implementing as a top priority, and second priority strategies are summarized in TABLE ES.5. These are further described in Section 7.3 of the report.

TABLE ES.5 SUMMARY OF IMPLEMENTATION GUIDANCE (CRITICAL COMPONENTS)

Priority	Strategy/Enhancement	Lead	Support
Priority 1 (Year 1)	Low-cost measures at all schools: • New/relocated signed/marked crosswalks • New signage of pick-up / drop-off zones • Signage of parking regulations • Sight line improvements	City	School District RCMP
	Review of Pedestrian Crossing Control Policy	City	School District
	Review of Snow and Ice Control Policy	City	School District
	Start Building a Cycling Culture within the City	City	Schools, Advocacy Groups
	Re-create Excitement about Traffic Safety and School Buses	City/School District	Communications
	Establish Governance Structure and Framework	City (Council)	All Partners
Priority 2 (Short Term)	Implement Enhanced Crosswalks	City	Maintenance
	Develop Safe Routes to School	School District	City
	Adopt Principles for Development of Future Schools	School District	City
	Other "Short-term" school-specific improvements	Various	
Priority 3 (Medium Term)	Other City-wide Strategies	Various	
	"Medium-term" school-specific improvements	Various	
Priority 4 (Long Term)	Remaining City-wide Strategies	Various	
	"Long-term" school-specific improvements	Various	

Conclusion

The Safe Journeys to School initiative of the City of St. Albert and its partners sets forth a blueprint for further enhancing traffic safety for students travelling to and from school. Continued cooperation from all involved will ensure the success of the initiative.



1.0 INTRODUCTION

The City of St. Albert (City), in conjunction with its partners in school traffic safety, has commissioned a comprehensive review of traffic safety for its schools, with the objective of identifying specific strategies and programs through a holistic 4-E approach, to minimize the risk of collisions and injuries involving schoolchildren and school traffic.

Traffic safety enhancements sometimes improve traffic efficiency. However, most suggestions in this report, particularly those geared at improving pedestrian and bicycle safety, are likely to negatively impact vehicle traffic efficiency. While the City always aims for a balance between safety and efficiency, the primary focus of this report is on enhancing student traffic safety.

1.1 Project Objectives

The objectives of the project are to:

- Gather information and feedback through public consultations at all 26 St. Albert schools, with the intent to evaluate and identify enhancements that will mitigate concerns surrounding student travel safety.
- Identify the most effective engineering, education, enforcement, and encouragement strategies with the potential to enhance student travel safety throughout the City.
- Develop recommendations and specific action plans to enhance traffic and student safety for all 26 existing schools and two new school sites in St. Albert.

More information on the project can be found at the City's Safe Journeys to School page: http://stalbert.ca/living-here/community-directory/schools/safe-journeys/#sthash.Odqb8fh6.dpuf

1.2 Joint Public Steering Committee

Safe Journeys to School (SJ2S) is an initiative of the City. The City has formed a Joint Public Steering Committee (JPSC) to oversee it. The JPSC is being chaired by Councillor Tim Osborne and is composed of members of the City administration, the School Divisions, the RCMP and public members. The committee meets at regular intervals to discuss the initiative and review the consultant team's findings.

1.3 Consulting Team

TranSafe Consulting Ltd. has been engaged by the City, in conjunction with Stantec Consulting Ltd. and DC Dean Associates, to conduct the consulting component of the Safe Journeys to School (SJ2S) Initiative. These firms have a strong reputation in school traffic safety and public engagement. The team is being led by Raheem Dilgir, P.Eng., PTOE, MBA, President of TranSafe Consulting Ltd., a firm specializing in Transportation Safety. The core team members are supplemented by a number of subject matter experts who are providing advice on specific sub-topics. The team chart listing all team members is included in APPENDIX A.

1.4 Project Context

The project context consists of four elements:

A Growing Municipality: St. Albert is a growing municipality, especially its elementary school age population. There are approximately 14,000 students from Kindergarten to Grade 12 attending schools located in the City.

High Proportion of School Bus and Private Vehicle: A high proportion of the students in St. Albert are transported to/from school either by bus or passenger vehicle. The mode choice decision for the journey to/from school is a complex one that considers factors such as personal convenience, security, traffic safety, economics and school site conditions. Active transportation and school bus transportation are encouraged, and this project aims to identify ways that students can travel as safely as possible regardless of their mode choice.

Active Transportation is Valued: Although active transportation represents a small proportion of the journeys to school, it is valued by the City. The City's most recent *Transportation Master Plan* states that the City is continuously moving towards a more sustainable transportation system, which includes a shift towards more trips by walking, cycling and transit.

Building a Safe System: The City is an active participant in the Capital Region Intersection Safety Partnership (CRISP) and endorses the Safe Systems approach that aims to reduce both the frequency and severity of collisions by holistically addressing safety issues. Protecting vulnerable users and taking a systemic approach to improving traffic safety are key elements of this approach.

1.5 Safe Journeys Principles

A safer journey to or from school is one that:

- ***Provides reasonably safe accommodation*** of all travel modes and age groups
- ***Includes safe routes*** along roads, sidewalks or pathways
- ***Minimizes conflict points*** between modes: pedestrians, cyclists, vehicles and buses
- ***Provides adequate priority*** and protection for pedestrians across major roadways
- ***Provides clear sight lines*** to all other road users approaching the same point
- ***Provides facilities that are in good condition*** (roads, sidewalks, signs, markings)
- ***Optimizes the layout of the school*** frontage and the school site itself
- ***Clearly states the rules and policies*** pertaining to speeds, stopping and parking
- ***Responds to real-time traffic conditions*** especially during peak traffic periods
- ***Road users (including students) are knowledgable*** about rules and policies
- ***Is free of excessive sources of distraction*** from the roadway and traffic control
- ***Is preserved through enforcement*** and encouragement activities and programs

1.6 Project Phases and Cycles

The project is being carried out in four phases, with multiple components ("parts") covered during each phase. FIGURE 1.1 illustrates the phases.

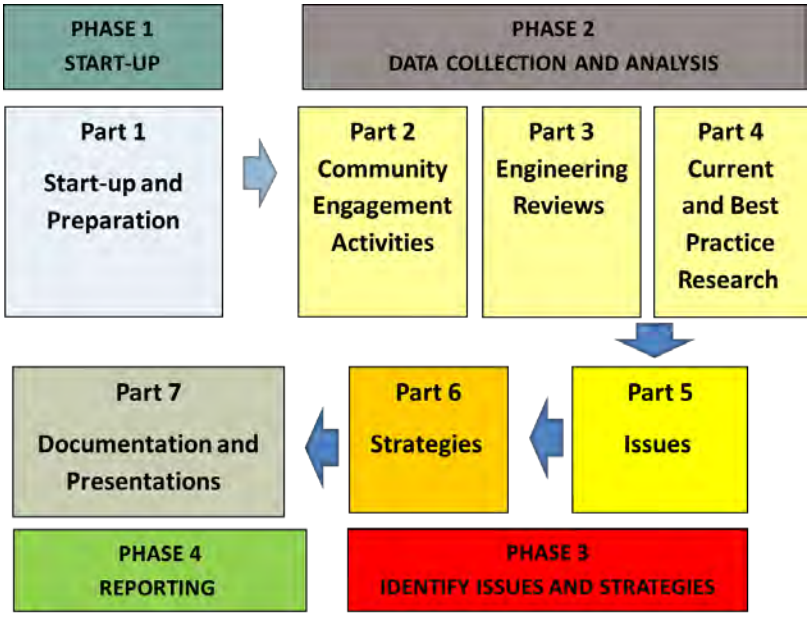


FIGURE 1.1 PROJECT PHASES

Due to the timing of the start of the project, the school-based engagement activities were split between the spring and the fall sessions of school. Therefore, the project was divided into two "Cycles". Each cycle repeats all four phases. The two cycles are described in TABLE 1.1.

TABLE 1.1 PROJECT "CYCLES"

	CYCLE A	CYCLE B EXISTING SCHOOLS	CYCLE B NEW SCHOOLS
Schedule	June to July 2014	September to December 2014	
Number of School Plans Prepared	5	21	2
Level of Completion of SJ2S Plans	Preliminary Drafts Completed in July 2014	Drafts Completed in December 2014	Drafts Completed in December 2014
Completion of Overall Draft Report	Preliminary Draft Completed in August 2014	Draft Completed in December	
Completed of Final Report and SJ2S Plans	February 2015	February 2105	

To meet the project schedule requirements, the school-based engagement and engineering activities were split into two cycles: Cycle A in June 2014 (5 existing schools) and Cycle B in September-October 2014 (21 existing and two new schools). The locations of the schools covered in the project are shown in FIGURE 1.2. The project covered all elementary, junior and high schools, and schools from four School Districts.

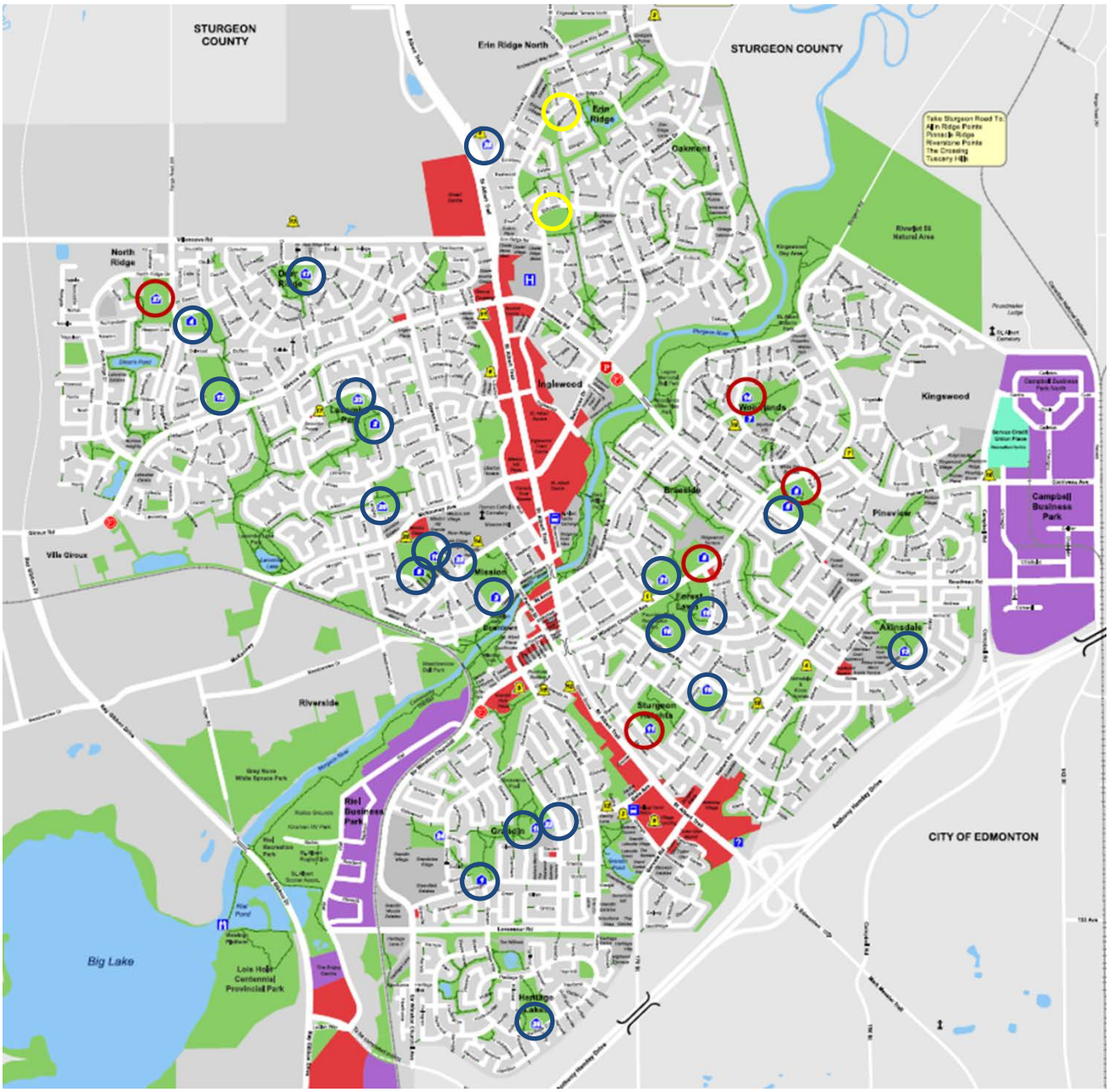


FIGURE 1.2 SCHOOLS REVIEWED IN SAFE JOURNEYS TO SCHOOL INITIATIVE

2.0 PROJECT METHODOLOGY

2.1 Methodology Overview

The tasks associated with the project are listed in FIGURE 2.1. Further details are provided in the Project Workplan documents enclosed in APPENDIX B and APPENDIX C. This Workplan was approved by the JPSC in May 2014, prior to its execution.

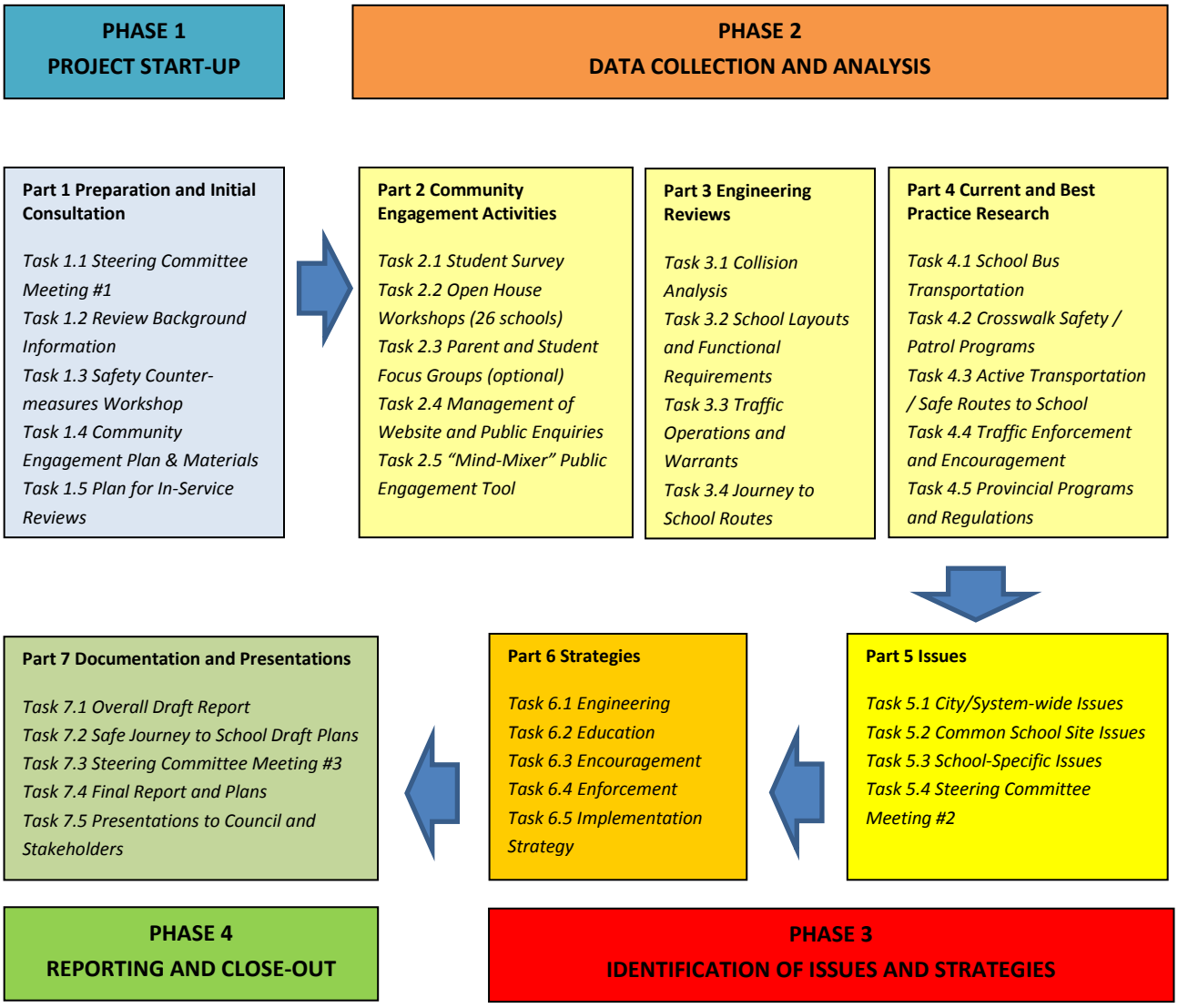


FIGURE 2.1 PROJECT TASKS

The methodology features:

- Regular meetings with the JPSC to report progress and receive feedback;
- A mixture of engagement activities: open house workshops, school-based focus groups, specialized focus groups and classroom sessions;

- Parent survey and student survey questionnaires to understand trends and issues regarding school travel mode choice and traffic safety;
- The development of a website to facilitate the public communication and engagement;
- A countermeasures workshop with engineering, planning and public works staff to discuss the range of available opportunities and compatibility with City policies and practices;
- The development of a Classroom Activity Toolkit to assist teachers in engaging students;
- Engineering reviews at every school during either the morning or the afternoon peak school traffic period; and
- Engineering activities that were scheduled following the open house workshops so as to allow for an investigation of concerns raised at the workshops.

2.2 Community Engagement Methodology

The engagement methodology includes the components shown in FIGURE 2.2. At the centre of the plan is the Open House Public Workshops, which were held for each individual school, and represented an opportunity for parents and other members of the community to provide rich feedback while the Consultant team members, City staff, school officials and JPSC members were present. The seven engagement components are briefly described in TABLE 2.1.



FIGURE 2.2 COMPONENTS OF COMMUNITY ENGAGEMENT PLAN

TABLE 2.1 DESCRIPTION OF COMMUNITY ENGAGEMENT METHODS

ENGAGEMENT METHOD	DESCRIPTION
Open House Public Workshop	Through public communications and the Principal of each school, parents and community members were invited to a session at each school. City and public officials were present, as well as members of the JPSC, RCMP, school administration and consultant team. They were typically held at the school gym or multi-purpose room, and included opportunities to view and place comments on aerial photos showing the school and the surrounding network, to interact with officials and discuss general and specific comments on issues related to school transportation safety. Summaries of each workshop are included in each school report.
Parent Survey Questionnaire	This interview questionnaire was administered by the consultant team with the assistance of the City. The purpose of the questionnaire is to broaden the reach further than the in-person open houses. The questionnaire is designed to get an estimate of the modal split for school travel, a snapshot of views towards traffic safety, and to provide an opportunity to state concerns and make suggestions to enhance safety. The survey was being administered using both MindMixer and SurveyMonkey via the website. Options for French and for hard copies were made available. The survey was launched on June 9, 2014 and the closing deadline was extended until September 30, 2014 to capture interest from those who may not have had the opportunity in June or over the summer.
School Staff and Parent Council Focus Groups	To get a more specific idea of school-specific issues from school staff and parents, opportunities were made available to meet with them separately immediately prior to the open house workshops. Some schools have a traffic safety committee that provided significant insight into the operational issues, school-based programs and messaging, as well as other information required by the consultant.
Student Survey Questionnaire	A student survey was administered via a questionnaire distributed to the schools to be passed on by school staff and teachers. The purpose was to hear directly from students regarding travel mode choice, issues they encounter along their journeys, and their ideas for enhancing their journey to/from school.
Classroom Activity Toolkit	Upon the suggestions of the JPSC, a “Classroom Activity Toolkit” was developed by the project team. It contains resources provided by Alberta Transportation, Green Communities Canada, the Alberta Motor Association and other organizations. The classroom activity sessions have two objectives: (1)to equip teachers with the resources they need to engage their students in discussions about traffic safety; and (2)to collect feedback for the consulting team regarding traffic safety issues directly from students, through their teachers. Although the Toolkit was completed and shared by the project team, it was not implemented at several of the schools due to School District concerns.
MindMixer Public Engagement Tool	MindMixer is a tool that allows anyone and everyone in the St. Albert community to contribute to the conversation. It complements the traditional design and planning engagement process by encouraging conversation from project stakeholders through a safe, easy-to-use interface via the Internet. MindMixer functions as a virtual town hall, where stakeholders can generate ideas, help others evolve their ideas, and ultimately vote on and prioritize the best ideas for a project or community from anywhere in the language of their choice. In addition, stakeholders can use social media networks (e.g., Facebook, Twitter, Google+). A link to the MindMixer tool is provided from the City’s SJ2S Page.
Communication and Reporting	Public communication methods, including the “Safe Journeys to School” webpage on the City’s website, links to social media, ads in community newsletters and community centres, were utilized to create awareness of the initiative and opportunities for public input. Reporting includes updates on the website and reports of the JPSC to the City Council and School Districts.

Most importantly, the engagement methods were identified to be as *inclusive*, *flexible* and *comprehensive* as possible, to be consistent with the City's engagement process. This was implemented by *extensive communication* (to schools and public), collecting information using *multiple platforms*, providing *several public reminders*, providing guarantees of *confidentiality*, *learning from the feedback* provided following the first cycle, and *reporting on* the results, through this report.

The Schedule of Open House Public Workshops is enclosed as part of the Public Backgrounder in APPENDIX D. Open houses were conducted for all 26 schools. In two cases, workshops were combined for schools located immediately adjacent to one another, but separate aerial photos were displayed showing each school to facilitate school-specific input. The parent interview questionnaire is enclosed in APPENDIX E (English) and APPENDIX F (French), and the student interview questionnaire is enclosed in APPENDIX J.

The Classroom Activity Toolkit is provided in APPENDIX K. The Toolkit was prepared primarily as an engagement tool for the Safe Journeys initiative, to help facilitate input to this study, including the completion of a questionnaire, making maps and an art contest. It was not intended as the primary tool for classroom education going forward; that should be developed separately under the direction of the school divisions, with involvement from the Ministry of Education.

More details on the engagement methodology are provided in Community Engagement Workplan in APPENDIX B. The findings from the engagement activities are presented in Section 3.0 and additional details in the Appendices.

2.3 Engineering Review Methodology

The engineering component of the project was aimed at improving the road environment both in the vicinity of the school and along the journey to minimize the risks of collisions. The engineering review was comprised of the following major tasks:

- Collision analysis;
- Review of school layouts and functional characteristics;
- Traffic observations and discussion of warrants; and
- Safe journeys to school routes.

The collision analysis was focused on incidents involving pedestrians, cyclists and school buses that occurred in the most recent 5 year period for which collision data was available. The objective was to identify patterns that could reveal potential City-wide trends or specific risks around school areas that could be further investigated as part of the analysis.

The other tasks were carried out during visits to each individual school. The engineering workplan followed a consistent procedure for each school, but allowed prior concerns to be investigated on site. Customized checklists for the St. Albert schools were developed by the project team to prompt complete reviews of the existing infrastructure and behaviours of road users on the school site and the road network surrounding the school. The school site visits specifically covered the following areas:

- School site;
- School driveways;
- Pick-up / drop-off (PU/DO) locations;
- Pedestrian crossing locations; and
- Surrounding roadways, sidewalks and pathway entrances.

Activities of the engineering team on site include:

- Consultation with school office staff;
- Inventory of infrastructure and traffic control;
- Assessment of infrastructure and traffic control;
- Observations of traffic operations, PU/DO procedures, behaviours and conflicts;
- Collection of photos (and video footage if necessary); and
- Measurements or sample counts.

More details on the engineering review methodology are provided in the Engineering Workplan in APPENDIX C. The engineering review findings are presented in Section 4.0.

2.4 Current and Best Practice Research Methodology

The City would like to incorporate as many good practices across its systems, and at as many of the schools as possible. The objectives of the current and best practice review were as to:

- Understand current practices: history, procedures, successes and challenges;
- Identify good practices in St. Albert for more widespread implementation;
- High-level benchmarking with other municipalities; and
- Identify best practices: resources available, proven interventions in other jurisdictions.

Five specific areas were researched:

- School Bus Transportation
- Crosswalk Safety/Patrols
- Active Transportation /Safe Routes To School
- Enforcement and Encouragement
- Provincial Programs and Regulations

The findings are documented in Section 5.0 of this report, and were separated into:

Current Practices – Research Methods:

- Meetings/interviews with key stakeholders
- Focus Groups with larger groups
- Online research

Best Practices – Research Methods:

- Advice from experts on the team
- Contact with comparable municipalities
- Online research

2.5 Issues and Strategies

From the preceding analysis, issues contributing to safety risks along the students' journey to school were identified. The three main sources of information in the identification of issues were:

- Engineering site visits;
- Engagement activities; and
- Collision data analysis.

The issues are divided into three categories:

- City-wide/System-wide: Issues related to City policies, standards or procedures;
- Common: Issues noted for several of the schools; and
- School-specific: Issues noted for specific schools.

For each identified issue, strategies were developed. These strategies cover the 4 E's: *Engineering, Education, Encouragement* and *Enforcement*. They follow the principles described in Section 1.5 of this report. Strategies are recommended in the context of the City's available budgets and other factors discussed at the Countermeasures Workshop held early on in the project. Sustainable solutions were strongly encouraged. Both short term and long term enhancements were suggested and the responsible agency likely to lead the implementation was identified.

The findings and recommendations for each school were documented in a "Safe Journey to School Plan". Brief implementation guidance for the City and School Divisions was also prepared (in Section 7.3 of this report), outlining the priorities that will have the greatest impact on traffic safety both in the short term and long term, and to prepare the implementation group for their discussions further to this report.

3.0 COMMUNITY ENGAGEMENT FINDINGS

The findings from the various methods of community engagement are documented in this section. The key trends are noted and the implications of these trends are discussed. The issues and strategies were based on the study team's interpretation of these results.

3.1 Overview of Findings

The TranSafe/Stantec community engagement team launched the MindMixer Safe Journeys to School online community engagement site and offered an interview questionnaire through MindMixer and SurveyMonkey to get the community's input on transportation safety at each St. Albert school. Additionally, the team conducted public workshops for every school; and focus group meetings were offered to every school and held at Vital Grandin, Ronald Harvey, George Simpson, St. Albert High, Elmer Gish and Vincent Maloney. Finally, classroom activities were delivered in schools and student input was collected via a student survey questionnaire.

This section provides a collective summary of key themes heard from teachers, parents and the public. Section 3.2 presents key findings from public open house workshops, focus groups and the MindMixer platform. Section 3.3 presents the parent survey questionnaire findings, and Section 3.4 presents the student questionnaire findings.

A student art contest was also offered to all St. Albert students in September to encourage further reflection on school transportation safety. Following the downscale in classroom activities due to concerns from the School District, marketing of the contest stopped, and no submissions were received by the engagement team.

The findings presented in this summary provide initial insight into the school transportation safety challenges perceived and experienced in the St. Albert community. Response rates varied; nevertheless, a number of common themes have emerged that apply to all schools in lesser or greater degrees.

3.2 MindMixer, Public Open House Workshop and Focus Group Findings

Participation in these community engagement activities is summarized as follows:

- Open house public workshops: A total of 24 workshops were held for the 26 schools (two were combined sessions with adjacent schools). 819 parents attended, and several hundreds of issues were noted.
- MindMixer: An on-line engagement tool, "MindMixer" was set up as another convenient source for input for the wider community. This drew 1,520 identified users and a total of 7,350 hits.

- Focus Groups: Facilitated discussions were held with school staff, parent councils, RCMP, School Bus Transportation providers and School District senior management. A total of over 100 individuals participated in these focus groups.

The input the community engagement team received through the MindMixer platform and in open house public workshops and school focus groups was very consistent with the input received through the survey questionnaire.

The responses to the interview questions received through MindMixer were combined with the SurveyMonkey results and summarized in Section 3.2. The summary of participation in MindMixer is reported in APPENDIX H, and the summary of the "Idea Report" (described in the Community Engagement Workplan) is enclosed in APPENDIX I.

Some transportation safety challenges reported and solutions identified by members of the St. Albert community were specific to particular school sites. However, seven common themes of traffic safety concerns and suggested improvements emerged from community input and feedback received to-date:

1. *Pedestrian Crossing Control*: the visibility and safety of pedestrian crosswalks and the placement of signage, flashing amber lights and/or safety patrollers.
2. *Safe Routes to School*: the availability and continuity of pedestrian routes to school and making sure that sidewalks, crosswalks and designated paths are in place so that students don't have to jaywalk, walk in the street, or cross through parking lots.
3. *Availability of Parking*: the availability of adequate vehicle parking and student drop-off and pick-up space by each school site and the management of traffic flow through school drop-off / pick-up areas to ease traffic congestion and to avoid unsafe vehicle parking, stopping and reversing and conflicts with pedestrians.
4. *Snow Removal*: regular snow removal during the wintertime to ensure pedestrian accessibility to school sites in the winter and to prevent the formation of windrows and snow piles that can create challenges for pedestrians and cyclists.
5. *Traffic Violations*: driver accountability for speeding, illegal parking, failure to yield to a pedestrian, and other unsafe behaviours, driver education on traffic safety rules, and police or bylaw officer enforcement of traffic safety rules.
6. *Student Behaviours*: student behavior that jeopardizes their safety in traffic (such as jaywalking, acting irresponsibly and risk taking) and the provision of traffic safety skills.
7. *School Bus Transportation Services*: the affordability, accessibility and safety of school bus transportation services and measures to improve school bus service affordability, accessibility and safety: financial incentives, part-time busing service, the creation of new bus routes or bus stops, the consolidation of school bus services, school bus driver education and training, and/or the alteration of traffic laws to require school buses to use safety equipment and to require vehicles to stop when students are entering or exiting a school bus.

3.3 Parent Engagement Questionnaire

The interview questionnaire is enclosed in APPENDIX E (English) and APPENDIX F (French). From June 9 to September 30, 2014, the TranSafe / Stantec community engagement team received 772 interview questionnaire responses. The full Survey Monkey results are shown in APPENDIX G. The graphs below illustrate the number of questionnaire responses from school community (FIGURE 3.1) and by grade level (FIGURE 3.2).

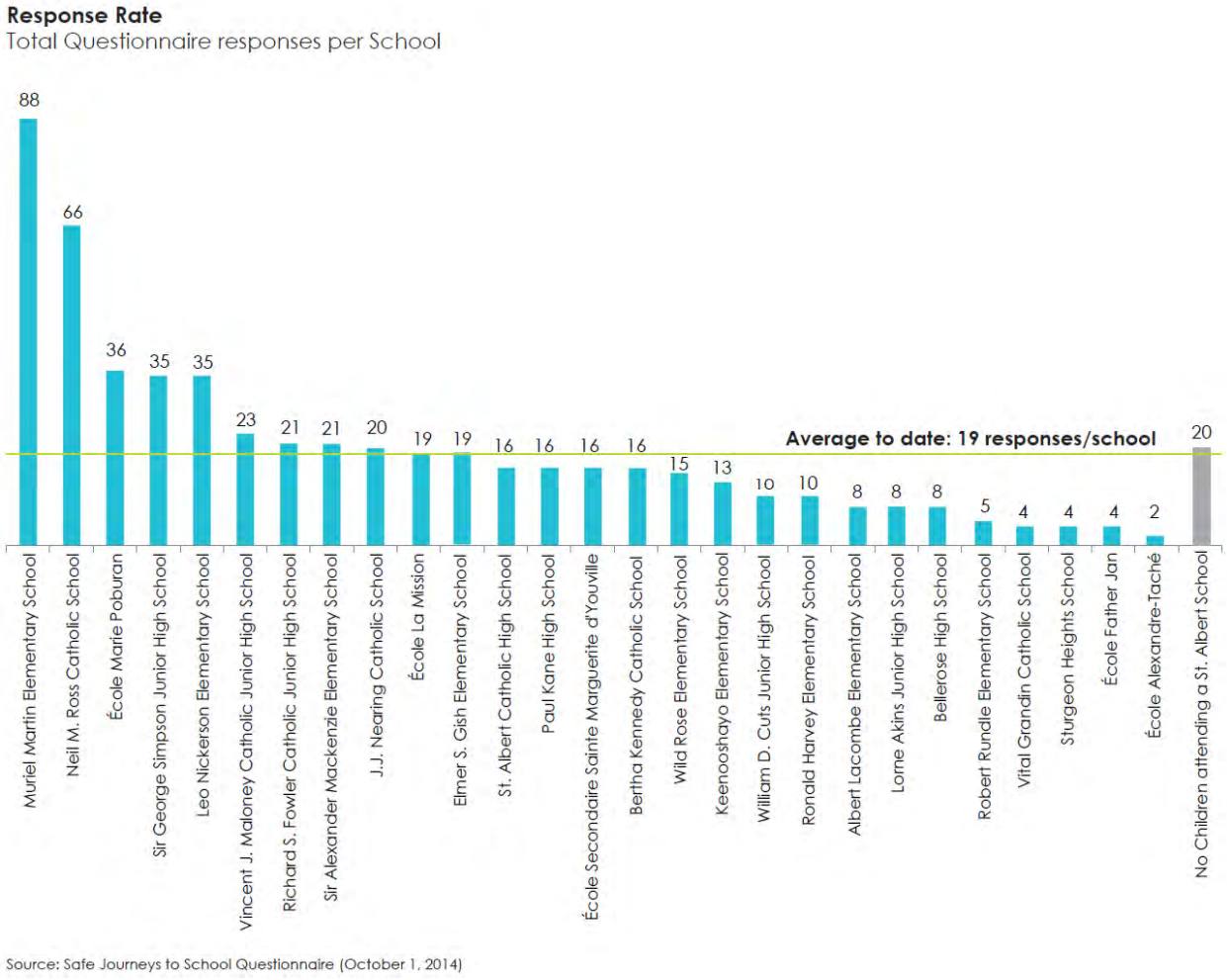


FIGURE 3.1 NUMBER OF QUESTIONNAIRES COMPLETED PER SCHOOL

11% of interview questionnaire responses were received from parents whose children attend Muriel Martin Elementary School, and interview questionnaire responses received from five schools (Muriel Martin Elementary School, Neil M. Ross Catholic School, École Marie Poburan, Sir George Simpson Junior High School and Leo Nickerson Elementary School) account for 33% of all interview questionnaire responses received. This high response rate reflects the efforts of school administration, including Parent Transportation Committees and the number or severity of traffic safety concerns that parents witness or experience at each school.

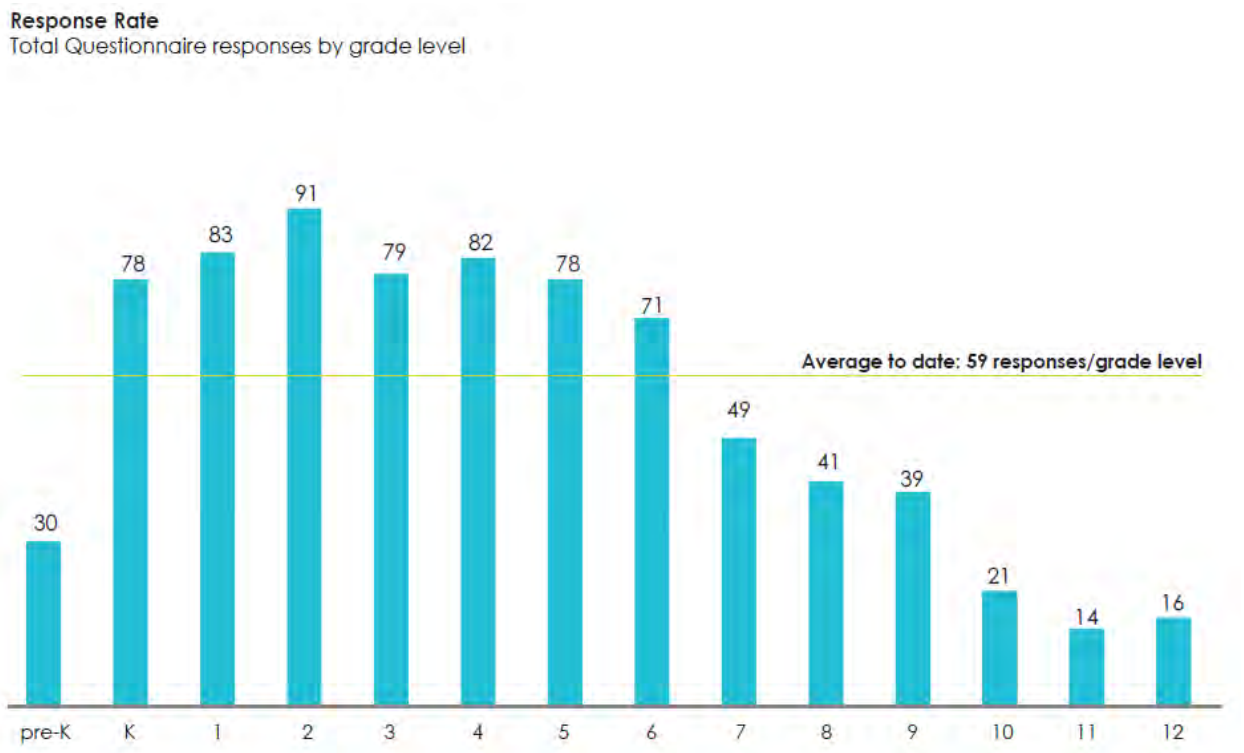


FIGURE 3.2 NUMBER OF QUESTIONNAIRES COMPLETED PER GRADE LEVEL

77% of interview questionnaire responses were received from families whose children attend elementary school (Pre-Kindergarten through Grade 6). As younger children have less-developed traffic safety skills, student transportation safety issues are especially pertinent to this age group.

Respondents were asked what mode of transportation they chose, both in the morning and in the afternoon. The responses are summarized in FIGURE 3.3. The following trends were noted:

- Mode split is presently estimated at 47% school bus, 33% car, 16% walk and 3% bicycle;
- 16% of trips are within 1 km and 47% of trips are within 2.5 km; and
- The leading reasons cited for mode choice were convenience, safety and speed.

FIGURE 3.3 also indicates the difference in mode choice in the winter, compared to the spring and fall. The responses indicate that the rate of school bus transportation is unchanged, but that there is a drop in walking and biking by about 11%, and that most of these trips are made by car instead, adding to the congestion on the roads and around schools.

The subsequent questions were aimed at understanding the reasons for more choice (including weather). The resulting distribution is shown in FIGURE 3.4. The dominant reason cited was convenience, by nearly one of out every three respondents. Safety and speed were among the other leading reasons cited.



Source: Safe Journeys to School Questionnaire (October 1, 2014)

FIGURE 3.3 TRANSPORTATION MODE CHOICE

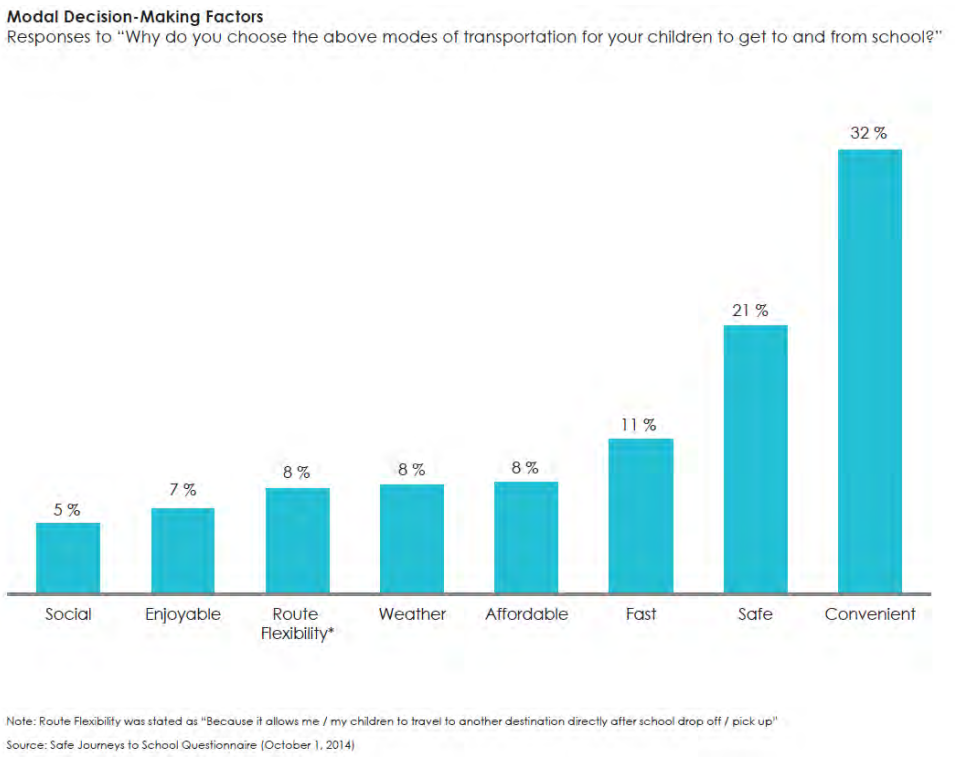


FIGURE 3.4 DECISION-MAKING FACTORS FOR TRANSPORTATION MODE CHOICE

The student questionnaire responses indicated similar trends, with the exception that "fun" was more of a factor in mode choice than "safety".

The modal split and volume of trips is segmented by distance in FIGURE 3.5. Most trips are between 2.5 and 5 km, followed closely by 1 – 2.5 km. Approximately 16% are within 1 km, which typically translates to a walking trip of less than 10-15 minutes or a bike ride of less than 5 minutes.

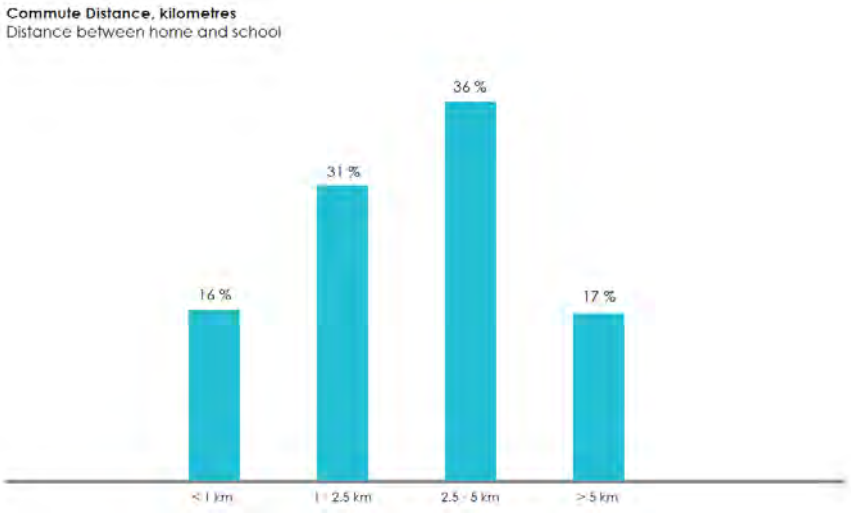


FIGURE 3.5 DISTANCE OF JOURNEY TO/FROM SCHOOL

The relationships between distance, weather and mode choice were further analyzed, particularly to highlight the opportunity to promote active modes. The graph suggests a few trends:

- Car trips still occur for very short journeys
- For trips of greater than 2.5 km, car trips increase over bus trips (even though more students qualify for bus transportation)
- At distances less than 1 km, about one in three trips are made by foot or bicycle
- In winter, longer walking trips are infrequent and bicycle trips are rare
- Bicycle trips are less sensitive to distance than walking trips, with a comparable number of cyclists from 2.5 km and from 1 km

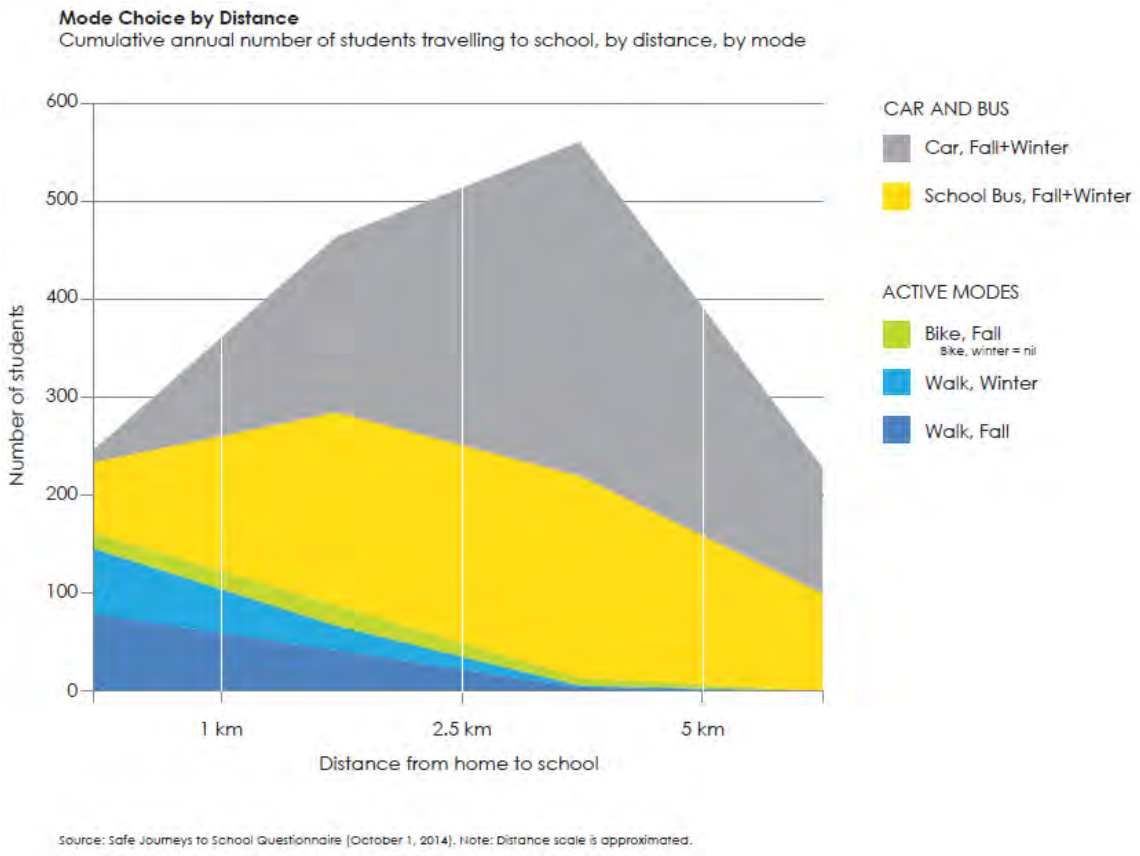


FIGURE 3.6 COMBINED SENSITIVITY OF MODE CHOICE TO DISTANCE AND WEATHER

The analysis indicates three mode shift opportunities:

- a shift from car trips to bus trips for distances over 2.5 km/h;
- a shift from car to foot trips for shorter distances; and
- a shift from car to bicycle trips for all distances.

Issues and Challenges

The remainder of the interview questionnaire provided an opportunity to comment on any traffic safety issues they experienced or witnessed on the way to their children's school, and possible enhancement opportunities. They reported a wide range of traffic safety concerns, listed in FIGURE 3.7.

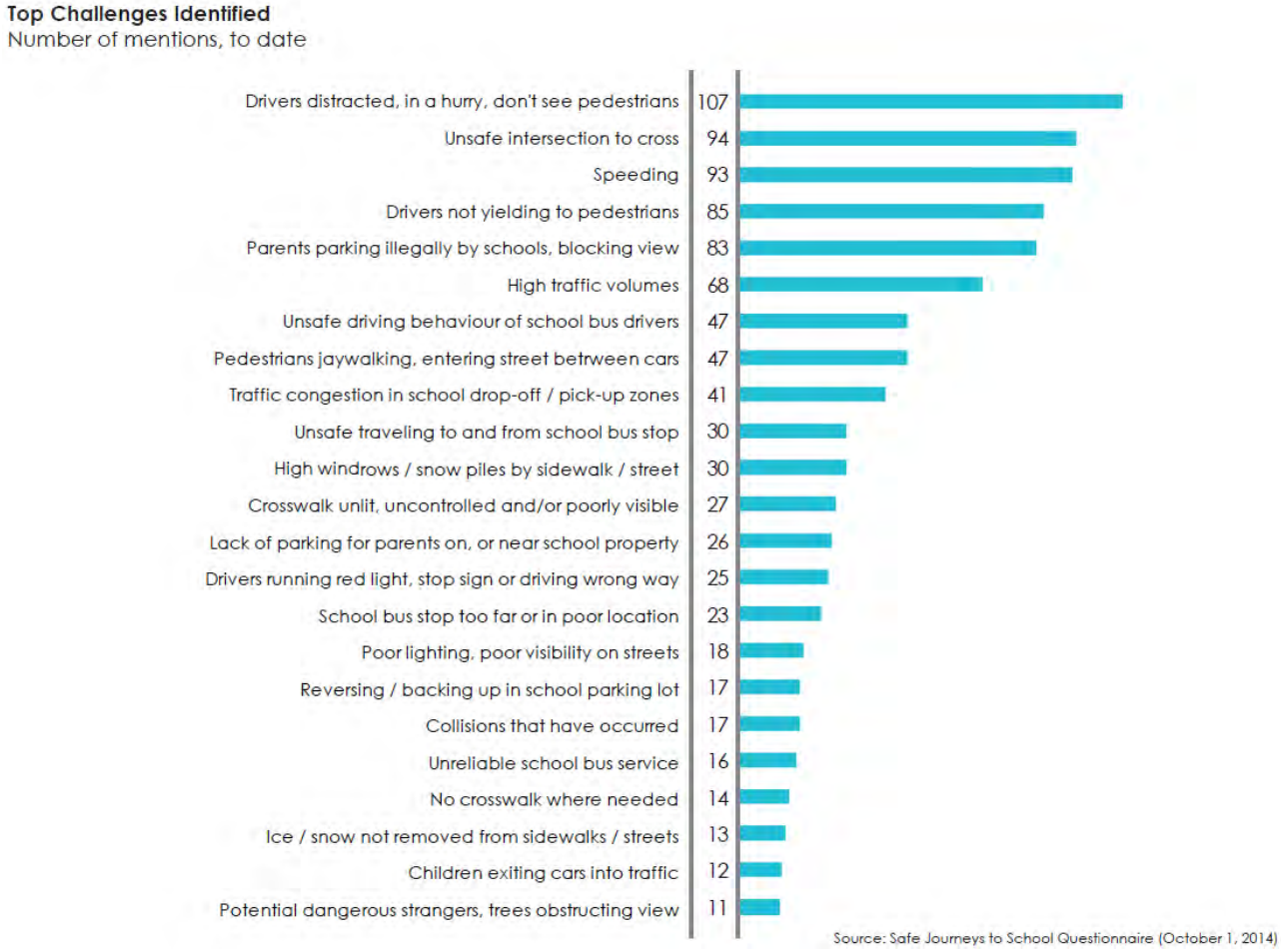


FIGURE 3.7 MOST COMMONLY REPORTED ISSUES

The three themes that emerged are as follows:

- <u>Distracted driving and failure to see pedestrians</u>
  A large number of survey respondents noted incidents where drivers were distracted or in a hurry, which made pedestrians attempting to cross the street feel less safe. Many close calls were reported in which drivers either failed to stop at crosswalks or had to brake quickly to avoid colliding with a pedestrian.

- Speeding
  Survey respondents also perceived that speeding was occurring on many of the streets along the journey to schools and in particular within the school zones themselves, involving both school buses and private vehicles. Most attributed these violations to the drivers' lack of awareness of the presence of the school zone. The concerns also extended to the operational and posted speed limits on residential streets as being too high.

- Intersection crossing safety
  Many respondents reported that they are afraid, or worry about their children crossing at intersections due to driver behaviors, speeding, and lack of visibility. Respondents described a number of intersections as lacking crossing facilities or that they are not visible enough. In some cases, these were not necessarily near the school, but that their children had to cross these intersections to get to bus stops or to their schools.

Other more specific concerns described by parent respondents summarized in TABLE 3.1.

TABLE 3.1 SUMMARY OF ISSUES IDENTIFIED BY PARENTS

ISSUE/CHALLENGE	DESCRIPTION
Drivers not yielding to pedestrians	Similar to the top safety challenge identified, survey respondents also reported a high number of incidents were drivers simply do not stop or yield at crosswalks. They noted that this may be the product of drivers not knowing how to and being unwilling to yield for pedestrians.
Vehicles parking illegally, blocking view of crosswalks and intersections	Respondents noted that because parent parking is scarce near many schools, parents often park near or on crosswalks in school zones during busy drop-off and pick-up times, impeding the view of pedestrians and other drivers. This creates potentially unsafe conditions for pedestrians attempting to cross the street as they cannot see oncoming traffic and drivers cannot see them.
High traffic volumes	Respondents expressed concern over the high traffic volumes present on streets and near schools. They noted that this creates unsafe conditions for pedestrians near many schools.
Unsafe driving behavior of school bus drivers	Multiple incidents were reported of school bus drivers speeding, running red lights, and braking harshly. Respondents described scenarios of bus drivers letting children sit on top of seat back rests and having a student exit the school bus to press the pedestrian walk light button for traffic light to change. Many also cited these problems when explaining why they choose not to send their children to school by school bus.
Pedestrians jaywalking and entering the street between cars	A common problem reported around many of the schools was the failure to use designated crosswalks by both students and parents. Respondents noted that often this occurs due to convenience-seeking, a lack of proper crosswalks, or the inadequate removal of snow.
Traffic congestion in the drop-off and pick-up areas of schools	Congestion occurs during drop-off and pick-up times because schools lack a proper drop-off and pick-up area. In other instances, this challenge was also reported to occur where there are a high number of parents driving their children to and from school.
Travelling to and from	Survey respondents noted that they lack confidence in the safety of their children's journeys to

ISSUE/CHALLENGE	DESCRIPTION
school bus stops perceived as unsafe for children	and from school bus stops due to factors such as vehicle traffic and missing or inadequate crosswalks. Some respondents noted that they only let their children make their journey to the bus stop when supervised by adults.
High windrows and snow piles on the street and by sidewalks	A common problem reported by survey respondents was the inadequate removal of windrows along streets. They noted that this reduces visibility, takes away valuable parking around schools, and often blocks the ability of pedestrians to access sidewalks and crosswalks.
Unlit, uncontrolled, poorly visible crosswalks	Many crosswalks near, or on the way to schools were cited as being unlit, uncontrolled or poorly visible. This was often due to faded lines, lack of proper lights and signs, or being located at poor positions along the street, such as just after a major curve in the road.
Lack of parking for parents on or near school property	Many of the schools were described as lacking places for parents to park. This often was noted to cause double parking or parking in staff parking spaces.
Drivers running red lights and stop signs or driving the wrong way	Survey respondents reported that many drivers fail to follow traffic laws and reported many incidents where drivers ran red lights, failed to stop at stop signs, or drove the wrong way down streets.
School bus stops in poor locations or too far away from homes	Respondents noted that often school bus stops are located in poor locations, either on busy roads or too far away from the family's home. This was reported as a deterrent from choosing school bus transportation for their children.
Poor lighting and poor visibility on streets	Tight curves, a lack of lighting, and untrimmed trees were all cited by survey respondents as contributing to poor visibility on many streets in St. Albert.
Vehicles reversing in school parking lots	Due to congestion or lack of space, survey respondents reported that vehicles often reverse in school parking lots. This leads to confusion and congestion and endangers pedestrians who may be walking through the parking lot.
Collisions, or near-collisions that have previously occurred	Many survey respondents cited previous collisions or near-collisions in their responses. These incidents have attributed to the choice of transportation the respondents use and their perception of the safety of certain areas.
Unreliable school bus service	School buses not showing up on time or breaking down were common complaints of many of the survey respondents whose children take the school bus to school. They noted that sometimes drivers fail to stop at bus stops and expressed a general frustration over the lack of reliability in the system.
No crosswalk in place where needed	Crosswalks were noted as missing in several locations by survey respondents. These locations may be where it is convenient to cross, or where many people currently jaywalk.
Ice and snow on sidewalks and streets	Street and snow clearance was also cited as an issue for many of the survey respondents. They noted that ice and snow on the sidewalks and streets created dangerous conditions for both drivers and pedestrians.
Children exiting vehicles into traffic	Respondents noted that due to a lack of a drop-off area or parking, children often exit vehicles into traffic when being dropped off. This endangers children, as the drivers of moving vehicles may not see children exiting vehicles into the street.

ISSUE/CHALLENGE	DESCRIPTION
Potential dangerous strangers or trees obstructing views on way to school	Survey respondents also expressed concern over strangers their children may encounter on their way to school. This contributed to their reluctance to have their children walk or bike to school.
Illegal u-turns	A number of illegal u-turns were reported near schools by the survey respondents and was a safety concern for a number of them.
Children too young to travel alone	Many of the respondents attributed their decision to drive their children to school to the fact that they are too young to travel alone. They noted that once they were of a proper age that they would then allow them to walk or bike to school alone.

To be able to pinpoint the context and examples, parents were asked to list locations of concern. Survey respondents mentioned a total of 113 different St. Albert streets in their responses when describing traffic safety concerns. The streets that were most often mentioned shared similar characteristics such as high traffic volumes, occurrences of poor driver behavior such as speeding, dangerous or uncontrolled crosswalks or reduced driver visibility (i.e. tight corners). The streets most-often mentioned are as shown in FIGURE 3.8.

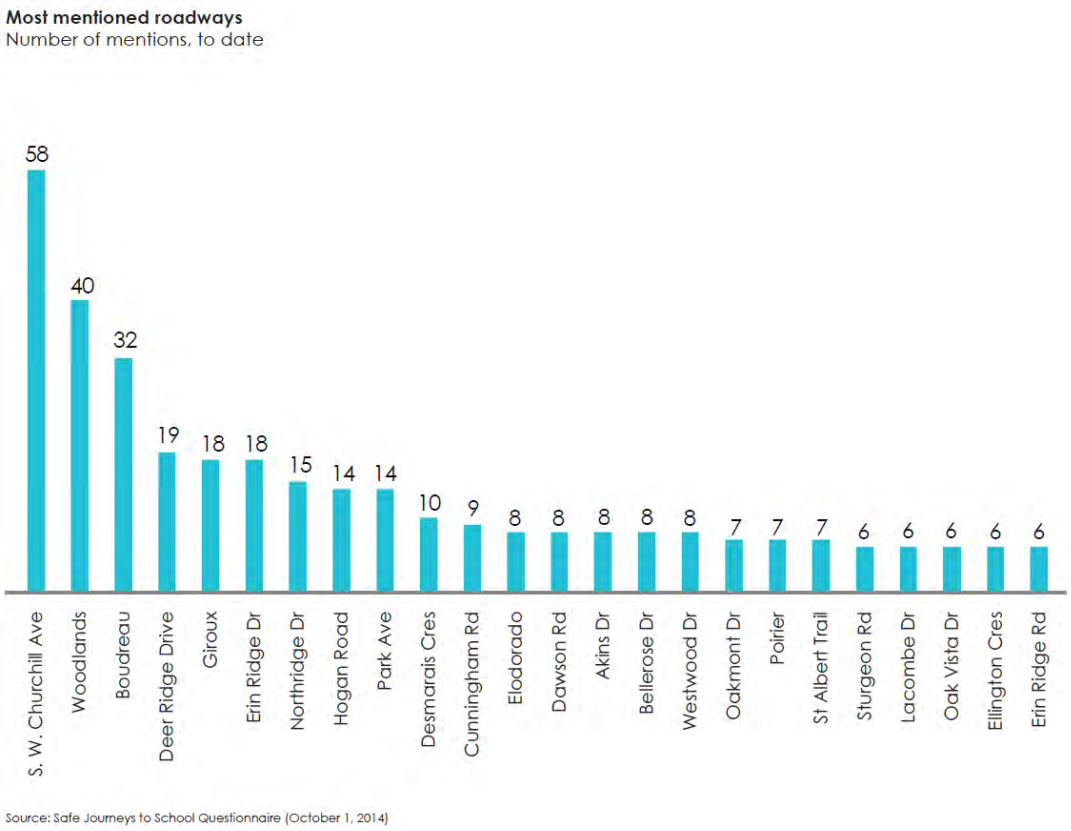


FIGURE 3.8 MOST COMMONLY MENTIONED STREETS WITH ISSUES

The frequent references to these roadways reflect, in part, the concentration of schools along these roads. Parent suggestions for improvements to the above issues and locations were reviewed by the project team, and represent one among many source of information towards the development of strategies to enhance traffic safety.

Some of the comments made by parents for the three most commonly referred to streets are as follows:

Sir Winston Churchill Avenue

Sir Winston Churchill Avenue was commonly referred to as busy and congested, with heavy traffic flows and confusing traffic signal and lane markings. The intersections of the avenue with Woodlands Road and Boudreau Road were highlighted as being particularly concerning. At these intersections, respondents reported drivers driving through crosswalks, drivers not looking while turning right, and multiple unlit crosswalks.

Woodlands Road



Woodlands Road was referred to by respondents as 'crazy' and congested, with unclear lane markings. The intersection of Woodlands Road and Woodcrest Avenue was indicated as a trouble spot. Respondents cited lack of visibility, lack of enforcement, and poor driver behavior as contributing factors to the close calls seen here. In addition, the hill leading up to Sir Winston Churchill Avenue was described as often covered in ice and snow in the winter, leading to unsafe road conditions.

Boudreau Road

Boudreau Road was most commonly described as "busy". The intersection with Page Drive was particularly concerning to the survey respondents. They noted that the pedestrian walk phase is very short; coupled with rush hour traffic and poor winter road conditions, this street is often difficult to cross due to sliding cars and drivers turning across the crosswalk. In addition, a bus stop along Boudreau was noted to be in a poor location as it is too close to the Page Street intersection, which often frustrates many drivers travelling behind the school bus.

Finally, interview questionnaire respondents were asked to share suggestions for improving school transportation safety for their children. The responses are summarized in FIGURE 3.9, and the three most frequently suggested enhancements for each of the four E's are described in TABLE 3.2.

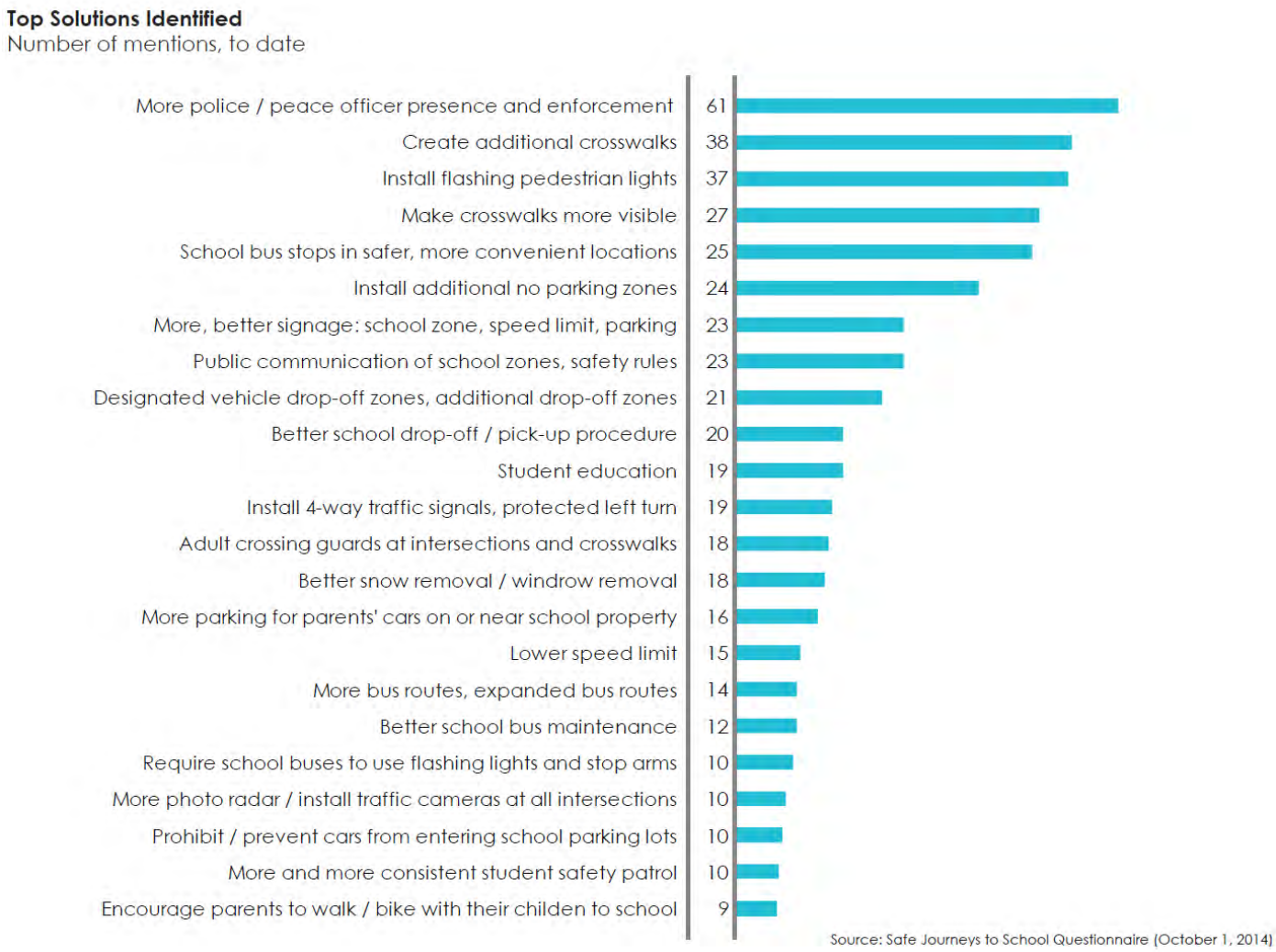


FIGURE 3.9 ENHANCEMENTS SUGGESTED BY PARENTS

While several suggestions were provided for each of the E's, parents were asked which of the E's they thought would be most effective. The responses, summarized in FIGURE 3.10, highlighted that:

- Parents have the most confidence in engineering solutions.
- Parents underestimate their own and other abilities or willingness to be positively affected by education, encouragement and enforcement.
- The distinction between encouragement and enforcement is not well-understood; otherwise parents would likely value encouragement more than enforcement.
- The RCMP focus group revealed that it is parents who are receiving most of the tickets, suggesting that enforcement itself may have a limited impact on parent driver behaviour, or that the violators who completed the survey are less self-aware.

TABLE 3.2 ENHANCEMENT MOST COMMONLY SUGGESTED BY PARENTS

ENGINEERING		
Create additional crosswalks Survey respondents noted that additional crosswalks are needed in multiple areas near schools in St. Albert. This includes on routes to and from the schools, over busy roads, and through school parking lots. Respondents hope that this improvement will curb the amount of jaywalking that currently occurs by schools, and keep children and cars safely separated.	Install flashing pedestrian lights At existing or new crosswalks, survey respondents often requested that pedestrian-activated flashing lights be installed. This could have the effect of making the crosswalks more visible and would also work as a signal to drivers that pedestrians are waiting to cross.	Make crosswalks more visible Respondents suggested that existing crosswalks be made more visible by installing lights and signs or by repainting current crosswalk lines. They expressed a need to make drivers more aware of where crosswalks are located along the streets of St. Albert.
EDUCATION		
Educate drivers about school zone locations and safety rules Respondents expressed a need to publicly communicate safety rules and location of school zones for each respective school. This communication would not only target parents but also the general public and those who live nearby. They noted that this would help alleviate any confusion on the part of drivers through school zones regarding how to drive or where to park.	Educate students on traffic safety Student education was also stressed by the survey respondents. They reported a need for students to be aware of basic traffic laws such as vehicle right-of-way and to know how to safely cross streets and walk to school.	Educate drivers on safety patrol processes and traffic rules Survey respondents also cited a need for general education of drivers on basic traffic rules such as yielding to pedestrians and on safety patrol processes and signals. They noted that many drivers do not know what many of the safety patrol hand signals mean.
ENCOURAGEMENT		
Encourage parents to walk or bike with their children to school Survey respondents suggested that parents be encouraged to walk or bike with their children to school in an attempt to reduce the amount of vehicle traffic. Suggestions to achieve this included awareness campaigns and incentives such as gift cards.	Encourage parents to organize walking or cycling school buses Another solution suggested by respondents was to organize walking or cycling 'school buses' as a way to encourage more parents to have their children walk or bike to school. By travelling in a group, the children would be more visible and would have safety in numbers.	Promote school busing with strategies such as equal or decreased service fees Respondents also noted that there is a need to encourage the use of the school bus service. To accomplish this, many suggested offering reduced or equal service fees to decrease the cost of busing.
ENFORCEMENT		
More police/peace officer presence and enforcement The most commonly mentioned solution for the challenges relayed by the survey respondents was to increase the amount of police or peace officer presence and enforcement. This included strategies such as increased photo radar and heftier ticket fines. In particular, respondents cited a need for more presence in school zones, and more enforcement of speeding and illegal parking.	Better school drop-off and pick-up procedure Survey respondents requested that a better, more efficient drop-off and pick-up procedure needs to be put in place and enforced at many of the schools. Suggestions to accomplish this included establishing a one-way flow of traffic, having police or peace officers on-site to watch for improper parking, and placing adult traffic monitors in the drop-off area to direct traffic.	Adult crossing guards at intersections and crosswalks A common suggestion from survey respondents was to engage volunteer or paid adult crossing guards at the intersections and crosswalks near the schools. They noted that drivers may pay more attention to, and may more readily listen to adults than to students. Engaging adults to patrol streets would also increase the availability of crossing guards, as a limited number of students participate in the safety patrol program and they are only available to patrol for a limited time before and after school.

It was notable that "more police officer presence and enforcement" was by far the most common parent suggestion (FIGURE 3.9), and yet parents also say that it's only about as effective as engineering solutions (FIGURE 3.10). This may suggest:

- A disconnect between "desired" and "known" solutions;
- Measures that "feel" more comfortable (e.g. police officers) than other proven sustainable solutions;
- The lack of familiarity with possible engineering solutions (i.e. asking for engineering solutions but don't know what they are); and
- Parent requests cannot be mechanically applied to policy decisions.

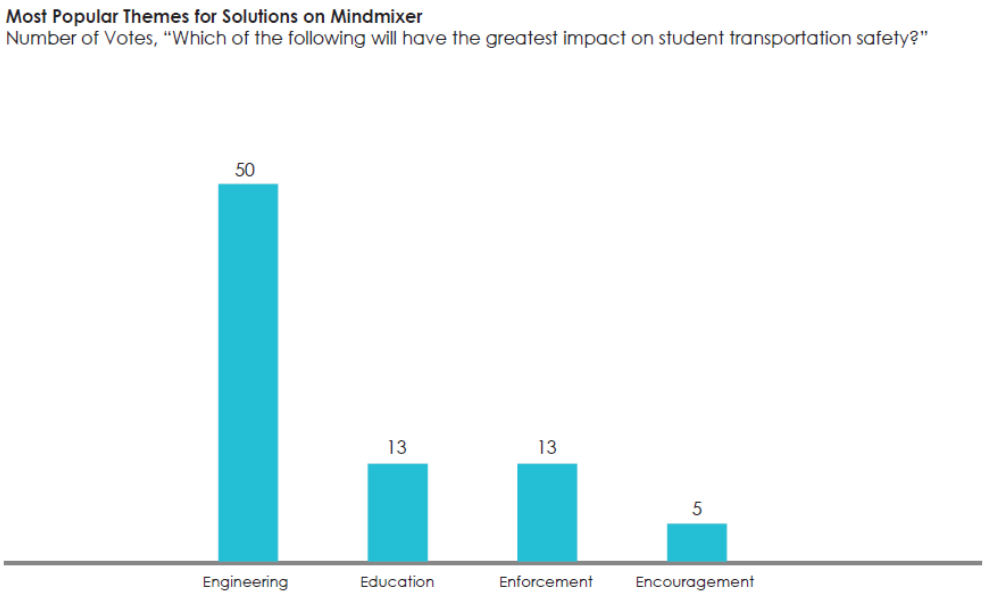


FIGURE 3.10 PERCEPTION OF EFFECTIVENESS OF TYPES OF STRATEGIES

3.4 Student Engagement Questionnaire

The student survey questionnaire was administered by teachers in the classroom, as a voluntary exercise. Responses were received from 1,773 students between Grades 4 and 12. This represents nearly 13% of all students at schools located within the City. Responses were received from 12 of the 27 schools (44% of schools). At some schools, majority of the students completed the questionnaire; at several of the others, a handful of grades were assigned by the Principal to complete the questionnaire. These distributions were used by the project team to represent the overall student population.

Participation

The response rate by Grade and School is summarized in TABLE 3.3.

TABLE 3.3 PARTICIPATION BY SCHOOL AND GRADE

School	Total Number	By Grade								
		4	5	6	7	8	9	10	11	12
Alexandre Tache	81				31	18	32			
Vincent J. Maloney	299				104	55	140			
Ecole la Mission	66	22	28	16						
Robert Rundle	81	21	26	34						
ESSMY	331				88	67	91	38	16	31
Lorne Akins	368				133	119	116			
Albert Lacombe	75	26	28	21						
Neil M Ross	72			72						
Ecole Father Jan	33	31		2						
Sir George Simpson	99				99					
Sir Alexander Mackenzie	103		92	11						
Leo Nickerson	165	95	31	39						
Total:	**1,773**	**195**	**205**	**195**	**455**	**259**	**379**	**38**	**16**	**31**

The results were aggregated separately by grade group. Different ages have different learning objectives, cognitive abilities, different afterschool programs, and different levels of dependency on their parents for transportation. The grade groupings are as follows:

- Grade 4 to 6
- Grade 7 to 9
- Grade 10 to 12

The groupings also reflect the grades available at particular schools in St. Albert and regulations at the Provincial level.

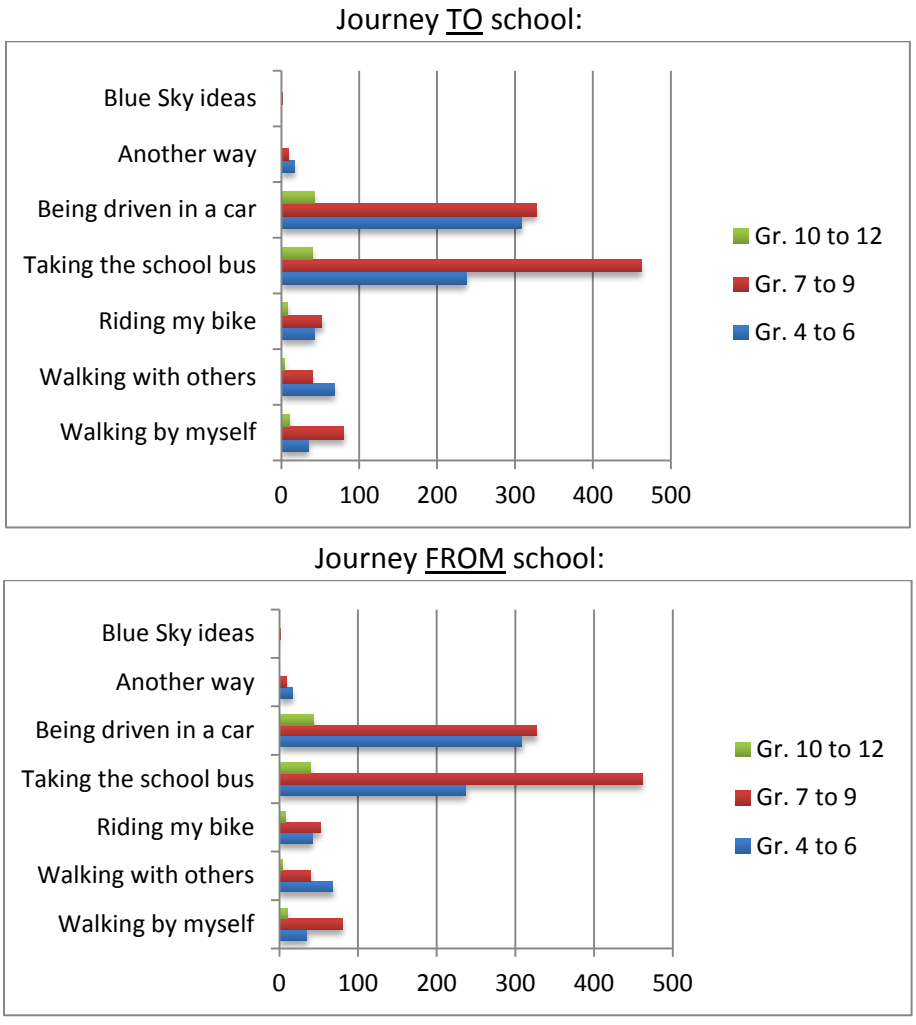
Travel Mode Choice

The first couple questions were regarding mode choice and the reasoning. The results by grade group are summarized in FIGURE 3.11 (for both the journey *to* school and the journey *from* school), and are discussed as follows:

- Grades 4 to 6: The majority of students are driven to school. An equal proportion take the bus, while a smaller group reported that they walk alone or with others to school. Overwhelmingly, the respondents noted that their choice was influenced by factors of convenience, such as parents' work schedules or distance to school. There were no notable differences in transportation mode by grade level. The majority of the respondents also indicated that during inclement weather conditions, active transportation modes are forgone for the school bus or a private vehicle. Smaller, yet similar numbers in each grade reported still walking or biking to school.

- Grades 7 to 9: School bus ranked the highest in use amongst the student's surveyed. A similarly large group also reported being driven to school. In addition, a sizeable amount (just fewer than 200 students) reported that they either walk or bike to school. Convenience was key in those mode choices, while length of trip was also an important factor. During inclement weather conditions, the respondents often noted that they forego active transportation for the school bus or private vehicle. However, a small proportion indicated that they still walk and bike to school during those times.

- Grade 10 to 12: Private vehicle and school bus ranked as the top modes of transportation. A smaller number indicated that they walk or bike to school. Convenience and fun were the top variables mentioned that influenced transportation mode choice. The majority of the students surveyed noted that during inclement weather conditions they forgo active transportation for private vehicle or school bus. A smaller number did state that they still walk or bike to school.



Note: Blue Sky Ideas = "out of the box" ideas (i.e. unique travel modes)

FIGURE 3.11 JOURNEY TRAVEL MODE CHOICE (BY GRADE GROUP)

The following overall conclusions are evident from this analysis. Several of these confirm the trends from the parent surveys:

- Bus and private vehicle were the dominant modes of transportation.
- Slightly more elementary and high school students travel by private vehicle; while substantially more junior high school students travel by bus than by car.
- Among the active modes, walking rates are slightly more than double than cycling rates
- Among the walkers, the younger students walk more often with others and the older (junior high and high) walk more frequently by themselves than with others

FIGURE 3.12 shows the mode share trends spatially, on a percentage bases and the differences from grade to grade.

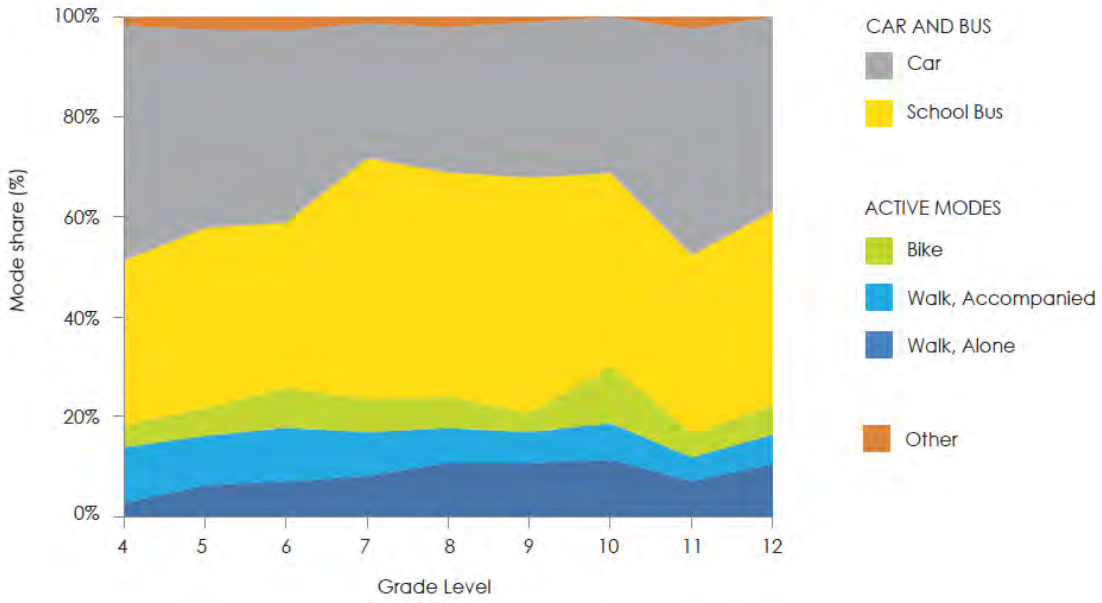


FIGURE 3.12 PERCENTAGE MODE SHARE BY GRADE

Active mode share in high schools is lower than elementary schools because they tend to have larger catchment areas and more programs that students travel across the City to access. The only high school students to complete the questionnaire were from ESSMY; therefore, other trends may be related to school-specific factors. The share of active modes is highest for Grade 10, based on ESSMY students, at about 30%, and decreases from Grade 10 to Grade 12. Other than this and the above conclusions by grade group, this plot reveals, for each mode:

- Car: Rates are highest among the younger grades and Grade 11 students. The increase in Grade 11 is likely due to self-driving.
- Bus: Mode share is highest in Grades 7 to 10.
- Bike: Mode share is relatively consistent across grades, with a higher proportion in Grade 10 and then a lower proportion in Grade 11 and 12. Therefore the drop in bicycle-share is likely proportional to the increase in self-driving at ESSMY.

- Walk: Mode share is relatively constant until Grade 10. Walking rates should be increasing with age and cognitive ability. The lack of an increase may be due to the greater distances to junior high schools compared to elementary. Although most elementary students walk together, the proportion reduces to about half between Grade 4 and 8.

The reasons for these mode choices were explored in the survey to highlight possible barriers and opportunities. Most choices were made on the basis of convenience, for every mode. Other conclusions from these responses are as follows:

- *Fun (*and not *Safety*) was the key reason students walk to school together;
- The main reasons students ride their bike were *fast* and *fun*;
- Far more students get driven in the morning due to weather, compared to afternoon;
- Several of the students who choose *other way* do so because it's *fun*;

The role of weather in mode choice was more closely explored. FIGURE 3.13 suggests that it plays a significant role; with only 16% continuing to use active modes during poor weather.

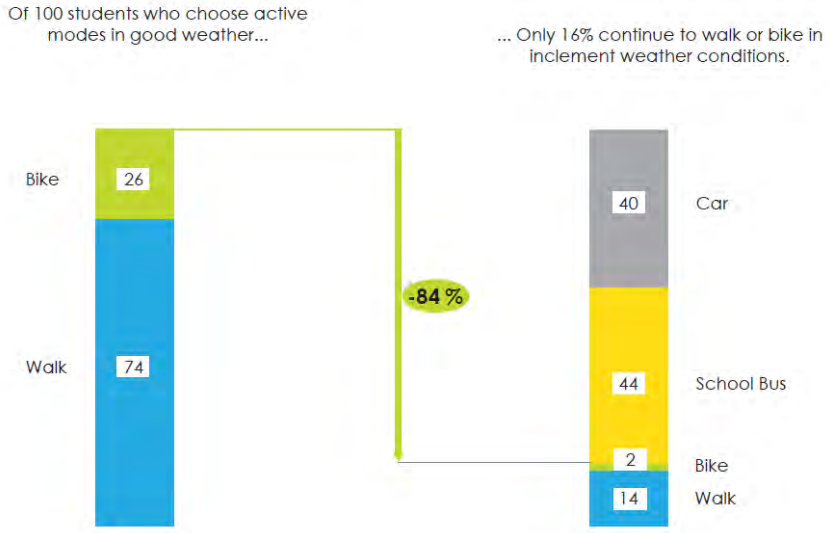


FIGURE 3.13 ROLE OF WEATHER IN MODE CHOICE DECISIONS

Issues and Solutions

The remaining questions were open-ended, regarding the issues or challenges that students face during their journey to or from school. Each response was reviewed and analyzed, and aggregated as shown in FIGURE 3.14.

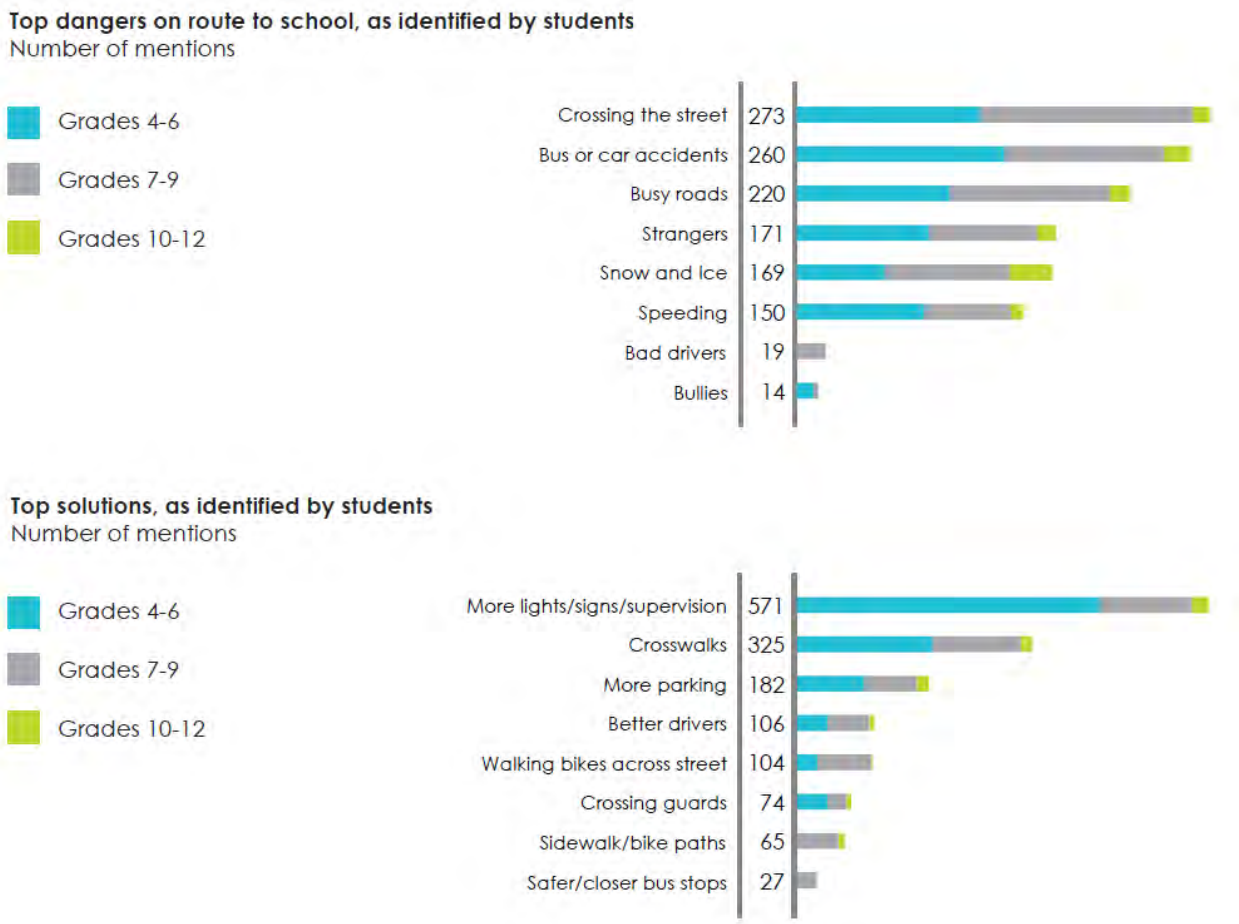


FIGURE 3.14 MOST COMMONLY SUGGESTED ISSUES AND SOLUTIONS FOR TRAFFIC SAFETY

Crossing the street, *bus or car accidents*, and *strangers* were the top three dangers most commonly listed by the students surveyed. Concern over *strangers* dropped as the age of the students surveyed increased, while *bus or car accidents* was a major concern across all the age groups.

Improved road safety was a common suggestion for encouraging active transportation. *Living closer* and *getting to and from school faster* were also common suggestions by the two youngest age groups – Grades 4 to 6 and Grades 7 to 9. The addition of more lights, signs and supervision to improve overall safety was the most suggested solution across all the age groups. Adding more crosswalks and parking were also suggested often, with requests for more crosswalks declining with increasing age. By far, *better drivers* and *less traffic* was often cited as an improvement that could be made to each student's individual journeys to school. *Avoiding ice and snow* was a commonly suggested precaution by all age groups as well. The two youngest age groups also often suggested *practicing better behavior on the school bus*.

Comparison of Student Survey Findings to Parent Survey Findings

To provide insight into possible education and encouragement measures in particular to target to each group, differences in risk perception by parents and students were compared.

Overall the comparative analysis indicated that student survey confirmed and built upon the findings of the parent survey. A handful of notable distinctions were identified. Some of the differences may be attributed to slight differences in the survey questions and survey design.

- Participation by school: Several of the schools with the highest parent response rates also had higher student response rates: e.g. Ross, Simpson, Nickerson, Maloney and Mackenzie. However, two of the three schools with the highest parent response rates did not participate in the student survey (Martin and Poburan); and the two schools with the highest student response rates (Akins and ESSMY) had low to average parent participation rates.
- Participation by grade: The primary school grades did not participate in the student survey. It was not aimed at them due to the expected amount of assistance they would require to complete it. The grades with the highest participation in the parent survey were younger (Grades 4-6) than in the student survey (Grades 7-9).
- Mode choice: Because of the skew in the student survey response rate towards junior high school students, the proportion of school bus trips is higher
- Leading reasons for mode choice:
    - Parents: 1)Convenience, 2)Safety and 3)Speed
    - Students: 1)Convenience, 2)Speed, 3) Fun (Note: *Safety* ranked lower than in the parent survey)
- Influence of weather: The parent survey indicated that nearly 50% of students who walk or bike in the winter would no longer walk in inclement weather; in the student survey nearly 84% would no longer walk or bike. The cause of this discrepancy is likely due to differences in the question formulation between the two surveys as well as the subjective assessment of what defines “inclement weather”.
- Issues: The top three issues were identified by each group as follows:
    - Parents: 1)Distracted driving and failure to see pedestrians, 2)Speeding, and 3) Intersection crossing safety
    - Students: 1)Crossing the street, 2)Bus/car accidents, and 3)Busy roads
- Solutions: The top three solutions suggested by each group are as follows:
    - Parents: 1)More enforcement, 2)Additional crosswalks, 3)More controlled crosswalks
    - Students: 1)More crosswalk controls, 2)Additional crosswalks, 3)More parking
    - The students also mentioned a few ideas that would motivate them to walk or cycle more, that were not as prominent in the parent responses, including: *more people walking their bikes across the street*; and *more sidewalks and pathways.*


8:00-16:30
MON-FRI
DROP OFF/
PICK UP
ONLY
08:00-16:00
MON-FRI
SCHOOL DAYS ONLY


Non
Fiction
Wild Rose Elementary School

4.0 ENGINEERING REVIEW FINDINGS

The engineering reviews consisted of a City-wide collision analysis and reviews of each of school. This section highlights the findings of the collision analysis and presents some of the key findings and common issues noted during the site visits. Detailed findings for each of the schools are presented in the respective SJ2S Plan for that school, which can be found in the Appendices.

The engineering site visit for each school was conducted soon after the corresponding open house. Our team investigated issues that participants identified in the open houses (summarized in Section 3.0 of this report). In some cases they were validated by the study team; in other cases, they were different than described, taking into account that some issues may be more pronounced on some days than other days. All findings were documented by the study team and a balanced and objective discussion presented for each school.

4.1 Collision Analysis

Collision history was often reviewed as an indicator of relative safety, particularly when other safety indicators are not available. Learning about the causes of collisions can assist road agencies in deploying interventions. There are a number of less controllable factors that contribute to collisions (such as weather, impaired driving and fatigue). A holistic 4E and Safe Systems approach to traffic safety addresses how these issues are managed.

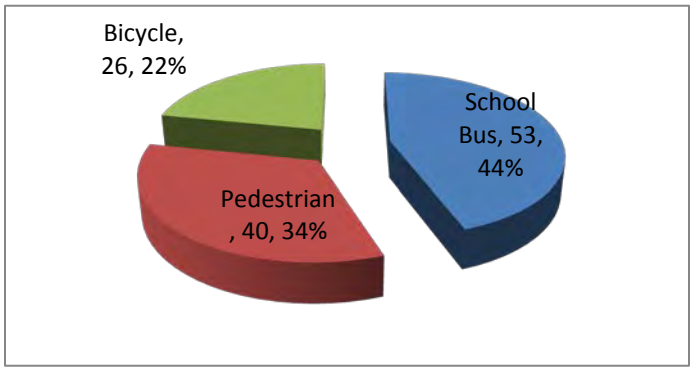
To identify high level trends in school-related collisions, City data on collisions involving pedestrians, cyclists and school buses were anlayzed. The dataset used is only a proxy, due to:

- The difficulty of separating school-related from “other” trips; and
- The difficulty of separating school-related collisions on a locational basis due to issues of accuracy in locational data combined with the high-density of schools.



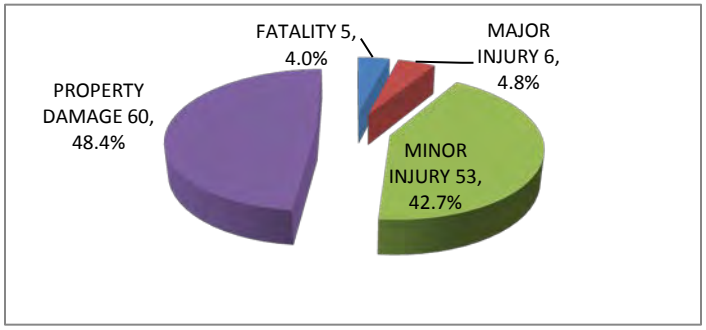
The review of pedestrian and cyclist collisions will include a combined analysis of time and location, to help identify collisions that likely occurred during a journey to/from school.

The following high-level trends are based on pedestrian, bicycle and school bus collisions reported in the City between January 2009 and April 2014 (a period of 5 years and 4 months).



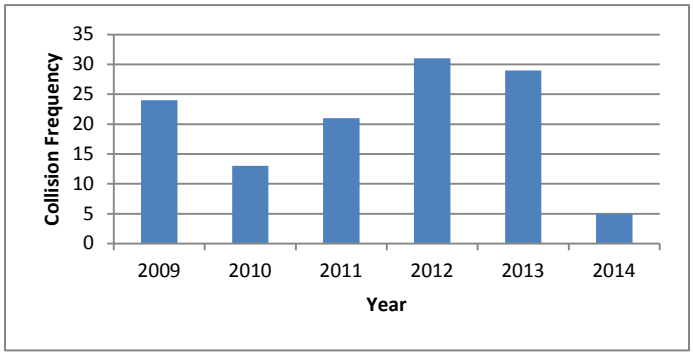
Transportation Mode

Over half of the collisions involved school buses. About one-third involved pedestrians and just over 20% involved bicycles. This distribution partially reflects the prevailing exposure factors (most notably the modal split), but highlights the opportunity for improvement for all three modes.



Severity

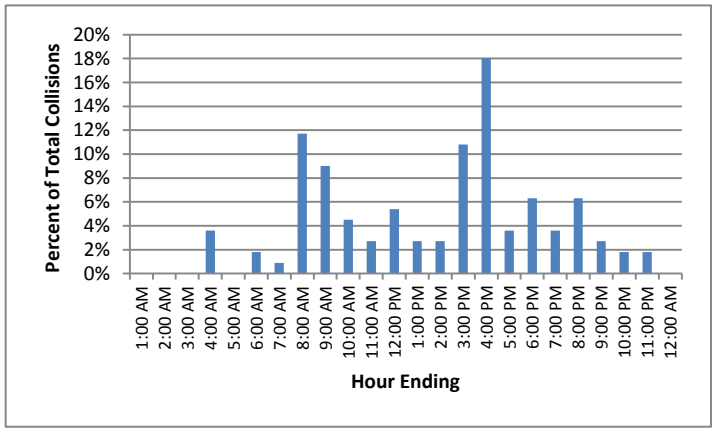
Approximately half of the collisions resulted in injury and half in property damage only. The majority of injury collisions resulted in minor injury only. The majority of the injuries likely involve pedestrians or cyclists, who typically sustain injury when involved in a collision.



*2014 collisions in 2014 are January-April only

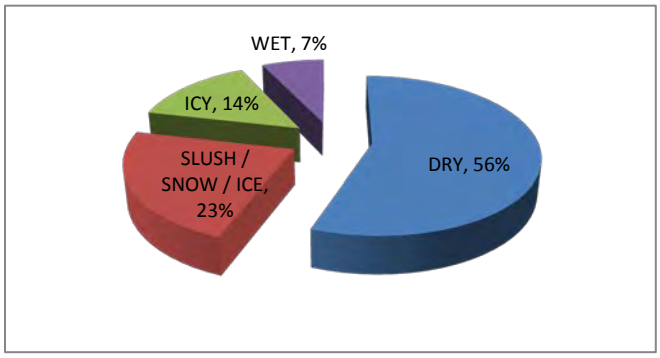
Annual Trend

The trend in collision over the past five years indicates a drop in 2010 and an increase in recent years. This is likely related to growth and to improvements to school bus safety implemented in 2009-10. City staff can provide further insight as to whether this reflects collision trends involving all transportation modes.



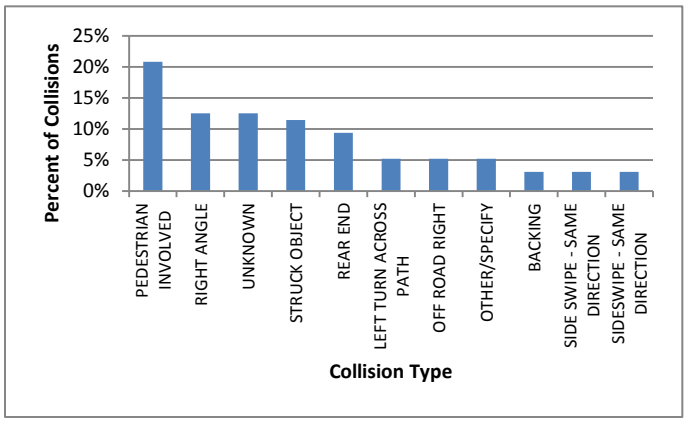
Hourly Distribution

The hourly distribution reveals that most collisions occur between 7 and 9 am, and between 2 and 4 pm, with a slight noon peak. A closer analysis indicated that a large proportion of these occur close to typical school start and end times, but some of them also reflect the peak in non-school-related travel. Educating the public about this trend may encourage increased caution during these times.



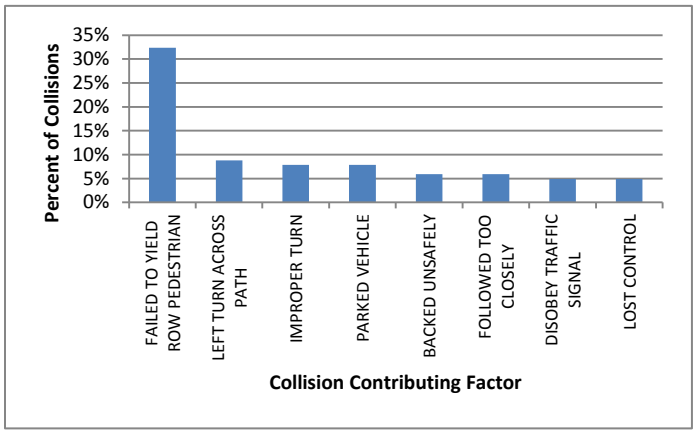
Road Surface

Nearly half of the collisions for which the road surface condition was indicated were reported during adverse surface conditions. During these conditions, stopping distances are greater and conditions are much more slippery for pedestrians and cyclists; for example they may need to enter the travel lanes if sidewalk conditions are slippery.



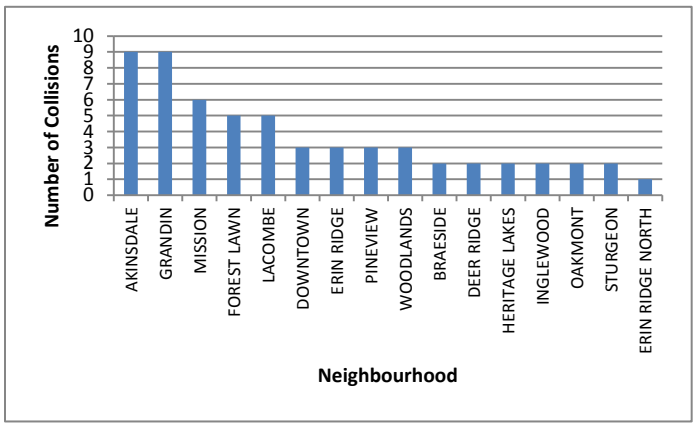
Collision Type

The leading collision types, as indicated in the "Primary Event" on the police report, are shown here. Some of the "struck object" collisions may also involve cyclists and pedestrians. Most of the other types are likely related to school buses, or other vehicles in pedestrian/cyclist collisions (and not pedestrians or cyclists themselves). No trends emerge from this analysis.



Improper Driver Action

The improper driver action (i.e. actions other than "driving properly"), as shown on the police report for "Driver 1 Action" is shown here. The most common improper driver action was "Failed to Yield to Pedestrian" (one-third of collisions). This suggests that most pedestrian collisions occur at intersections or marked crosswalks.



Neighbourhood

Just over half of collisions were reported within a neighbourhood (i.e. on a collector road or local road). The distribution by neighbourhood indicates that at least one collision was reported in each neighbourhood, with up to 9 collisions in the communities of Akinsdale and Grandin. This is likely related to the number of schools as well as the number of pedestrian crossing movements.

More detailed plots of the collision data by location are shown for pedestrians and cyclists on the left map and for school buses on the right map of FIGURE 4.1. These "heat maps" distinguish the specific locations (i.e. intersection or block) where more than one collision was reported in the 5 years and 4 months between January 2009 and April 2014.

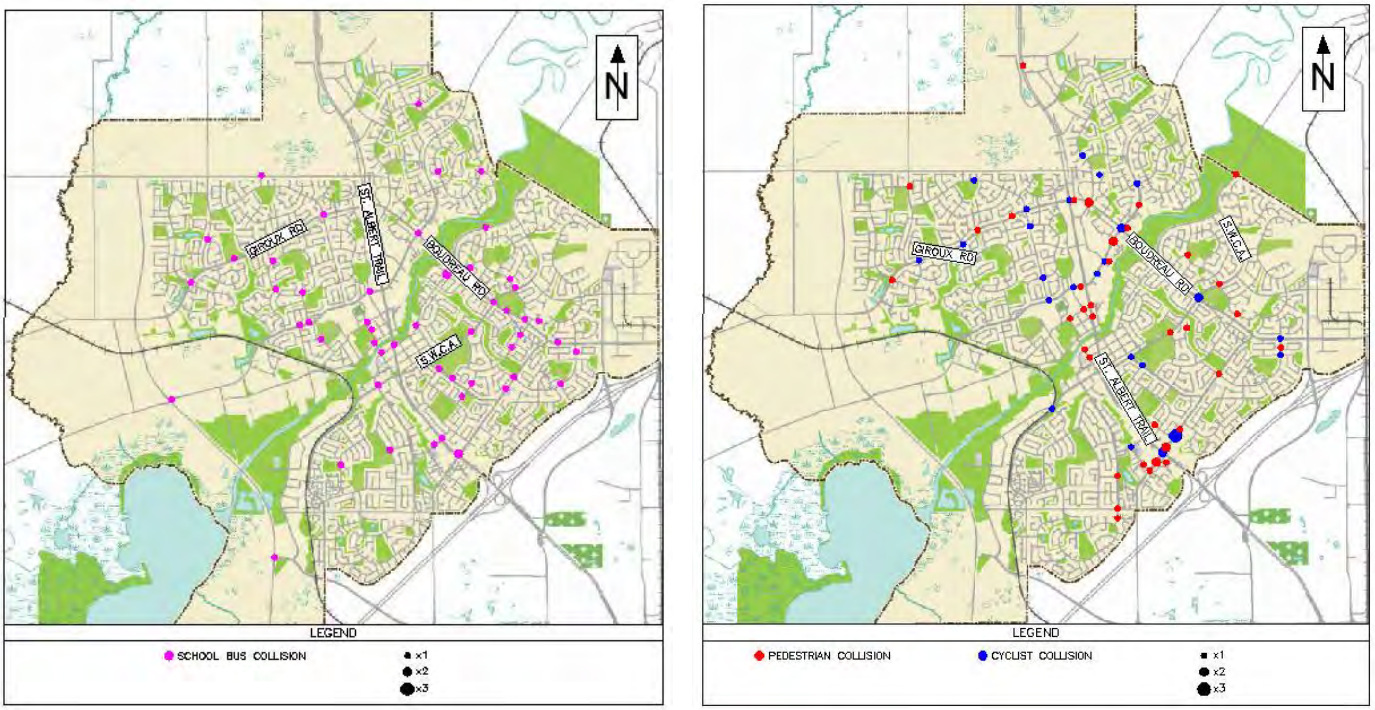


FIGURE 4.1 DISTRIBUTION OF PEDESTRIAN, CYCLIST AND SCHOOL BUS COLLISIONS ACROSS THE CITY ROAD NETWORK

The following trends were noted from the spatial analysis of these collision types:

School Bus Collisions

- Majority occur on arterial roads and involve other vehicles (not pedestrians or cyclists).
- Clusters of collisions occur along curved roadways and roads with relatively steep grades
- One location was the site of more than one collision: the St. Albert Trail and Gervais Road/Hebert Road intersection.

Pedestrian and Cyclist Collisions

- One location saw 3 bicycle collisions over 5 yrs. and 4 mo.: Hebert Rd & Sunset Blvd
- A handful of other locations were the site of two collisions
- Several collisions were reported at the following roadways/locations:
    - St. Albert Trail and Gervais Road/Hebert Road
    - Sir Winston Churchill Avenue, between St. Albert Trail and Boudreau Road

The possible causes of collisions at locations located close to schools are discussed in the reports prepared for each individual school; the following is an overview.

- 43% to 63% of school bus related collisions occurred on snowy/icy road conditions (12% to 16% is typical for all vehicle types). To reduce the risk of school bus collisions in winter, the use of winter tires and other maintenance practices might be reviewed.
- A common factor in bicycle collisions appears to be cyclists riding their bikes through crosswalks, often without stopping. “Cyclist Dismount” signs and education may be required at locations with bicycle crossing activity.
- At Hebert Rd & Sunset Blvd, landscaping on the mall side corners may restrict sight lines, adding to the risk for pedestrians and cyclists crossing.
- A common factor in pedestrian collisions appears to be drivers not seeing or reacting to pedestrians in crosswalks. Highly visible crosswalk lines and signs other crosswalk enhancements described in this report, and pedestrians wearing highly visible clothing at night may reduce these risks.
- The crosswalk at the northbound to eastbound right turn from St. Albert Trail to Hebert Rd is quite far around the curve radius and may be outside the drivers’ cone of vision. The crosswalk may benefit from advance pedestrian crosswalk warning signs, or else may need to be relocated.
- A significant number of pedestrian and cyclist collisions occur at driveway intersections. It is critical to ensure proper visibility of sidewalk and crosswalk continuity through driveways. Property owners may be encouraged to install stop signs facing drivers exiting their properties.

4.2 General On-Site Observations

The following general observations were made by the site visit teams:

- Each school has a unique layout and circulation pattern. As expected, several of the issues at each school are a function of the school site planning and design. The issues at each school reflect planning and design practices that were in place at that time. For example, older schools were not designed to effectively accommodate the current fleet of school buses. The length of school frontage, the access control from major roads and the availability of on-street parking are among the many factors that vary drastically among the schools, and were observed to influence safety and operations. Therefore, while certain principles can be kept in mind for each school, how they are manifested in terms of infrastructure and operational requirements will be different for each school.

- Most students are transported by bus, and pick-up/drop-off operations at the schools are well coordinated. At some of the schools, the majority (up to 75%) of students are transported by bus. Therefore, there could be 12-14 buses during each pick-up / drop-off period. When the buses arrive, the operational characteristics of



the school completely change. Buses typically form a barrier between the front of the school and the rest of the PU/DO area or parking lot, which changes walking paths as well as vehicle movements. However, it was observed that they typically arrive and leave in fleets, reducing the number of parking and unparking manoeuvres; and school staff were actively involved in liaising between bus operators and students; for example, directing them to leave when all students were on board. However, the "wall effect" that is created by a long queue of buses sometimes led to students suddenly emerging from the narrow spaces between buses into the parking lots and conflicting traffic.

- Good compliance with reduced speed limit during pick-up / drop-off times. It was noted that most vehicles were travelling within or close to the speed limit during peak pick-up and drop-off hours. This demonstrated that there was a general awareness of the risks present during these peaks and recognition of the need to slow down, even during uncongested conditions. This may suggest that the afternoon peak in collisions between 3 and 4 pm may be related to factors other than speed (e.g. volumes, other driver/pedestrian behaviours, site-specific issues). It was noted that further from the peak in activity (for example, after 9 am), speeds were higher on average, in spite of the 30 km/h limit still being in effect.

- Relatively few cyclists. It was apparent during the site visits, that even in June during clear weather, the proportion of cyclists was relatively low (on average less than 5% of trips). While this is a function of the availability of safe cycling facilities and a number of other factors, it represents an opportunity to further promote active transportation and to provide or improve the facilities to support a modal shift.



- Most schools reaching on-site parking capacity. At most of the schools visited thus far, it was reported (and in most cases validated) that the parking supply was insufficient. This in turn limits the available space on site for short-term visitors parking. It may also represent an opportunity for staff to explore alternate modes of transportation.

- Generally good respect for bus zones. With a few exceptions, it was noted that passenger vehicles rarely used the space allocated for buses. This suggests generally good respect for the priority given to buses. However, this behaviour often extended to outside of the peak bus hours, which may represent an opportunity to more optimally utilize the space outside of peak bus hours.

- Traffic peaks very brief in duration. Site visits were typically 2.5 hours in length. The school pick-up/drop-off peak was typically 30 minutes and more often 10-15 minutes. Therefore, although operations are chaotic, it is for a very short duration. Although staggering start/dismissal or PU/DO times is already happening to some extent, this reveals a possible opportunity to further explore this strategy. Opportunities for temporary measures or (expanded) patrolling are appropriate for managing short/distinct peaks than significant changes in road infrastructure.

- Custom signage and traffic control devices. A mixture of signage and traffic control devices is provided in the parking lots or near the driveways at different schools in support of traffic safety. The inconsistency in messaging suggests that these were prepared by the school to address local issues. However, some of the signs are unclear or poorly maintained, and the signs near the driveways may in some cases compete with roadway signage.

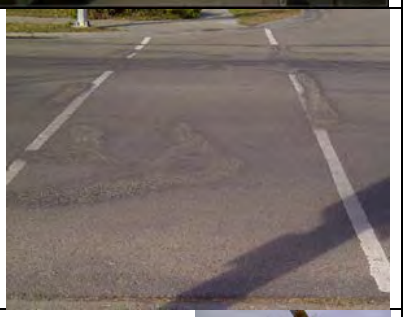


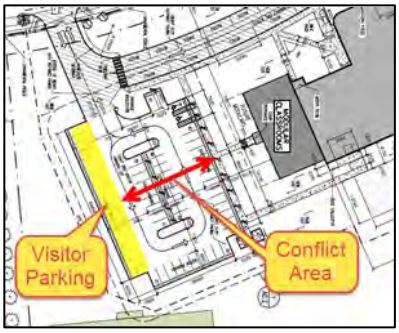
4.3 Common Issues

Some of the more common issues (observed at several locations), are summarized in TABLE 4.1. These highlight opportunities to both enhance safety and move towards greater consistency in safety treatments among the different schools.

TABLE 4.1 COMMONLY OBSERVED SCHOOL SAFETY ISSUES

Issue	Description
1. Short Term Demand For Pick-Up Drop-Off Exceeds Facilities	The demand for short term parking and pick-up/drop-off facilities for parents picking up and dropping off the students exceeds the supply on-site and adjacent the school. This leads to excessive congestion in front of the school (double parking/use of the travel lane), parking adjacent or on crosswalks, and within bus loading areas. In favourable weather, some parents are willing to park further away but during winter conditions demand adjacent to the school is worse. 

2. Pedestrians Jaywalking In Front Of School	At many locations, students were observed crossing to/from the school at a location other than a crosswalk. In some cases this was encouraged by parking being available opposite the school and the lack of a marked crosswalk in the vicinity. Students would walk directly to/from their vehicle parked on the other side of the street. Pedestrian movement outside of crosswalks (jaywalking) is less predictable and can have inferior sight lines. 
3. Parked Vehicles Blocking View Of Pedestrians	Vehicles stop or park too close to crosswalks within the school zone which severely limits the sight visibility between motorists and pedestrians crossing the road. In some cases, the existing no stopping signs and curb markings are placed too close to the crosswalk; in others, motorists are ignoring the signs and markings. 
4. Poor Crosswalk Awareness / Compliance	There is reported general non-compliance at crosswalks located on routes to schools which could be attributable to poor motorist awareness and/or driver behaviour. Crosswalk conspicuity is lacking based on side mounted signage on multi-lane roadways and thin, worn-out parallel crosswalk markings. 
5. Speeding In School Zones Outside Peak Periods	During the peak pick-up and drop-off periods the congestion generally regulates the speeds within school zones. Outside of the peaks, speeds were observed and reported in excess of the reduced 30 km/h speed limits. 
6. Inefficient Use Of Pick-Up And Drop-Off Facilities	For those schools that have a zone designated for pick-up and drop-off, whether on-site or on-street, parents will often misuse the zone by parking and walking into the school or visiting with other parents. This ties up the prime pick-up/drop-off location and prevents it being used by others. A variety of methods of signing the space is used, including some signage that allows parking. 
7. Winter Conditions Impact Accessibility	Although not observed during fall visits, comments were received regarding the impact of winter conditions around school sites. Windrows block accessibility from parked vehicles to sidewalks, and narrow lanes on school grounds – contributing to students walking in travel lanes, falling on the road and getting hidden behind windrows. 

8. Pedestrian And Cyclist Routing Between Street And School	In many schools that have parking or loading areas in front of the school, there are no sidewalks that provide a connection from the street sidewalk to the school building without walking or riding through the front parking lot or loading area. This creates vehicle-pedestrian and vehicle-cyclist conflicts, both in the parking lot as well as at the driveway entrances, that could be alleviated by keeping pedestrians to the outside of the pavement. 
9. Pedestrian Conflicts In Parking Lots	Many school parking lots have spaces designated for staff and for visitors. In some cases including the proposed new schools, the staff parking is located closest to the school building whereas parents with students have to walk through the parking lot to the school. This occurs during the peak pick-up / drop-off activities where vehicles are continually pulling in and backing out of spaces. Staff members typically arrive earlier than the peak drop-off and leave later than the peak pick-up; therefore, they encounter fewer pedestrians than parents or visitors. 
10. Conflicts Between Bus And Parent Loading Activities	At many schools, buses and vehicles were notice to occupy the same lane. This can result in the lack of capacity for buses as well as the need for buses to pull out from behind stopped vehicles, creating more conflicts. It is acceptable for buses and other vehicles to use the same space, but preferably not at the same time. Buses should have priority so that the high volume of students are dropped off/picked up in the best location possible. 
11. Inconsistent Application Of Standards	Signs regulating curb space vary both on and off site possibly causing motorist confusion. In addition, old TAC standard signs (shown in photo) have yet to be updated, including examples of the old-style overhead flashers. Some of the old TAC standards provide very small text, are more difficult to understand and are less visible. The feasibility of updating these is likely already being considered by the City. 
12. Aggressive / Inappropriate Driving Behaviour	Many safety issues result in school zones due to inappropriate driving behaviour that is a result of parents being in a hurry, unaware of the driving rules, or just not respectful of other vehicles and pedestrians. U-turns, stopping in travel lanes, texting and driving, and speeding are all driver behaviour issues.

Strategies to address each of these issues are provided in Section 6.0 of this report.

4.4 School-Specific Issues

Comprehensive reviews were conducted for each school, based on the parent input received via the open house public workshops and the survey questionnaires, student input through questionnaires, school staff and stakeholder input through focus groups, and team observations of road user behaviour during peak pick-up/drop-off activities as well as off-peak periods. A "safe journey to school plan" was prepared for each school, listing issues and strategies and suggesting implementation responsibilities.

A sample of issues is presented in in TABLE 4.2. Engineering, educational, enforcement and encouragement strategies developed by the project team to address these issues are documented in Section 7.0 of this report.

TABLE 4.2 SAMPLE OF SCHOOL-SPECIFIC ISSUES

SCHOOL	KEY ISSUES
Richard S. Fowler Catholic Junior High School	• Short Demand For Pick-Up / Drop-Off Exceeds Parking Facilities • Speed On Sir Winston Churchill Avenue • Pedestrian / Vehicle Mix In Parking Lot
Keenooshayo Elementary School	• Mixture Of Passenger Vehicles And Buses In On-Site Pick-Up / Drop-Off Area • Underutilization Of On-Site Pick-up/Drop-off • Compatibility Of School Zone And Crosswalk Speed Zones
Sturgeon Heights Elementary / Junior High School	• Excessive Width Of Driveways • Insufficient Parking Lot Signage And Markings • Queues From J.J. Nearing Across Crosswalk
École Marie Poburan	• Poor Accessibility To/From Park Avenue Pick-Up / Drop-Off Area • Pedestrian/Vehicle Conflicts Between ESSMY Lane And School Entrance • Offset Left Turn Lanes At SWCA And Woodlands Rd Intersection
Vital Grandin Catholic School	• Inadequate Width Of East Parking Lot For Drop-Off Or Through Movements • Inefficient Parking Utilization • Missing Sidewalk Link
JJ Nearing Catholic School	• Unattended Vehicles In Pick-Up / Drop-Off Zone • Parked Vehicles Block Pedestrian Visibility • Speeding On Hogan Road
École La Mission	• Narrow Sidewalk In Front Of Bus Lane For Waiting Students • Vehicles Use Reserved Bus Lane • Pedestrians Crossing At Unmarked Crosswalk At Heritage And Hamilton
Wild Rose Elementary School	• Insufficient On-Site Staff Parking Or Visitor Parking • Underutilization Of School-Side PU/DO Parking On Grenfell • School Crosswalks Too Close To Adjacent 50 km/h Zones
École Secondaire Sainte Marguerite d'Youville (ESSMY)	• Congestion In West Access Aisle • Boudreau Road And Sir Winston Churchill Ave Pedestrian Crossing Issues • Missing Sidewalk Links
Vincent J. Maloney Catholic Junior High School	• Pick-Up And Drop-Off Occurring In Emergency Lane • Vehicle Speeds On East Side Of Mont Clare Place • U-Turns In Parking Lot
Albert Lacombe Elementary School	• Violations Of One-Way On-Site Circulation • Location Of East Crosswalk • Parking In No-Stopping Areas On Other Side Of Gainsborough

Neil M. Ross Catholic School	• Congestion On Westwood Drive Entering Woodlands Road • Slope Of Sidewalk On School Property • Buses Speeding On Woodlands Road
Sir Alexander Mackenzie School	• Limited Visitor Parking And Pick-Up / Drop-Off Facilities In Front Of School • Non-Compliance With Reverse Angle Parking • Pedestrian Crossing On Bishop Street At Bernard Drive Not Visible
École Father Jan	• Pick-Up And Drop-Off In Private Parking Lots And Alleyways • Jaywalking Occurring Near Staff Parking Lot • Restricted Visibility Of Pedestrian Crossing
Bellerose Composite High School	• Mixture Of Passenger Vehicles And School Buses Using The Roadway Lay-By • Speeding On Giroux Road • Condition Of Midblock Pedestrian Pathway Crossings
William D. Cuts Junior High School	• Pedestrians Crossing Larose Dr. At Midblock Location • Parents Using Bus Bay • U-Turning Movements On Larose Drive
Lorne Akins Junior High School	• Parking On East Side Fairview Boulevard Encourages Jaywalking • Unsafe Loading/Unloading Manoeuvres Within School Zone • Speed On Sir Winston Churchill Avenue
Paul Kane High School	• Vehicle Speeds In South Parking Lot • Potential For Wrong-Way Movements In Student Parking (North Lot) • Sight Lines To Crossing Pedestrians Limited From South Parking Lot Access
Ronald Harvey Elementary School	• Pedestrian Conflicts Across Bus-Only Lane • Parent Pu/Do Activities Block Bus Access To/From Langley Ave. • Missing Sidewalk Connection West Of Langley Ave.
Muriel Martin Elementary School	• Lack Of Designated Pick-Up/Drop-Off Facilities • Jaywalking Across High-Speed Deer Ridge Drive • Parking Too Close To Crosswalks
Sir George Simpson Junior High School	• Buses Block Access To Pedestrian Signalized Crosswalk • Students Crossing Between School Buses • Sidewalk Ends Before Bus Stop And Pick-Up Areas On School Side
Robert Rundle Elementary	• Congestion In Small City Parking Lot Compromises Safety Of Student Patrollers • Vehicles In Small City Parking Lot Block Access To Residential Pathway • Lack Of Sidewalks Along Narrow Garden Road
St Albert Catholic High School	• Students Crossing Between Buses • Pick-Up/Drop-Off In Middle Of Parking Lot • Compliance With 4-Way Stop And Other Traffic Control Devices
Leo Nickerson Elementary School	• Sign Clutter In Parking Lot • Double Parking Of School Buses • Lack Of Pathway Lighting
Bertha Kennedy Catholic Community School	• Parked Vehicles On Larose Block Pedestrian Signalized Crosswalk • Missing Pedestrian Connection From Kindergarten Entrance To Leddy Crosswalk • Location Of Multi-Use Trail Along Horizontal Curve
Elmer S. Gish Elementary / Junior High School	• U-Turns And Other Unsafe Manoeuvres On Akins Drive • Students Crossing Through Parking Lot At Driveways • Pick-Up/Drop-Off Activities Occurring Within Townhouse Complex

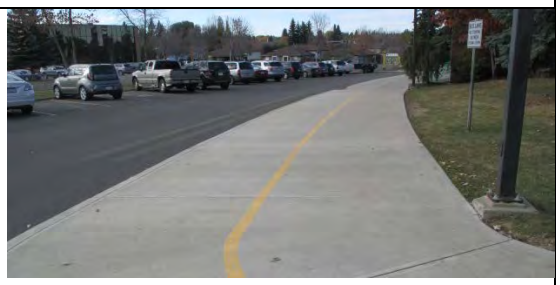
4.5 Effective Practices

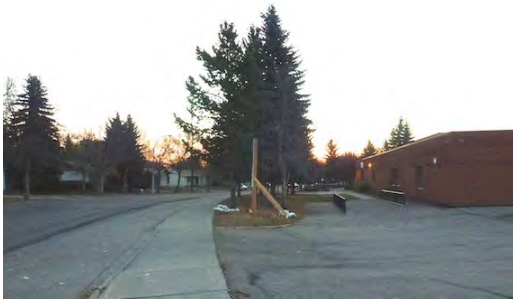
A number of features or programs were found to be in place at some of the schools visited that positively contribute to school traffic safety, based on the principles described in Section 1.2 of this report, best practices, and the experience of the engineering team members. A sample of

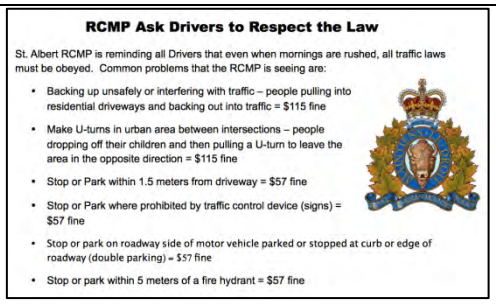
these is summarized in TABLE 4.3. Several such practices were noted at different schools (not only the school identified in the list). Other practices, if expanded to other schools, have the potential to address several of the common and site-specific issues raised in Sections 4.3 and 4.4.

TABLE 4.3 SAMPLE OF EFFECTIVE PRACTICES AT ST. ALBERT SCHOOLS

Direct connection from sidewalks and bus zone to school entrance	Whether students are arriving on the sidewalk or from the bus zone in front of the school, they have direct pedestrian facilities leading them to the school entrance without walking through parking lots or pick-up / drop-off facilities.	Lorne Akins	
Staggered school hours from adjacent school	The École Marguerite D'Youville (ESSMY) and the École Marie Poburan are situated side by side and each has a large number of students. To avoid congestion ESSMY starts and ends their bell schedule approximately one hour before Marie Poburan.	ESSMY	
Promotion of pick-up and drop-off at a second location	In order to avoid the extreme congestion in front of the school on Deer Ridge Drive, pick-up and drop-off activities are promoted on adjacent streets including Delwood Place which has a pedestrian walkway connection to the school.	JJ Nearing	
Dual use of City facilities	In the general vicinity of some schools City parks exist with separate parking lots. At Muriel Martin School, the parking lot adjacent the outdoor rink is used by parents for parking as well as pick-up and drop-off activities.	Muriel Martin	

Separation of pedestrian traffic from vehicle traffic	Pedestrians who get off buses are all directed by school staff into the side entrance closer to the bus stop than the entrance closer to other vehicles and conflict points.	Grandin	
Storage for waiting pedestrians	Students who are waiting to be picked-up in the afternoon have plenty of space to stand along the front of the school so that nobody is forced into the parking lot. The crosswalk across the parking lot is also directly connected to this sidewalk.	Keenoo-shayo	
Partnership agreement with two City lots	The two City lots on the other side of Garden Road from the school permit free public parking, and provide more than enough parking for school staff as well as parents who walk their children to/from school to the vehicle.	Rundle	
Concrete bus lane	The concrete apron provided within the bus lane helps to distinguish the purpose of the space compared with the travel way or a regular roadside curb for parking. This reinforces its importance and discourages other vehicles from entering it during bus-only times. It also reduces rutting/cracking so resurfacing is required less frequently.	Simpson	
Safe Zone in bus waiting area	The yellow line provided along the waiting area distinguishes between the “safe zone” for waiting, and the zone for boarding or walking along the sidewalk. This provides a buffer between majority of students and the parking lot, reduces friction between students and makes loading/unloading more orderly.	Ross	

Crosswalk Visibility	The crosswalk south of the school property is highly visible. This is due to the ladder-style markings, the fluorescent crosswalk signs and the alignment reflecting the desire line connecting the pathways on either side of Grenfell Avenue.	Wild Rose	
Setback of Stop line at pedestrian signal	The STOP line is set back approximately 15 metres from the crosswalk. This provides an effective buffer between the vehicle stop location and the pedestrian crossing location, as well as a good line of sight for vehicles of the change of the signal phase.	Lacombe	 15 metres
Parent pick-up and drop-off through staff parking lot	Good use of on-site space in staff parking lot as staff vehicles are generally parked before students arrive. This minimizes conflicts between pedestrians and drivers.	Bellerose	
Fencing between road and front entrance	Low fence directs pedestrians to cross at safer crossing points rather than crossing randomly through the staff parking lot.	Kennedy	
Effective maintenance of trees to minimize sight obstructions	As Larose Drive is curved at this point, visibility for drivers and pedestrians can be restricted. Cutting lower tree branches increases sight distance and enhances safety.	Cuts	

Use of No Stopping signs	No Stopping signs tend to be more effective than No Parking signs and should be used in areas of critical importance such as near crosswalks where pedestrians may be obscured.	Harvey	
Good communica-tion with parents	Effective use of school newsletter to transmit bilingual messages relating to traffic safety, driver behaviour and school busing issues at beginning and throughout the school year.	La Mission	
Good neighbour management	Administration at this school recognizes that they are part of the surrounding community and their traffic has an effect on the area. At special holidays through the year, the school sends cards to say thank-you to those neighbours they share a street with.	Nicker-son	
Parking passes revoked for breaking rules	Parking at the High School is seen as a privilege. When unsafe driving in the school's parking lot is observed or reported, administration addresses the issue by revoking those parking privileges.	St. Albert High	
"Park and walk" promotion	To help alleviate congestion near the school, staff have been promoting the idea of parking across the play fields, away from the busy streets, and having students walk the short distance to school.	Maloney	
Use of Newsletter to reach out about traffic safety	Using existing communication materials, such as a newsletter, is simple way to get a message out to parents about their role in a safe school area.	Father Jan	
Well managed parent and school bus drop-off	The pick-up / drop-off area in the school parking lot is managed by staff in the morning, helping buses and parents safely share the space.	Gish	

Several other effective practices were noted at multiple schools, including:

Site Design:

- Providing double signing of crosswalk signs, and school zone signs along curves
- Traffic cones to delineate vehicle movements through patrolled areas

Operations:

- Principal and staff supervision and coordination during peak drop-off and pick-up periods (up to four staff members at some schools)
- Coordinated departure of school buses, which in some cases (e.g. Kane) allowed for the double-parking of buses, departing one lane at a time to avoid conflicts
- Re-assignment of the same space for different purposes – parent drop-off in morning and bus-pick up in afternoon (noted at Poburan School)
- Emphasis of one-way circulation in parking lots using pavement markings and angle parking (e.g. Wild Rose)
- Control the use of entrances at different times of the day to manage pedestrian traffic flows and minimize jaywalking (e.g. Rundle)



5.0 CURRENT AND BEST PRACTICE REVIEW FINDINGS

This project incorporates both new and proven safety management measures from other jurisdictions across Canada and internationally. It also highlights successful programs in the City, to encourage their more widespread implementation. Members of the project team are leaders in the industry and drew upon their experience and available resources. Five specific areas that were researched for current and best practices are:

- School Bus Transportation
- Crosswalk Safety
- Active Transportation / Safe Routes to School
- Enforcement and Encouragement
- Provincial and Other Regulations and Programs

The reviews were led by subject matter experts on the project team. This section summarizes the results of the research and consultations, and presents opportunities for enhancements, several of which were included among the recommended strategies in Section 6.0.

5.1 School Bus Transportation

With school buses accounting for an estimated 47% of journeys to/from school, understanding how the system is managed and identifying issues and opportunities are critical to this review.

School bus service can be considered to be an existing program which supports safe and active journeys to school in St. Albert. Riding the school bus is one of the safest ways for students to travel (*Transport Canada, 2002, "Evaluation of Occupant Protection in Buses" Document TP 14006E, p. 32*), and encourages physical activity to and from bus stops. Overall, approximately 45% of students in the City are registered for school bus transportation. The minimum travel distance to qualify for subsidized transportation is 2.4 kilometres. This proportion was also reflected in the Transportation modes and Challenges survey administered as part of this project: 45 % of questionnaire respondents to date have indicated their children ride the school bus to school.

Current Practices

Trends

- Ridership has been increasing over the past few years
- Student ridership on public transit is low in comparison: less than 1%
- Kindergarten to Gr. 6 have the highest percentage of ridership, and the highest growth is among the K to Gr.4 demographic

- Rates of ridership are much higher in rural areas
- Trips are on average 20-25 minutes
- Each bus completes up to three routes per shift
- Government funding has decreased while the cost of fuel has increased (prior to mid-2014)
- Six bus companies are currently contracted; it is becoming more difficult to attract good bus companies due to their rising costs



Issues

A focus group discussion was held on July 11, 2014, and was attended by representatives of each of the major School Divisions, as well as the City (representing St. Albert Transit). School transportation companies were also invited but did not attend. Based on the research and focus group discussions, the following issues and opportunities were identified.

- The lack of neighbourhood catchment areas versus choice schools increases the number of trip kilometres for the buses.
- Three separate school bus companies reduces the ability to optimize routing.
- The 2.5 km minimum doesn't include a buffer for students living along the fringe.
- There is a lack of consistency between jurisdictions regarding the use of school bus flashing lights, and the lack of public education regarding when these are in effect.
- Many school sites were built 40 years ago and were not designed for school bus transportation. Current needs include separate bus bays, etc.
- At some schools, buses have been separated by revising the layout within the existing school limits, including Sturgeon Heights and Morinville.
- Teen drivers at high schools have caused conflicts in bus areas. Booths/gates have successfully been used for access control.
- Pedestrians walking between buses create conflicts.
- Can explore for School Districts to have common bus stops.
- Risks can be reduced through better routing that can result in fewer stops; also more safety in numbers while waiting.
- Viability for school bus transportation is becoming less due to increased emissions standards. Safety has not been affected noticeably, but risk of poor maintenance.
- Driver recruitment is becoming more difficult and as a result the quality starting to drop. Turnover is excessive (currently about 10%).
- Drivers can lack relationship/student management skills.
- Sturgeon District provides training directly, other districts rely on their contractors
- A lack of awareness exists among school divisions about the role of transportation, and of sustainable solutions.

Best Practices

Enhancements Already Made

Several enhancements that were identified in the 2008 *Report on School Bus Safety in Alberta*, commissioned by Alberta Transportation were implemented by all St. Albert school districts; and other measures have been implemented on a voluntary basis:

- Route risk assessments (carried out in September of every year)
- Three cameras installed in each vehicle for increased security and behaviour management; these help create a safe and caring environment; and reduce parent anxiety, incidents and driver distraction.
- Stop arms, full flashing light assembly, strobe lights and reflective tape on all buses
- S-endorsement (competence level that must be met by all prospective operators)

The effect of these changes on actual collisions is unknown at this time; however, anecdotally school bus safety has improved. Collisions in St. Albert revealed went down in 2010 (soon after the implementation of some of these programs), before rising again.

The St. Albert Public School Board organizes an annual *First Riders' Night* to familiarize students and parents with how to ride the school bus safely. The Greater St. Albert Catholic School Board maintains a real-time online bus status dashboard, which helps parents and students assess when to leave for the bus stop.

Opportunities

Our findings identify opportunities to improve the school bus program through a review of fare structure and baggage regulations.

Fare structure. In the workshops completed to date, a number of larger families indicated that they perceive driving to school as cheaper than paying upfront for an annual bus pass. Both school boards currently offer a maximum school bus fee for families needing four or more passes, but no discount is available for families needing two or three passes. Questionnaire results also indicate that the majority of students who stop walking or cycling to school in the winter commute instead by car. It is understood that at least one of the school districts has a six-month pass. As a minimum it is suggested that this be offered by all districts. Furthermore, a monthly fare option could reduce the financial barrier to families of paying for multiple annual bus passes up front, while also helping to capture additional riders who only need the school bus for part of the year. See TABLE 5.1.

TABLE 5.1 EXISTING ANNUAL SCHOOL BUS FARE STRUCTURE

	St. Albert Catholic Schools	St. Albert Public Schools
Between 1.6 km and 2.4 km from designated school	$230/year*	$250/year
More than 2.4 km from designated school	$180/year*	$120/year

* $10 discount applies for early payment. For students attending Catholic schools, the $180/year rate is available only to students living in rural areas.

Baggage regulations. A second barrier to school bus use is the prohibition, by both school boards, of items larger than 13" × 13" × 23". To accommodate students with musical instruments, sports equipment and class projects, school buses could be retrofitted with storage shelves compliant with provincial regulations.

Other opportunities identified during the research and consultations, include the availability of:

- Other technologies that can be placed on-board to improve safety and vehicle tracking;
- Driver training programs that assist candidates to gain student management skills.

While School Buses are statistically the safest form of transportation, walking and cycling programs support active and healthy lifestyles, and therefore should also be encouraged. Active transportation will be discussed later in this section.

5.2 Crosswalk Safety



Crosswalk safety is an important part of the journey to school, as perhaps the most significant conflict points along the journey are those where students need to cross a major street. St. Albert schools provide a mixture of traffic controls, ranging from signs and markings to pedestrian-activated signals (half-signals). To supplement crossing control devices during school peak times, student or parent crossing guards are provided at several schools. The primary purpose of these patrols are to assist pedestrians to find gaps in traffic. In doing so, they also increase driver alertness and the visibility of the crosswalk, and discourage jaywalking. In Alberta, the system has traditionally involved students (not parents), and students do not enter the road.

A review was conducted of the City's current pedestrian crossing control practices, with a focus on the use of crossing patrols.

Current Practices

AMA School Patrol Program

The Alberta Motor Association (AMA) coordinates the vast majority of school patrol programs in Alberta and has done so for over 75 years. The program is considered to be one of the best of its kind; there has never been a serious injury or fatality in a patrolled crosswalk. The success of the program can be attributed to the strong partnerships between the AMA, schools, law enforcement agencies, municipal traffic engineering departments and partner organizations. Greater St. Albert Catholic Schools and St. Albert Public Schools both participate in the AMA School Safety Patrol Program. No junior high or high schools participate in the program. The 18 schools in St. Albert with elementary grades are listed in TABLE 5.2, and the 13 participate in the program are highlighted.

TABLE 5.2 ST. ALBERT SCHOOL ENROLLMENT IN AMA STUDENT SAFETY PATROL PROGRAM

SCHOOL	Currently enrolled in AMA School Safety Patrol?
Albert Lacombe Elementary School (PreK-6)	YES
Bertha Kennedy Catholic Community School (K-6)	YES
École Alexandre-Taché	NO
École Father Jan (K-6 French Immersion)	YES
École La Mission	NO
École Marie Poburan (PreK-6)	YES
Elmer S. Gish Elementary / Junior High School (K-9)	YES
J. J. Nearing Catholic Elementary School (K-6)	YES
Keenooshayo Elementary School (K-6)	NO
Leo Nickerson Elementary School (K-6)	YES
Muriel Martin Elementary School (K-6)	YES
Neil M. Ross Catholic School (K-6)	YES
Robert Rundle Elementary School (K-6)	YES
Ronald Harvey Elementary School (K-6)	YES
Sir Alexander Mackenzie Elementary School (K-6)	NO
Sturgeon Heights School (K-9)	NO
Vital Grandin Catholic School (PreK-6)	YES
Wild Rose Elementary School (K-6)	YES

The involvement of schools in the student patrol program is not controlled by the City or the school districts. Besides the absence of a significant crossing point that would require patrolling, the use of student patrols is largely a function of the interest/availability of students to participate, and of school staff to supervise.

In 2001 – 2002, the school patrol program philosophy changed significantly. Prior to that time, patrollers stood in the roadway with stop paddles to stop traffic as students crossed. Since that time, the role of the patroller is one of assisting fellow students to cross a road safely by selecting and using gaps in traffic and encouraging the use of "Point, Pause and Proceed" fundamentals.

Patrollers guide children, model good roadway crossing habits and prevent them from entering traffic when it is unsafe to do so. Patrollers do not direct vehicular traffic and, therefore, do not need to be recognized as such by municipal bylaws or provincial legislation.



Source: Alberta Motor Association

By participating in the AMA School Safety Patrol Program, St. Albert schools are can benefit from well organized, well trained and well equipped patrollers and supervisors who are monitored and visited by AMA regional coordinators at least twice per year to ensure consistency and training. Consistency is important, not only from school to school but also between jurisdictions. Driver expectations are managed when faced with similar controls at similar locations under similar conditions throughout Alberta and beyond.

Pedestrian Crosswalk Facilities

For pedestrian crossing controls, the City generally uses the 2012 *TAC Pedestrian Crossing Control Guide.* These warrants were not specifically reviewed as part of this study, but are recognized as the current national standard. The City applies these guidelines for new crosswalk installations, and revisits existing crossings on a case-by-case basis further to public requests. For crosswalk markings, the City follows the procedures documented in Section 2.1 of the *St. Albert Pavement Marking Guidelines* (Revised in 2011), which is consistent with the most recent version of the TAC *Manual of Uniform Traffic Control Devices for Canada* (MUTCDC) before 2011. The "countermeasures workshop" held with City engineering staff provide further insight into the use of pedestrian crosswalk facilities. Further to these discussions, on-site team observations, and an overview of the above documents, the following current practices exist:

- The full range of pedestrian crossing facilities is used, ranging from signed and marked crosswalks to special crosswalks and pedestrian half-signals and full traffic signals.
- The crosswalk lines are painted 10 cm wide, which is the minimum permitted by TAC.
- The City enhances some of its crosswalks (including - but not exclusively - those in school areas) with fluorescent yellow-green regulatory signage.

- Zebra markings are marked at midblock locations and at intersections on a case-by-case basis, but not in conjunction with signalized crossing locations or any pedestrian-activated traffic signals or overhead flashers.
- The City has not been actively installing pedestrian-activated overhead flashers, preferring to install pedestrian signals instead to require traffic to come to a stop.
- No particular school crosswalk signage is installed (such as RA-3 or WC-16 signs).

Best Practices

School Patrols

The school patrol programs with the greatest rates of success are at schools that provide encouragement and build pride and morale in participants. School patrollers have the opportunity to develop leadership skills beneficial to their future endeavors.

Opportunities for improvement would be to review the program coverage to ensure that the need is being met at all St. Albert schools. There are currently six schools that do not participate in the school patrol program for various reasons and these should be examined. If these schools are unable to support a patrol program due to age or lack of student population, other measures could be recommended such as an increased level of crossing control.

Of the 13 schools that participate in the school patrol program, it appears that only the crosswalks closest to the schools are patrolled. There may be opportunities to patrol crosswalks further upstream from the schools to ensure safe crosswalks at more points along the school journey. This would, however, require an increase in the number of student patrollers and support staff.

Adult Crossing Guards

Adult crossing guards are employed in some jurisdictions in Canada and the United States. In general, pay-based adult guard programs are more successful than volunteer-based programs. The former school traffic coordinator at the City of Calgary indicated poor success with any safety programs that relied on adult volunteers. Volunteers are often keen to participate at the beginning of a program but interest often wanes over time. No evidence was found to indicate that adult crossing guard programs are safer or more effective than the student based school patrol programs currently used in Alberta.

There is some indication that patrol programs that work with children to develop safe roadway crossing practices, such as the AMA program, also help children learn how to cross at non-patrolled locations. Crossing under the protection of an adult guard, may lead children to develop a false sense of security at unguarded locations.



In Ottawa, Ontario, the adult crossing guard program is contracted by the City of Ottawa to the Ottawa Safety Council. The Ottawa Safety Council employs over 150 adult crossing guards, but as salaries are relatively low, they struggle to maintain full staff coverage.

The City of Guelph, Ontario started an adult crossing guard program in 2004 and estimates that they have staff shortages on 70% of school days. Reasons include low wages, difficult working conditions and a lengthy, invasive security screening process.

As municipalities typically rely on stay-at-home parents or retirees to fill crossing guard positions, there can be numerous reasons why guards are unable or unwilling to work, such as illness, vacation, and inclement weather. Other jurisdictions such as London and Toronto employ commissionaires to act as crossing guards. Coverage is more costly, but more reliable.

The AMA also currently has an Adult Crossing Educators (ACE) training program available and they are seeking volunteers to assist in development. Any St. Albert schools willing to participate are welcome and should contact AMA. The ACE program is similar to the school patrol program in that it is also based on the principles of Point, Pause and Proceed. The program is based on the use of adult volunteers.

Other Crosswalk Enhancements

Crosswalks that present the drivers with a larger visual target value benefit drivers, pedestrians and school patrollers. It is recommended that all marked crosswalks in St. Albert be striped with double width (200 mm) lines perpendicular to traffic where single width (100 mm) lines are generally used now. Also, the use of “ladder” or “zebra” style markings should be implemented at all major crosswalks adjacent to schools, including all patrolled crosswalks, even if they are at intersections.

Regarding the use of fluorescent yellow-green for pedestrian crossing signs: while this is not in conformance with the Transportation Association of Canada (Section A6.4 of the 2014 MUTCDC specifies black-on-white), such signs are highly visible and therefore effective; however, there could be potential for confusion with the yellow typically used on advance or warning signs (such as the RA-8 in-street crosswalk sign or the WC-16R school crosswalk ahead sign). The use of conforming black on white pedestrian crossing signs should be considered with the use of oversized signs to add greater target value to the crossings as required.

At some locations, it was noted that “No Parking” signs were used on the approaches to crosswalks adjacent to schools. “No Stopping” signs should be considered as sightlines would be obstructed if vehicles stop, even briefly, to drop off passengers at these locations. Regular inspections both by the schools and by the municipality are recommended to ensure that the crosswalk signs and lines as well as the waiting pedestrians and patrollers are visible to motorists at every location.



Efforts can be made to partner with AMA, the City of St. Albert Engineering Department and the local police service to purchase fluorescent yellow/green traffic cones for use by all school patrollers. These cones are used to channelize traffic at intersections with non-standard geometry, square off corners and enhance visibility of the crossings. The unique colour of the cones distinguishes them from standard orange construction cones and matches the colour of school zone signs. Such cones are successfully deployed in Calgary, where they create a visual cue unique to school zones and help increase driver awareness when driving through a school-patrolled pedestrian crosswalk.

To improve yielding rates at crosswalks, two specific measures were found in the research that have been successfully implemented in other jurisdictions. These are summarized in TABLE 5.3.

TABLE 5.3 NEWER ENGINEERING MEASURES TO IMPROVE YIELD RATES AT CROSSWALKS

“Shark Teeth”	Shark Teeth are yield lines that consist of a row of solid white isosceles triangles pointing toward approaching vehicles extending across approach lanes to indicate the point at which the yield is intended or required to be made. These can be used in place of solid lines at uncontrolled crosswalks.	
Rapid Rectangular Flashing Beacons (RRFB’s)	Rectangular Rapid Flash Beacons (RRFB) are pedestrian-activated crossings. The beacons have LED lights and display intermittent rapid flashes when activated to increase visibility of pedestrians crossing the roadway. Vehicle Yield rates have increased significantly after most installations.	

5.3 Active Transportation Programs and Safe Routes to School

Active and safe journeys to school programs are encouragement measures which can increase student safety while reducing the number of students commuting to school by car. These programs take many forms, ranging from district-wide school bus service, to walking groups and school-based theme days. In this section, existing programs encouraging safe and active journeys to school in St. Albert are reviewed and new program opportunities are identified.

Current Practices

Initial conversations with City and School Division Staff indicated that there are no formal *Safe Routes to School* programs in the City. Organizations such as SHAPE (Safe and Healthy People Everywhere) work with some of the schools upon request. Discussions with them and other organizations that promote healthy and active lifestyles among schools about are ongoing; and will identify current challenges and successes in St. Albert.

The results of the survey were also analyzed to gain a picture of current attitudes towards active transportation. Encouragement measures evoke behaviour change by offering benefits. In order to generate maximum leverage for behaviour change, these benefits must be directed at factors most strongly influencing how students commute to school. The factors identified thus far in the questionnaire have been considered in evaluating current policies and programs and comparing them to what is possible. Respondents to date have revealed that *convenience* and *safety* are the greatest levers for behaviour change (FIGURE 5.1).

Best Practices

A handful of programs, described as follows, are recognized as being important elements of safe and active school programs. Specific recommendations are made in Sections 6.0 and 7.0.

Walk-to-School Programs

A “walking school bus” is a walking group to school. Walking school buses provide safety in numbers, can reduce the number of parents/leaders required to supervise the walking route, and provide an opportunity for neighborhood members to meet each other. Desirable components of walking school buses can include:

- A “safe routes” network, with thorough coverage within a 1.6 km radius of the school
- A wagon for backpacks, alternately stored at the school and terminus of the route
- Training for walking school bus leaders on how to manage risks
- Brightly colored scarfs, flags or safety vests to be worn/carried by the leader/students
- Written agreements outlining expectations of walking school bus leaders and students

- For younger students, a rope to be grasped while walking
- Timing points and contingency walking leaders, to ensure schedule adherence

Leaders of the walking school bus can be older students or parents, or a combination. Where an elementary school is proximate to a junior high or high school, walking school bus leaders can be selected from older students enrolled in leadership programs.

A number of informal walking school buses already exist in St. Albert, in which parents alternately supervise a walking group to school. To initiate informal walking school buses, often all that is necessary is to provide parents the opportunity to coordinate amongst themselves. We note that 83 % survey respondents to date have indicated their children live more than a kilometre away from their school. For students who live too far away to walk the full distance to school, the terminus of the walking school buses can be the school bus stop instead of the school. To encourage active lifestyles, SHAPE Alberta also suggests the possibility that school buses and cars drop students off some distance from the school so that they can join local walking school buses for the final leg of the journey to school.

Safe Routes to School Programs

It is becoming more common for schools to develop "Safe Routes to School", which are maps that show the walking routes with the fewest safety risks. Each school can prepare a general version (or a version for each direction to/from school). Parents and students are then encouraged to prepare their own versions for their individual route(s). This exercise helps parents and students take ownership to manage risks that are within their control. This is an important opportunity and best practice that the School Districts are strongly recommended to pursue, using the expertise of groups such as SHAPE and the City if desired.

Cycle-to-School Programs

Encouraging use of off-road facilities and improved cycling facilities along roadways are required prior to other large efforts to promote cycling to school. Cycle-to-school programs generally consist of two components: safety training, and the coordination of a buddy system. The following types of programs can be considered:

- Bicycle Safety training. Schools typically bring in or advertise existing programs, such as Bike Rodeo or CAN-BIKE. Bike rodeos involve a number of educational and fun "skill stations" which provide guidance on handling bicycles and riding safely. CAN-BIKE offers day-long sessions, which cover topics ranging from learning to ride, to riding safely in traffic. Particularly for older students, there will be a significant opportunity to use the St. Albert Bike Skills Park, slated for completion in Fall 2015, as a venue for training sessions.

- Buddy systems. Buddy systems encourage cycling to school by encouraging students to engender a sense of responsibility for their buddy. Buddies can be students of the same age, or a younger student paired with an older student commuting to the same area. Where exclusively younger students are cycling to school, parents can be encouraged to take turns leading the group safely to school.

- Classroom Education. The Classroom Activity Toolkit developed as part of this review contains a variety of walking, cycling, and school bus safety activities for K-12 students, as well as an art contest to engage students on the topic of traffic safety.

- Theme Days. Theme days, such as school parades, Fantastic Fuel-Free Fridays, or Walk-to-School-Wednesdays, can be established on a weekly or monthly basis as a reminder of the importance of safe, active journeys to school. Teachers can award small rewards or badges to participating students on a random basis.

5.4 Enforcement and Encouragement

Enforcement and encouragement are the necessary ingredients to preserve the rules, policies, plans and designs that are in place in support of school traffic safety. Encouragement is more proactive and enforcement is more punitive, but can also potentially discourage unsafe behaviours.

Current Practices

School traffic safety currently receives a lot of support from the local RCMP. This includes speed enforcement of school zones and enforcement of parking regulations during school PU/DO operations. A focus group meeting was held with police and City bylaw officials on July 16, 2014 to understand their activities and challenges. It was attended by the Manager of Policing Services for St. Albert, the RCMP detachment commander, members of RCMP Traffic Enforcement, Municipal Enforcement Officers and Peace Officers. Current enforcement activities include:

- Teachers and principals patrolling drop-off and gently reminding parents of rules
- Mail-outs to all parents specifying traffic/parking rules (improves parent behavior for a month)
- Coffee cards for parents who are observed to follow traffic rules or walk with their children to school (improves parent behavior for a few months)
- Use of Side-mounted Rectangular Rapid Flashing Beacon (RRFB) treatments on Sir Winston Churchill Ave pedestrian crossing signs (has been very effective)

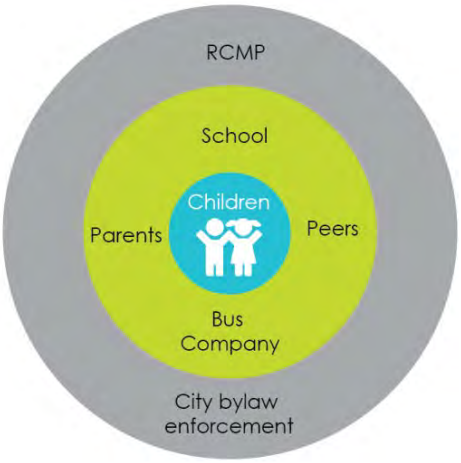
The following issues/violations were identified:

- Distracted driving
- Poor trip planning; parents who leave insufficient time for the commute
- Students being dropped off into oncoming traffic (exiting vehicle on driver side
- Double and triple parking, parking on landscaping, ditches – congesting street for others, especially buses

Best Practices

Enforcement strategies encompass a variety of activities. These include education and follow-up to unsafe behaviours, formal police and bylaw enforcement of laws, bylaws, and regulations, and dissemination of traffic safety performance metrics.

The aim of enforcement in the context of safe journeys to school is to create a support system for children to travel to school safely. Law enforcement cannot be expected to be solely responsible for creating this support system. Parents, bus companies, school staff, and the children themselves are the most effective self-policing groups. Consistent reinforcement of traffic rules by all of these groups helps children develop situational knowledge: the ability to recognize safe or unsafe situations and appropriate or inappropriate behaviours. Police resources can be used most efficiently when parents are strong role models for traffic safety, schools educate students about safety, and peers remind each other of safe behaviours. Best practices in enforcement recognize the roles to be played by each of these partners.



Effective enforcement involves many partnerships that ensure children can travel to school safely.

Consistency of Rules Across Locations and Times

As drivers and students pass from one school to the next, the same safety rules need to be communicated and reinforced. Meanwhile, enforcement should retain a degree of unpredictability, in order to solicit compliance even when law enforcement is not visible.

There are a number of opportunities to make traffic rules more consistent across all schools. Some of these will be further developed by the study team in the next phase of the project:

- School parking lot signs are currently inconsistent and at times, contradictory. Signs could be redesigned to be simpler to understand, consistent across schools, and easier to read.

- An ongoing traffic safety committee would help to ensure that programming and partnerships remain consistent over time. Such a committee could consist of partners including school boards, parents, the City, principals and the RCMP.
- A traffic safety committee could be supported at each school, with members that might include the principal, teachers, parents, and student leaders. Such a structure would improve consistency among the rules, expectations and best practices across schools.
- Coordination with regional municipalities presents an opportunity to further standardize school zone practices. School zone practices across the Edmonton Capital Region are now more consistent with Edmonton's adoption of school zones for elementary grades, effective September 1, 2014. Since over half of speeding violations at school zones in St. Albert were associated with vehicles registered in Edmonton, enforcement in Edmonton is expected to improve school zone compliance in St. Albert.
- "Enforcement Blitzes" increase the visibility of traffic safety enforcement and often generate interest in the media, thereby deterring traffic violations in the community at large. The unpredictability of such heightened enforcement measures serves to improve everyday compliance. They also significantly increase the probability that a serial violator will be caught.

Monetary Value of Fines as a Reflection of Risk

Traffic violations in school zones present an elevated level of risk because children are vulnerable road users. Context-specific fines should be considered for school zones. Bylaws enacting double fines could be considered in St. Albert for the most dangerous and common violations identified in this study, such as U-turns, speeding and distracted driving.
Given the growing public support for increased enforcement measures in school zones, the City of St. Albert could consider lobbying the Province to enact double fines for traffic violations in school zones across the province.

It has been more than ten years since the 2003 revision of fines in the Alberta Traffic Safety Act, and there is precedent for such revisions. The Alberta Roadbuilders and Heavy Construction Association successfully led a movement for the adoption of double speeding fines in construction zones, adopted in the *Traffic Safety Amendment Act, 2005*. Arizona DOT, long regarded as a leader in school zone safety, enforces double-fines for speeding in school zones.

Community-based enforcement programs: Speed Watch

Community-based enforcement programs offer a presently untapped opportunity to leverage police resources. In school zones, specially-trained community volunteers could monitor speeds using portable radar equipment and electronic signboards. The data collected could be used to publish regular bulletins on progress towards 100% compliance in school zones. Many such programs already exist across North America, such as in Vancouver, where a Speed Watch

program has been in place since 1996. In some communities, the licence plates of violators are recorded and sent to law enforcement for follow-up warnings by mail. On an intermittent basis, police can be stationed after the community warning patrol to ticket speeders; this in turn increases the seriousness with which the volunteer program is viewed.

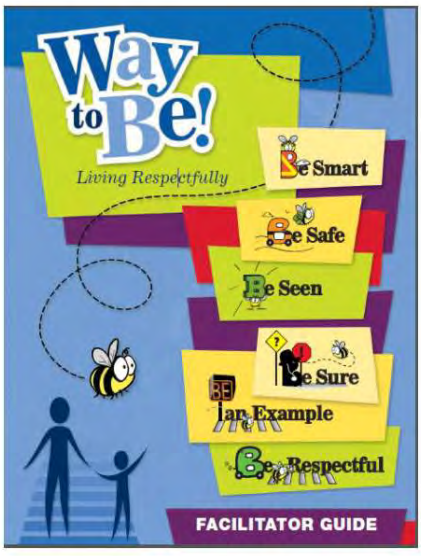
Self-Enforcement

Effective role modelling and traffic safety education at schools ensures that students receive consistent positive messaging about traffic safety. There are number of best practices for schools to consider:

- School-based rules which ensure that school bus and car traffic are separated, that the closest drop-off areas are reserved for the youngest students, and that the parking lot rules are non-contradictory and clearly signed.
- Education programs for students, early in the year, to set expectations. These can include classroom sessions, school assemblies, and presentations by local law and bylaw enforcement.
- Communication with parents, early in the year, to set expectations. These can include mail-outs, email newsletters, and direct conversations with parents.
- Teacher enforcement, including friendly reminders to students at the end of the day.

"Way to Be! – Living Respectfully" Program

The greatest and longer-term strides are made when cultural transformation takes place. Respect for fellow parents, students, neighbours, school staff and community members is an important part of improving school traffic safety. Respect and compliance can help make short but challenging daily situations more tolerable and enjoyable, breed more ownership of the problem and risk management, and ultimately enhance school traffic safety.



In support of these principles, the Alberta Motor Association is currently partnering with The Society for Safe and Caring Schools & Communities to develop an educational program called "Way To Be – Living Respectfully". It is based on the concept that everyone has the right to feel safe and the responsibility to respect the safety of others. This program is scheduled to be officially rolled out in the 2015 school year. There are, however, opportunities for St. Albert schools to be at the forefront of student safety by piloting this worthy project before the official roll-out. It is recommended that St. Albert schools participate in the pilot for the "Way to Be – Living Respectfully" program.

> *"Schools who pilot the program will have input into changes/revisions and ideas for additional student activities. The sooner schools make a concentrated effort to raise awareness about traffic safety and create a culture of safe behaviours, the more students we can keep safe. This won't happen overnight as it takes time to change attitudes and behaviours so starting now will help schools reach that end goal faster."* - Bev Dekker, The Society for Safe and Caring Schools & Communities

Age appropriate traffic safety lessons could be incorporated into Health and Life Skills portion of the school's curriculum; the Way To Be Facilitators Guide has a suggested curriculum for K-6 that is summarized in TABLE 5.4.

TABLE 5.4 "WAY TO BE" PROGRAM CURRICULUM

Kindergarten	W-K.7	Identify unsafe situations and safety rules for protection; e.g. avoid walking alone
	W-K-8	Identify safety symbols
	W-K-9	Describe and observe safety rules in the home and the school
Grade 1	W-1.7	Describe actions to use in unsafe situations
	W-1.8	Determine reasons for and apply safety rules at home and at school W-1.9: Describe and apply appropriate street safety behaviours in the community
Grade 2	W-2.9	Describe and apply safety rules when using physical activity equipment
Grade 3	W-3.8	Employ practices that provide safety for self and others
	W-3.9	Describe, apply and analyze appropriate safety behaviours in the community
Grade 4	W-4.8	Expand practices that provide safety for self and others
	W-4.10	Describe and demonstrate ways to assist with the safety of others
Grade 5	W-5.8	Promote safety practices in the school and community
Grade 6	W-6.8	Analyze how laws, regulations and rules contribute to health and safety practices
	W-6.9	Evaluate the impact of personal behaviour on the safety of self and others
	W-6.10	Demonstrate responsibility for and skills related to, the safety of self and others

5.5 Provincial Regulations and Programs

To identify the opportunities that are available at the municipal level, it is important to understand what resources and tools may be available from other levels of government. In addition, an understanding of the broader context and how the landscape may be changing in order to understand the direction that the management of school transportation safety in the City should take. Some of the specific items discussed are as follows:

Alberta Traffic Safety Plan (ATSP)

A review of the ATSP was conducted to identify areas related to school traffic safety. The 2015 Plan states among its objectives of the 2015 Plan: to "develop and nurture further partnerships with other traffic safety organizations, schools….in the undertaking of traffic safety activities". Among the school traffic safety activities it lists for 2013-2015 are:

- Sending information to school aged children pedestrian/ bike/school bus safety through Street Safe day (every September)
- AMA school patrol day celebrating pedestrian safety (every June)
- Strengthen awareness programs in high schools using such resources as Mothers Against Drunk Driving (MADD) & Students Against Drunk Driving (SADD)
- Regional Traffic Safety Consultants to coordinate local partners, including schools, to promote and implement activities related to distracted driving awareness; young drivers and riders; pedestrian and bicycle safety; and motorcycling safety
- Partnering in the development and implementation of community based traffic safety initiatives such as bike rodeos, school bus rodeos and youth traffic safety events
- Include youth in stakeholder consultation efforts and train them to be traffic safety leaders in their school environment

Although the extent to which the ATSP Traffic Safety Consultants have reached out to the City or the School division and/or undertaken activities within St. Albert were not established during this review, it is suggested that the City contact its ATSP member to take advantage of the above programs for which it sees value.

Traffic safety laws and regulations in support of support school safety

The Traffic Safety Act and the supporting Regulations identify rules for school zones:

- Traffic Safety Act Section 107: identifies school zones based on the presence of the school area sign and 30 km/h speed limit, or by the display of intermittent flashers; as well as the authority for municipalities to set the speed limit and hours for school zones.
- Regulations Division 2: lists the default times of effectiveness and the passing restriction
- Regulations Division 3: meaning of flashing devices on school buses, restriction to school buses backing up
- Regulations Division 4: rules regarding safe operation of bicycles
- Regulations Division 7: prohibits school buses from making U-Turns
- Regulations Division 10: permission for school buses to park on the road
- Regulations Division 13: requirement for lamps and reflectors on bicycles

The Traffic Safety Act recently gave municipalities the authority to set hours of effect for playground zones. It is suggested that the school zones remain unchanged in spite of the change in playground zones, and that the guidelines on signing adjacent school and playground zones be followed, where applicable. The City may wish to discuss adopting playground zone times that are aligned with school zone times, at least at the start of the day, and if the activities of the playground zones are closely tied to school activity.

The City of St. Albert's traffic bylaw permits cyclists to use the sidewalk. While this is an acceptable interim solution until high-quality facilities for bicycles are made available, sidewalks are not designed for and are sub-optimal for bicycle use; more advanced cyclists should be encouraged to use the roadway and off-road pathway systems.

Alberta Education

The Alberta curriculum includes traffic safety as part of its "wellness" under "safety and responsibility". The resources were reviewed and incorporated into the Classroom Activity Toolkit developed as part of this project.

Safe Communities Canada

Safe Communities Canada is part of the umbrella of organizations known as Parachute, an organization dedicated to preventing injuries and fatalities. One of its programs is on pedestrian safety, and has videos promoting safe crossing movements, discouraging the use of cell phones while crossing, and offering various contests, including "Canada's Favourite Crossing Guard Contest 2014". There are also traffic safety teaching resources for K, Grades 1-3 and 4-6.

Canada Walks

This organization offers programs and resources including Active and Safe Routes to School, and School Travel Planning. The Director of Canada Walks, Jacky Kennedy, has been providing input to various aspects of the project. Such an organization can assist in the development of safe routes to school.

5.6 Other Municipal School Traffic Safety Programs in Alberta

Consultation was conducted with six Alberta municipalities to learn about their traffic safety programs, including the four areas described in Sections 5.1 to 5.4. Separate interviews were held with staff from each municipality to understand current practices and challenges, for the purpose of both benchmarking and to learn from successful programs and practices. The context and general notes are as follows, and notes particular to the five areas that form part of the current/best practice review are summarized in TABLE 5.4.

City of Edmonton

The City of Edmonton is the closest large municipality to St. Albert, and is the heart of the Capital Region, to which St. Albert also belongs. Several residents of Edmonton attend St. Albert schools, and vice versa.

Edmonton has historically had very few school zones (i.e. reduced speed zones); instead they have used measures such as fencing of school playgrounds, access management and protected crossing facilities to provide for safety. In September 2014, 30 km/h school zones were introduced at all school zones (except on arterial roads) in Edmonton for the first time. The Office of Traffic Safety (OTS) is collecting speed compliance data. After an introductory grace period of two months, tickets started to be issued. There will be a report to Council within one year, to review speed compliance, and to determine the need to revise or expand the program.

The City has a special program for the clearing of windrows caused by snow clearing equipment. As part of its residential blading program, the following policy is in place:

> "Service level will only involve the blading of snow. Windrows (less than 30 cm in height) left behind blocking driveways will be the responsibility of the adjacent property owner. Windrows (more than 30 cm in height) left behind will be cleared as to not block driveways." – City of Edmonton Policy C409H (dated November 26, 2014)

Strathcona County

As the other large suburb of Edmonton, Strathcona County is often a reference point for St. Albert. Strathcona, however, has a much different road network, including a grid system, and rural high-speed roads in much of the County. The County developed and maintains a *Traffic Safety Strategy* (updated in June 2014), aimed at reducing fatal and injury collisions by 15 percent by the year 2020. To improve school traffic safety, the County has recently started a school traffic safety partnership with the RCMP, the school divisions and charter schools, including chairs of the school councils. A governance model is in place for this committee. School zones times are the same as the provincial times.

City of Leduc

Being much smaller in population than St. Albert, the City of Leduc has more rural roads and industrial land uses, Leduc has 5 elementary, 2 senior high schools and 1 junior high school. The school zone times are the same as the Provincial default times (three times of the day).

City of Red Deer

The City of Red Deer is slightly larger than St. Albert by population. The City has a traffic safety program and belongs to a coalition of Safe Communities of Central Alberta, and conducts a *Traffic Safety Study for Schools* approximately every 3 years, including a 2013 review of four schools. The City is also in the process of revising its crosswalk policy (including for school crosswalks), in response to the recent update to the TAC crossing control guidelines.

City of Calgary

The City of Calgary has more school zones than any other municipality in Alberta, and a highly influential Board of Education. In response to the provincial changes to allow municipalities to set its own times for playground zones, the City recently changed both its school and playground zones to be effective from 7:30 am to 9:00 pm. In 2013, the City conducted the *School Site Review Project*, a comprehensive review of safety around 22 of its schools, and a report to Council is expected in early 2015.

The City also recently conducted a *Playground and School Zone Awareness Pilot Project*, which investigated alternative traffic measures as a way to increase driver awareness of entering Playground and School Zones. The measures included:

- Traffic cones with reflective spinning anemometer (a "twirling reflector")
- Neighbourhood speed watch program
- Reflective tape on playground/school zone sign poles
- Double signing at start of playground/school zone signs
- Larger playground/school zone signs
- Multiple playground/school zone signs within a single zone
- Zone ahead signs
- Road marking stencils

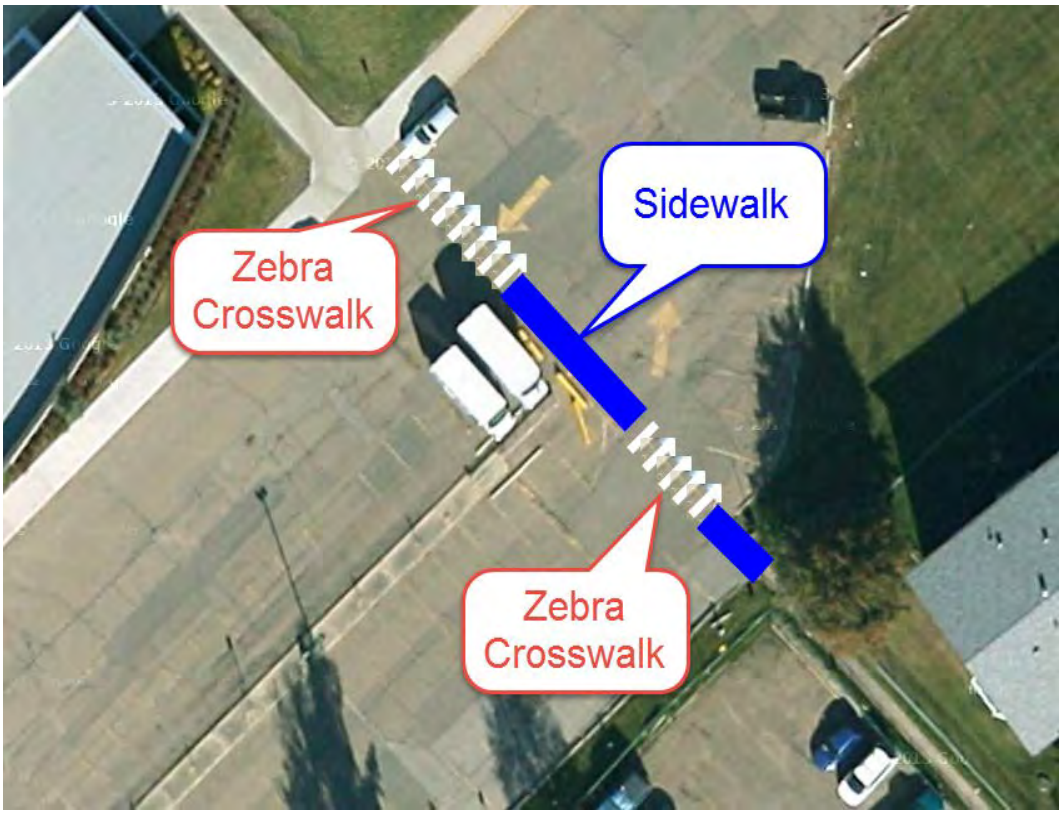


The pilot project included 23 treatment sites and 6 comparison sites. The results generally indicated very small changes in speed or compliance. Surveys were also conducted, which indicated that traffic cones were the most visible measure to attract driver attention, and that the least visible was the double-signs. The report recommended that the City establish a formal speed watch program, to evaluate options for adopting traffic cones on a widespread basis and implement double signing and pavement markings only at locations where sight distance is limited or where speed compliance is low.

TABLE 5.4 SUMMARY OF SCHOOL TRAFFIC SAFETY PRACTICES IN ALBERTA MUNICIPALITIES

	SCHOOL BUS TRANSPORTATION	CROSSWALK SAFETY	ACTIVE TRANSPORTATION	ENCOURAGEMENT AND ENFORCEMENT
CITY OF EDMONTON	City has no role; dictated by school board. Some issues are present where buses take up parent parking.	City has three distinct types of crossing treatments, using TAC. Looking to pilot Rapid Rectangular Flashing Beacons somewhere in the City prior to at schools. Also planning to pilot automated bicycle detection, which if successful may then lead to possibly piloting it near schools. On a case by case basis, parking restrictions from crosswalks are being extended from 5 m to 15 m.	City has "Walkable Edmonton" group, which works with schools to promote walking (including parking further away), and providing classroom education. They also engage groups such as SHAPE and Safe and Caring Schools and Communities. Some schools have Safe Routes to School Maps, but the City doesn't get involved.	Most enforcement around schools is targeted at the beginning of the school year; after that it is upon request. Schools call either City Bylaws or the police detachment assigned to their school.
STRATHCONA COUNTY	Catchment areas are in place, but there are many exceptions. Most students travelling over a certain distance should be bused, but most buses aren't full. The increasing need for flexibility in students' schedules limits the further expansion of school busing.	Approach is based on depth perception. County is promoting overhead signage for signed and marked pedestrian crosswalks due to their greater visibility. Biggest challenge with the controlled crosswalks is the false perception of safety created among pedestrians. Also started to use "sharks teeth", to mark yield lines at midblock crosswalks.	Their sidewalk and pathway system is extensive. The school boards are very active in the development of safe routes to school, working with SHAPE and others. There is also a "missing links" program aimed at identifying missing links in the sidewalk, pathway and multi-use trail network.	City bylaw staff enforce illegal parking, and police ticket for illegal u-turns and some on-street parking violations.
CITY OF LEDUC	Both school bus and public transit are well-used. Sufficient parking on-site is provided for school buses, preventing the need for on-street facilities. Requests for drop-off bays are common.	City provides supplementary signs to alert drivers of children crossing near schools. Zebra crossings are provided at all midblock crosswalks. Due to the rural nature of some roads, strobe lights are provided on the outside of pedestrian crosswalk signs to draw driver attention to pedestrians.	The City is unaware of formal programs that exist to promote active transportation. The biggest issues are high-school students standing at the side of the highway while waiting for buses.	Photo radar and rotating speed reader-boards are also in place. They anonymously collect speed and data, and appear to be having a positive effect.
CITY OF RED DEER	School bus rates are approximately 20-30%. Most trips are by private vehicle. The threshold for eligibility may be lowered to qualify.	AMA student patrols are in place at about half the schools, and is well-run and well-received. The City's new crosswalk policy will also recommend curb extensions at patrolled crosswalks and ladder crossings at midblock locations.	Walking rates are very low: <5% Commemorates international walk day. Encouraging SHAPE to work with one of their schools, to develop "suggested routes to school". Converting from sidewalks to asphalt trails. Starting a carpooling program, and inviting schools to register.	RCMP are present at least once per month at each school to conduct speed enforcement (either manned or automated), and additionally complaint-based.
CITY OF CALGARY	Like in St. Albert, the numerous specialized school programs result in increasing busing and long routes. Some schools have 25 buses.	The City has successfully piloted RRFB's in advance of crosswalks. The City looks at moving crosswalks to the safest locations, and then enhancing them, typically with curb extensions and overhead flashers. They also differentiate crosswalks near schools by painting ladder style markings.	Active programs include Walking School Bus programs. Safe routes to school are in place at some schools, developed by Parent Advisory Committee groups. Biggest issue is parents not parking far enough from the school and then walking.	Enforcement is challenging with the number of school zones in the City and the extended hours. Encouragement has greater long term potential for reducing speeds.


SCHOOL BUS


Sidewalk
Zebra Crosswalk
Zebra Crosswalk

6.0 CITY-WIDE STRATEGIES

6.1 Philosophical Approach

The suggested approach to improving traffic safety along journeys to school recognizes that:

- School areas have *unique risks and traffic patterns* compared to other land uses; therefore, they need to be treated differently than other roadways; however, this must be done with the understanding that the *same roads are used for other purposes* outside of school times.
- Additional measures (such as patrols and additional temporary signage) is effective specifically for the peak in activity and the majority of safety issues last an average of 30-60 minutes per day (15-30 minutes in the morning and 15-30 minutes in the afternoon). There is an assumption that there will be public acceptance.
- Parents/students need to be in a position where they feel that *they have a choice* regarding how they get to/from school; parents should not feel that they are forced to drive their children to/from school because of a lack of other viable options.
- It is encouraging that *Traffic Safety* is among the main considerations when it comes to mode choice; this indicates that that *parents and students are attempting to manage their own risk* in their journeys. However, *we do not want Traffic Safety reasons why students avoid active transportation*; therefore, the risks need to be reduced such that they feel safer along their walking or cycling journeys.
- Further to this, some perceptions need to be replaced within the facts: that pedestrian and cyclists are *not involved in a disproportionately higher number of collisions* compared to motor vehicles alone.
- *Pedestrians and cyclists, being the more vulnerable users of the systems* compared to vehicles and buses, should be given priority where conflict points exist, particularly on the school grounds and at key crossing points in the vicinity of the school.
- Factors that are more difficult to control from the source can still be *managed through proactive planning*; such as wearing clothing and footwear appropriate to the weather and wearing reflective clothing to increase visibility during dark conditions.
- Priority (both in time and space) is to be given to the travel *modes that create the least safety and operational problems* around schools. For example, school bus transportation should be given superior access to the school entrances than private vehicle.
- Pedestrian crossing control devices should *not be installed simply based on requests* from parents. Several studies have shown that such installations do not reduce collisions, and this is attributed in large part to not using the devices properly or to the false sense of security that it creates (e.g. assuming all cars will now stop). Instead, they should be based on factors that reflect risk, such as the number of students and the available crossing opportunities

- The time, effort and finances to be provided for school traffic safety should be with the objective of creating a minimum baseline for all schools, and proportional to the risk present at each school.
- At the end of the day, the realization that we are all neighbours, classmates and fellow citizens should dictate our behaviours and the quality of our interactions.

For the above reasons, several of the strategies developed are oriented towards creating safer journeys for pedestrians, cyclists and school buses. While several of the strategies are expected to increase safety for the occupants of private vehicles; increasing safety for private vehicles is dependent on numerous other factors that are more difficult to influence (such as in-vehicle behaviours, distractions and vehicle design) and therefore not the emphasis of this review.

Adhering to this philosophical approach is expected to go a long way towards providing more enhanced journeys to and from school for years to come. Sections 6.3 to 6.6 describe the strategies developed for each of the four E's (Engineering, Education, Encouragement and Enforcement).

These strategies were developed based on all of the analyses and research conducted, including the factual information obtained and concerns raised in the engagement activities that were validated by the study team or reflect perceptions that negatively affect student behaviours. Additional strategies and more detailed descriptions of each strategy are included in the report.

The four E's are to be thought of as multiple angles that complement one another to address the same issues. While some of the issues may be primarily addressed through one E or the other, the results are typically far more effective through reinforcement of the other E's. Changing the built environment has the potential to remove risks entirely, as well as to shape behaviours and accommodate uncertainties. However, further and long-term gains in safety will be made through cultural change, which is achieved primarily by initiatives related to the education, encouragement and enforcement.

6.2 Engineering

Engineering strategies are generally the easiest to implement because they are tangible, have a known cost, have documented effectiveness; and their effectiveness is easiest to measure. In the parent survey, engineering strategies were also resounding perceived as the most effective of the "E-strategies".

Engineering solutions comprise changes to infrastructure along the road fronting the school, on the school site, within the pick-up/drop-off zone and along the surrounding road network along the journey. They can range from the provision of crossing facilities, roadway geometric changes, traffic calming, and changes to signage and pavement markings or parking/

stopping/turning regulations. Some of the engineering strategies are recommended for consistent application at all schools, and others in response to school-specific issues. Innovative engineering strategies such as the use of real-time and high visibility crossing facilities as well as perceptual devices and those that that have the potential to incite behavioural changes are encouraged.

Overall, the engineering strategies consist of site planning, design, traffic control, operations, and maintenance activities. The overarching concepts, in support of the previously describe principles and philosophies, are as follows:

- Provide facilities that *encourage a shift from private vehicle transportation* to school bus and walking and cycling, and provide choices;
- *Minimize conflict points* between pedestrian and vehicles, both on-site and on the road;
- *Optimize the use of space* for different purposes at different times; and
- Provide *enhanced* crosswalks at the *safest* locations.

The engineering solutions are described in TABLE 6.1.

TABLE 6.1 ENGINEERING STRATEGIES

ENGINEERING STRATEGY	ENGINEERING STRATEGY OPTIONS
Provide Facilities to Meet the Demand For Pick-Up/Drop-Off	Reallocate Street Space – sign curb space for pick-up / drop-off and short term parking space in locations providing safe connection to the school. Make Existing Space More Efficient – by signing and enforcing No Unattended Vehicles in pick-up/drop-off zones. Construct New Parking Facilities – new parking and loading areas, on site wherever possible
Reduce Jaywalking In Front Of School	Provide Crossing Facilities – consider providing a crosswalk along the desire line if demand warrants it. Fencing or landscaping may be required to encourage use of facility. Restrict Stopping on Far Side – install No Stopping signs on the street opposite the school. Education, monitoring and enforcement of zone may be required.
Prevent Parked Vehicles from Blocking View Of Pedestrians	Install Curb Extensions – curb extensions at all major crosswalks to the school are recommended (for example, at the main crosswalk in front of the school). This would physically prevent parking close to the crosswalk, improve sight distances between pedestrians and motorists, and reduce the length of crossing (reducing exposure of pedestrian). These would also highlight the signs (and patrollers, if in place). Review Sign and Markings – ensure adequate sight distance is obtained with existing No Stopping area and adjust if necessary. Parking Restrictions Near Crosswalks – it is suggested that “no stopping signs” be provided at least 10 metres (and preferably 15 metres) in advance of the crosswalk and at least 5 metres after the crosswalk. Municipal Traffic Bylaw 23(3)-K currently only requires 5 metres on either side.
Improve Crosswalk Awareness / Compliance	Raise Conspicuity of Crosswalks – widen the parallel pavement markings from 10 mm to 20 mm, or provide zebra or ladder markings. Recessed Yield lines or Sharks teeth – pavement markings placed in advance Rapid Rectangular Flashing Beacons – this technology is/will soon be an approved MUTCDC

ENGINEERING STRATEGY	ENGINEERING STRATEGY OPTIONS
	device. Monitor the Calgary experience and then decide on pilot locations for installation. Raised Crosswalks – crosswalks with a raised profile force drivers to slow down, which will likely increase yielding rates. They are also more visible and attractive to pedestrians. In-street Crosswalk Signs – on wider roadways, these provide a cue directly in the cone of vision Automated pedestrian detection – this has now been tested by several municipalities in Western Canada, and the technology is becoming more reliable.
Curb Speeding In School Zones Outside Peak Periods	Raise Awareness of Reduced Speed Zone – provide a gateway entrance to the school zone with centre medians and/or curb extensions. Consider Road Diets – a couple of opportunities exist to reduce 4 lane cross-sections down to 3 lanes plus parking or pick-up / drop-off zones.
Make More Efficient Use Of Pick-Up And Drop-Off Facilities	Improved Signage – reinforce the No Parking message by including a No Unattended Vehicles tab with the signs. Split Areas – define bus only and parent only areas, even within the same lane Optimization of use – permit parent drop-off in bus zones outside of peak bus times
Accommodation During Winter Conditions	Implement Priority Snow Pick-up – In areas where pedestrian activity occurs, priority could be increased to pick up plowed snow to reduce impacts. This could occur on street and on school site. Maximum Windrow Policy – develop a policy where the City will respond to windrows that exceed a certain height. The City of Edmonton's policy can be reviewed for reference. Develop Smartphone Application – students can report windrows to City
Enhance Pedestrian And Cyclist Routing Between Street And School	Provide Pedestrian Connections – A designated route should be provided to the school entrance that could include new sidewalks (or painted lane edge in interim), and crosswalks in parking lots. Sidewalk extensions (or crosswalk continuity lines) across driveway entrances would identify pedestrian priority. In some cases, the school entrance may be in the back, but a walking route may need to be provided if these exist/entrances are used, particularly if they lead directly into the parking lot.
Minimize Pedestrian Conflicts In Parking Lots	Provide Visitor Parking Adjacent to School – conflicts are minimized if the visitor parking and pick-up/drop-off facilities are adjacent the school with a sidewalk connection. Provide Staff Parking in front of School - Staff parking can be relocated to locations within the parking lot between the sidewalk since they typically park before students arrive and un-park after students leave, and are therefore unlikely to conflict with pedestrians.
Minimize Conflicts Between Bus And Parent Loading Activities	Align Signage with Bus Schedule – if the bus schedule is well adhered to signage can reflect the short time requirement for No Stopping – Buses Only. During other times the prime space may be used by others. Provide Alternatives – sign adjacent space for pick-up / drop-off activity. Education and Monitoring – may be required to encourage parents to abide by the regulations.
More Consistent Application Of Standards	Promote Standard Practices – as standards evolve, signs and markings should consider reflecting the new standards and undertake upgrade programs. On-site signage should reflect the same standards to maintain consistency with off-site signs (e.g. one-way and do not enter signs). The new TAC *Pedestrian Crossing Control Manual* (2013) standards should be followed for the installation of overhead pedestrian crossings control devices.
School Zone Warning Devices	School Zone Flashing Beacons – these beacons installed on the school zone signpost provide a clear indication of when the zone is in effect, and should be phased in at all other school zones if possible, for consistency. School Zone Sign Post – if possible, the post should have a maximum of 4 signs, to be able to be quickly read and processed by drivers before entering the conflict area. Information that

ENGINEERING STRATEGY	ENGINEERING STRATEGY OPTIONS
	is already well understood by the public can be considered for removal. This can be confirmed through a survey. School Zone Times – leave the start and end times as is. Although the peaks in activity are very short periods within these times, they provide for flexibility in school hours and school bus transportation trips that may not be ahead of or behind schedule. End of Zone – Provide the speed limit wherever possible Crosswalks – If crosswalk nearby, include it in the school zone Long zones – Provide reminder sign within long zones (refer to TAC guidelines)
Provide One-Way Circulation in School Parking Lots	One-way circulation is recommended as much as possible, and for new schools. One-way circulation drastically reduces the number of conflict points. If the parking lot is of sufficient width, multiple lanes can be provided, each with a particular purpose (e.g. bus PU/DO, immediate PU/DO, through lane). They can also be separate by curbs where beneficial and practical.
Encourage and Reinforce One-Way Operations	Curb and Medians – physical improvements may prevent motorists from knowingly entering wrong way driveways. Driveways - Make them inbound-only and outbound only Signs - Provide larger, properly-oriented “Do Not Enter” and “One-Way” signs at driveways Pavement Markings - Arrow-markings within parking lots Angle parking - Consistent with direction of parking lot
Provide Pathway Lighting	This would assist in identifying walking or cycling hazards. Pathway lighting is also an element of Crime Prevention Through Environmental Design (CPTED)
Maintenance of Trees / Shrubs	The City’s program should include regular patrolling around schools and pathways to identify locations that may obscure pedestrians entering the roadway, or where strangers may be lurking.
Special Crosswalk Facilities	It is understood that the City is moving towards phasing these out and replacing these with pedestrian signals (half-signals). If this continues to be the direction, the City may want to revise its warrants for pedestrian signals to lower the minimum thresholds. This decision should only be made further to a larger review of the hierarchy of crossing control devices.
Road Diets	Opportunities to reallocate road cross-sections to encourage lower speeds and more safely accommodate modes with different needs. This should only be done, however, with adequate consideration of winter conditions (since this may further narrow the cross-section), and only in conjunction with capacity analysis, to ensure the road can continue to meet its function.
Review of Engineering Policies and Standards	Some of the policies that may need to be reviewed to provide the tools to implement may of the recommendations of this report are: • Review hierarchy of crossing control devices to reflect input from this review • Snow and ice control measures
Safety Monitoring and Evaluation	To test the effectiveness of these devices, especially the ones that are expected to reduce speeds and increase yielding rates at crosswalks, it is suggested that BEFORE and AFTER data be collected. Speed data can also be published, to correct perceptions about actual speeds.

6.3 Education

Educational strategies are aimed at better educating regarding traffic safety. Educational strategies need to consider the *message*, the *target audience* and the *means of communication*.

Traffic Safety Messages

Key educational messages have been developed based on the results of the engineering visits, extensive engagement activities (including questionnaires, open houses, focus groups, and best practice research.

- Rules of the road: e.g. the speed limits, who has the right-of-way
- School policies and procedures: e.g. permitted locations and durations of PU/DO
- Techniques for certain modes: e.g. how to use/repair bicycles
- Safe routes and risk management: e.g. the point, pause and proceed process

While not traditionally an educational objective, is to also important to educate parents and the general public about:

- New facilities, to increase the chances of facilities being used as intended and therefore maximizing their effectiveness.
- Success stories, so that there is an understanding about what strategies work, and so that they can see the outcomes of their efforts.

Audiences

The target audiences for educational messages are:

- Students;
- Parents;
- Staff;
- Neighbours;
- Bus drivers;
- Crosswalk patrollers;
- The general public.



Among the most critical sub-groups for educational messages are:

- Members of user groups: e.g. parents who drive their students to school; and
- Drivers who fail to comply with the rules of the road.

For students, the educational messages will need to be customized for the different age groups.

Media of Communication

The media of communication for educational messages depends upon the local culture, existing communication systems and resources, and should consider the changing technology. Suggested media to consider include:



- Events;
- The classroom;
- Newsletters;
- City website;
- Other websites and social media;
- Videos;
- Contests; and
- Apps and games.

Policies and Regulations

Schools may develop new policies that support, for example, active transportation modes. School Divisions may wish to prepare a template, using the findings of this study, to develop a template for schools to prepare a policy document that formalizes its teaching, supervisory and maintenance activates with respect to enhancing traffic safety.

- the delivery of classroom exercises
- partnering with external groups promoting active transportation modes
- assigning additional staff to supervise during peaks in pick-up / drop-off
- management of the use of school entrances

The School Divisions and City can also develop a united calendar that takes advantage of publicity that already exists, such as Walk to School and Bike to School days, particularly to promote active transportation modes. Specific educational strategies are listed in TABLE 6.2.

TABLE 6.2 EDUCATION STRATEGIES

EDUCATION STRATEGY	EDUCATION STRATEGY OPTIONS
Educate students/parents about rules of the road	Include knowledge about the rules of the road in classroom activities Regular Newsletters. Schools typically already provide a small section in their newsletter, but these can be enhanced. The school districts may wish to prepare sample inserts, conveying similar messages to all the schools. Specialized Newsletter: It is recommended that at least once a year, traffic safety be featured in the school newsletter, or that a separate newsletter be issued at the beginning of the school year. The School Districts may want to develop a template that all of its schools can use.

EDUCATION STRATEGY	EDUCATION STRATEGY OPTIONS
	Safety City: Kiwanis Safety City in Edmonton is operated through Alberta Safety Council. It is a 90 minute program geared towards 4 to 7 year old children. Role playing is used to teach kids important safety rules while they are "walkers" and "drivers" on the streets of Kiwanis Safety City, using battery powered scooters. More information is provided on its website.
Rules and Policies in Support of Traffic Safety	Further to the suggestion above, the City and School Districts may develop a set of policies that will give them the tools to program and implement the recommendations of this report. For example, the City may adopt new policies for the installation of curb extensions and stopping restrictions at school crosswalks.
Public Traffic Safety Committee	The JPSC struck for this initiative should continue to provide overall leadership through to the implementation phase. It is suggested that it be in place in some form at least one year, to finalize an implementation plan for the recommendations of this review. At that time, the committee's mandate or make-up can be revisited. The presence of an ongoing committee will be critical to the long-term success of the SJ2S initiative.
School-Based Traffic Safety Committee	To help institutionalize traffic safety at the school level and lead the decision-making process, it is suggested that the Parent Advisory Committees develop a specific mandate related to Safe Journey, or that a separate committee be struck for this purpose, consisting of select staff, parents and possibly senior-level students as guests or as required. Although the School Principal's involvement will be valued, decentralizing this function from the Principal's office will expand the engagement and the opportunities that are available.
Enhance Student Patrol Program	The presence of student patrols and the equipment they place in the roadway during peak traffic conditions make it much more obvious to motorists that there is an increase in activity. This approach conveys to the driver the real time risks, and reduces the need for permanent installations that may affect motorist mobility and compliance outside of school hours. As a result, they ae likely to achieve public support. However, the types of devices used should be standardized as much as possible to maximize their effectiveness. Patrols were observed to have the effect of "creating" desire lines along safer crossing points. Patrolling also instills the rules of the road, including "point, pause and proceed", and can help build leadership and create pride in traffic safety and serving fellow students. Given these benefits, schools should provide more incentive, and possibly make it a requirement, for students to become patrollers.
Training and Supervision of Patrollers	Training and Supervision: Patrollers generally appeared well trained, but there were several inconsistencies: e.g. placing devices inaccurately, standing in the roadway. It is suggested that an adult supervisor be provided on each side of the road to make communication with the patrollers easier, and an additional supervisor for each additional crossing. At certain unique locations (e.g. behind Rundle Elementary), patrollers are exposed to risks for which they may require special training and equipment set-ups to protect their own safety.
Adult Crossing Educators	The AMA is piloting an Adult Crossing Educator (ACE) program. It is suggested that the City consider using adult guards in situations where there are not enough older students to draw from (e.g. schools that only go up to Grade 4), or where specific movements need to be monitored and controlled (e.g. right-turn movements at SWCA/Woodlands). Paid adults are likely to last longer and perform slightly better than volunteers. Some jurisdictions such as London and Toronto employ Commissionaires to act as crossing guards. This is more costly but coverage is more assured. Although there may be a place for adult guards, it is suggested that the City and School Districts focus on further enhancing the Student Patrol program per the above suggestions, and consider adult guards where student programs are ineffective or where unique circumstances exist.

EDUCATION STRATEGY	EDUCATION STRATEGY OPTIONS
Public Education	Public education about traffic safety is critical. It is important that the topic deserve attention at times other than when there is a recent incident. Such incidents are symptoms of the system and not necessarily particular to the location where the incident occurred, and therefore may happen at any time. Successes should also be celebrated. The effective practices noted in this report should be publicized and shared. The relatively scarcity of school-related collisions should be celebrated, and further achievements on this front shared with the public, so that they can see the results of their input and efforts.
City Website, Safe Journeys Page	It is suggested that the Safe Journeys to School initiative of the City continue to be branded, to keep public attention and build on the public engagement that was started through the Joint Public Steering Committee and through this project. There are numerous opportunities for what can be done with the City's Safe Journeys page, from conveying some of the above messages, to gathering further input to announcing the implementation of new measures as they are implemented. The City's communications team should lead this process.
School Bus Drivers	Some of the concerns from parents (and reasons they didn't send their children on the bus) were related to the conduct of bus drivers. While these comments were more the exception than the rule, they can be considered by the School District. The greatest opportunity might be training drivers to develop a positive and trusting relationship with their students, to see the driving tasks beyond the mechanical requirements and create an enjoyable (or at least not discouraging) on-board atmosphere. This might include implementing fun elements such as providing small "rewards" to students who follow bus rules. An effort to investing in re-building the trust that has become lost between drivers and some students/parents would go a long way.
Speed Reader-boards (or speed display boards)	There appears to be a gap between vehicle speeds that are perceived by the public and actual speeds that are measured with industry-standard equipment. Speed reader-boards (boards that display actual speeds of approaching vehicles) are a proven tool to educate the public about travel speeds and change behaviour. Several guidelines available to maximize the effect of these signs. The City has recently obtained these boards, with the intention of rotating them among the schools in the City.
Reflective Clothing	It is critical that all students understand that "just because you see them, it doesn't mean that they see you". In most cases, drivers who hit pedestrians/cyclists say "I didn't see them". Pedestrians and cyclists who wear reflective gear are much more likely to be seen, particularly on winter days and in dark conditions.
Weather Barriers and Preparation	The number of students who go from walking or riding in the fall/spring to getting driven in the winter is significant. Further engagement with this group is necessary.
Neighbour Engagement	Stronger relationships with neighbours improves the road safety atmosphere in the school zone. Several schools already effective engage with neighbours.
Classroom Activities	Several activities have been presented in the Classroom Activity Toolkit prepared by the project team. It is suggested this be used as a starting point towards the development of a more customized and comprehensive curriculum regarding traffic safety. Although it was not strongly marketed during this project due to concerns available in-class time, the school districts may wish to encourage its use in preparation for the next school year.
Age-specific Lesson Plans	It is critical that both the messages and the media used be customized for each age group. The student survey results confirmed the appropriateness of the content of the Toolkit and the provincial curriculum itself, with lessons tailored to children's cognitive and physical abilities. Further efforts to provide tools specific to each grade can build on the child's knowledge each successive year.

EDUCATION STRATEGY	EDUCATION STRATEGY OPTIONS
Suggested Routes to School Maps	To help understand and manage their own journey, it is suggested that student develop maps indicating routes expected to be safe. In some cases, children are not fully aware that there are routes from the back of the school that are also viable, and likely with less conflicts than approaching to/from the front of the school. Such maps could also attempt to address security risks.
Walkabouts/Cycle-abouts	An important element of student education is the in-field component. Classroom activities will convey the concepts and a visit to Safety City will provide some simulations, but nothing will substitute for walking or cycling the school's facilities and the surrounding roadways.
Student Contests	Three ideas are presented for engaging students using contests: Art Contests: As was organized as part of the student engagement for this project, an art contest can be a fun way of involving younger students . Art contest can result in the work of winners being displayed on the sides of local buses, or civic facilities. They can also go beyond visual arts to performing arts and music. Video Contests: In this YouTube generation, making home-made videos has gained popularity and lend itself to this issue. Video contest that show, for example "how to" and "how not to" cross the street can be produced. Smartphone Application ("App") Development: There are numerous possibilities for the development of smartphone applications in support of Safe Journeys to School. Apps that could be developed may include ones that: • Could log your journey to school, including timing it • Allow you to easily note hazards and conflicts along the journey • Alert you when you are approaching a school zone • Measure the speed of your and other vehicles • Allow you to inform the City of any significant concerns, or areas where snow is yet to be cleared or where windrows are causing problems Any apps should be designed as pre- or post-journey apps, such that they don't become a source of distraction during the journey itself.

6.4 Encouragement

Encouragement is increasingly recognized as a more powerful and sustainable approach to behavioural change. By changing the way students and parents think about school safety and transportation, compared to the traditional command and control method, it is hoped that student traffic safety will be more highly valued and more effectively self-regulated. To address behavioural issues, encouragement strategies can be applied prior to or in conjunctional with enforcement strategies. Specific Encouragement strategies are summarized in TABLE 6.3.



TABLE 6.3 ENCOURAGEMENT STRATEGIES

ENCOURAGEMENT STRATEGY	ENCOURAGEMENT STRATEGY OPTIONS
Encourage More Walking	The engineering enhancements presented above are expected to make walking a more attractive option, particularly in the vicinity of the schools themselves. It is important that student be encouraged to use the facilities when they are installed, and to use them as intended, and to not reduce their level of awareness (e.g. still point or make eye contact with drivers when crossing the street). Some of the specific activities that the City and School Boards could continue and expand are: Promote walking in groups: The survey indicated that those who walk together do so because it's fun, and others walk alone because it's more convenient. Walking groups can consist of neighbours, who would be convenient to walk with. "Walking school buses": These are more organized groups of people. These can be groups who walk the entire journey, or groups that spontaneously stay together after they get dropped off by buses or parents a few block away from school. Some walking school bus programs in the country are highly advance with paid supervisors, e.g. in Ottawa Participate in walk to school days: These can be aligned with Provincial calendars for added publicity, and be accompanied by prizes, e.g. wearable reflective gadgets Discuss winter walking experience: this might reveal that there are myths or opportunities for overcoming these barriers. Contests: e.g. "Golden Shoe" award for walking the most in a year/month
Encourage More Cycling	Rates of cycling in the City of St. Albert were noted to be very low, even in June and September during clear and warm weather. Several suggestions are presented: Bylaw: Continue to allow students to ride on sidewalks. However, encourage older students and those who become more confident to use the road surface, to avoid conflicts between high-speed bicycles and pedestrians. "Cycling School Buses": Same idea as walking school buses, organized by parents/staff Events: Participate in "bike to school", "bike rodeos", "first riders' night" and other theme days to generate an interest in cycling, particularly at the elementary school level. Bicycle Safety programs**:** Offer programs for youth at St. Albert Bike Skills Park Winter Maintenance: Keep sidewalks clear of snow in the winter. Cyclists are even more susceptible to slipping than pedestrians. Training for students to ride during inclement weather will provide additional skills and confidence. Bicycle lanes: Provide bicycle lanes in the City, to start building a stronger cycling culture of cycling in the City, and hopefully greater tolerance on the road for cyclists. Incentives: Provide incentives for cycling, such as contest to track cycling distances, or free bicycle safety lessons or equipment; or priority for school activities. Advocacy Groups: Work with groups such as SHAPE and Cycle Edmonton who already have some resources and expertise to encourage more cycling. Public Survey: As a starting point, the City may wish to conduct a survey of the public to identify barriers to cycling and likely interest, prior to investing in the implementation of cycling facilities.

Encourage More School Bus Transportation	The School Districts are invited to discuss the possible following enhancements to school bus transportation access or to the journey itself, if they haven't already: Driver Training: (discussed under education strategies) Cost: Cost was identified as a barrier for families with 2 to 3 children, since discounts only apply to families with four or more children (which is rare). The School Divisions may choose to revisit this model in light of this feedback. On-board Storage: The available storage for bags and large items (such as sports and musical equipment) that students need to take to/from school was noted as an issue; the School Divisions may wish to respond to this by installing racks on buses. On-board Surveillance: Several of the buses have been fitted with three cameras, which contribute to a more peaceful and secure journey, enabling the driver to focus on the driving task. Safer Bus Stops: Some parents were concerned about their children's ability to get to the nearest stop or the safety of the stopping location. School Districts assess safety along their routes at the start of each year; the location of bus stops should be part of this review. Where possible, School Districts can liaise with the City to determine safer locations for bus stops (e.g. to confirm that sight lines are clear and that buses can safely pull over). The possibility of using of public transit stops can also be explored, due to the available shelters and benches. The identification of safer bus stops should provide a balance between the proximity to residences and the benefits of having fewer, but safer bus stops. Review Routing for Operational Efficiencies: This was not part of this review, but it is recommended that every opportunity be taken to increase the utilization of buses in order to encourage the shift to school busing without adding buses to the fleet. It is acknowledged that re-routing could move problems elsewhere; therefore, these trade-offs need to be balanced. Collision Avoidance Technology: Vehicle equipment is evolving such that safety features are becoming more widely available and more effective. Particular camera devices detect and warn the driver of lane departure, following too close, pedestrians and cyclists in the path and speed limits (it reads the speed limit signs apparently). The cost including installation is on the order of $1,000 USD per vehicle. Further investigation can be conducted to reveal any particular experience with school bus fleets, whether the system is GPS based, if the system can include blind-spot detection and whether the system is capable of recording video.
Enhance Management of School Bus Fleet	The above suggestions are intended to encourage a mode shift from the private automobile to school bus transportation; therefore, they should not be aimed at students who already walk or bike to school. In addition, due to the limited capacity for school buses in the pick-up/drop-off areas at most of the schools, bus transportation should only be promoted if it is not expected to result in additional buses being added to the fleet; instead the objective should be to increase the utilization of existing buses.
Encourage More Carpooling	None of the engagement activities indicated that students partake in a carpooling program. Although there may be smaller, private programs in place. The City has a page that promotes the on-line carpool service www.carpool.ca and sponsors carpool month, but it may wish to more actively promote the program to schools, who can register as a supporter.

Active Transportation Targets	The City and School Districts may wish to set targets to further motivate and encourage progress. These may be part of overall City targets, or specifically set for students. The role of community and advocacy groups will be critical to the success of these targets. Link between active transportation and health benefits and school performance can also be communicated.
School community-based social-marketing pledge	A community pledge can be made in which parents and students make a pledge, e.g. not to speed or park illegally or jaywalk. Stickers on vehicles or clothing can be provided for publicity.
Encourage Parents to Park on the School Side, Further from School	Parents should be advised to park further from the school but on the same side of the street as the school. At many of the schools, parking spaces along the school side of the street are saturated, particularly in the afternoon. These are locations where an area can be defined for pick-up/drop-off, possibly with a pullout or staff/parent volunteers to meet them and safely walk together so that parents don't have to bring their vehicles to the school property and contribute to the congestion.
Encourage Parents to Approach from School Side	In conjunction with the above strategy, and to minimize jaywalking across the street, parents can be encouraged to approach the school from the direction where the school is located. Since this may increase the risk of u-turn movements, parents are discouraged from conducting these manouevres, and can be informed about routes in the network where their turning movements can be more safely accommodated.
Encourage Staff to Reverse-in Parking	Where staff parking potentially conflicts with pedestrian walking routes between the road and the school entrances, staff should be encouraged to reverse into parking stalls, so that when departing, sight lines to student pedestrians who may be involved in afterschool activities are much clearer. Where angle parking is provide, this may require that the orientation of the stalls be re-oriented to accommodate reverse-in parking.
Anti-distraction campaign	The role of distraction in collisions is growing and still under-reported. Some type of distraction (including eating, arguing in the car, etc.) plays a role in a significant proportion of collisions. The use of headphones, smartphones or tablets during journeys detract from attention to traffic (including on-site). On the school grounds, several schools have policies to limit the use of smartphones on the school grounds. Schools may wish to discuss extending these limitations to the entire school property, including the parking lot and the nearby driveways and crosswalks.
Positive Encouragement	Mail-outs to all parents specifying traffic/parking rules (research shows this impacts parent behavior for a month) Coffee cards for parents who are observed to follow traffic rules or walk with their children to school (research shows this impacts parent behavior for a few months)
Role Models and Champions	Staff, parents and senior students should recognize that they are role models for the younger students, and may choose their behaviours (such as not jaywalking) in recognition of this. Some individuals (such as students) will emerge as champions for the traffic safety initiative in the community.

Campaign to "try it for a day"	Trying alternate modes of transportation often can break down barriers, provide a new appreciation for the challenges that certain modes have when sharing the road (e.g. motorists appreciating the difficulties faced by cyclists), and helps students and parents see things from another point of view. Input could be collected from students and parents immediately following their experience. Schools could choose to make such a campaign a requirement.
Schools take a leadership role in self-enforcement	Effective role modelling and traffic safety education at schools ensures that students receive consistent positive messaging about traffic safety. There are number of best practices for schools to consider: School-based rules which ensure that school bus and car traffic are separated, that the closest drop-off areas are reserved for the youngest students, and that the parking lot rules are non-contradictory and clearly signed. Education programs for students, early in the year, to set expectations. These can include classroom sessions, school assemblies, and presentations by local law and bylaw enforcement. Communication with parents early in the year, to set expectations. These can include mail-outs, email newsletters, and direct conversations with parents. Teacher enforcement including friendly reminders to students at the end of the day. Students designing issuing tickets to parents. This was successfully implemented in Ontario. Students encouraged to be ambassadors of their household, with the objective that their behaviours will rub off on their parents (such as they did in the successful shift towards household recycling)
Promote Living Respectfully	Much of the conflict and frustration during peak activity at schools could be managed simply by recognizing that all parents, students and staff are part of the same community, and that change starts with each individual. The Way to Be program, developed by the Alberta Motor Association, emphasizes these principles and encourages both parents and students to analyze and take ownership of their own behaviours, towards enhanced traffic safety. It is strongly suggested that the City sign up as a pilot community for the implementation of the Way to Be program. Being a pilot community allows the City and its partners to customize the content of the program to meet its local needs, before the program is launched throughout Alberta in Fall 2015.

6.5 Enforcement



Enforcement differs from encouragement in that it involves penalties for non-compliance. Enforcement aims to uphold a minimum standard, protect the more vulnerable and deter repeated and aggressive behaviour. Enforcement strategies are focused on addressing behaviours such as speeding, illegal/unsafe manoeuvres, and violations of parking regulations. Specific Enforcement strategies are summarized in TABLE 6.4.

TABLE 6.4 ENFORCEMENT STRATEGIES

ENFORCEMENT STRATEGY	ENFORCEMENT STRATEGY OPTIONS
Consistent of rules across locations and through time	As drivers and students pass from one school to the next, the same safety rules need to be communicated and reinforced. Meanwhile, enforcement should retain a degree of unpredictability, in order to solicit compliance even when law enforcement is not visibly present. One of the opportunities to make traffic rules more consistent across all schools. School parking lot signs are currently inconsistent and at times, contradictory. Signs could be redesigned to be simpler to understand, consistent across schools, and easier to read.
Conduct enforcement blitzes during peak periods.	Begin by issuing warnings, followed by tickets. "Enforcement Blitzes" increase the visibility of traffic safety enforcement and often generate interest in the media, thereby deterring traffic violations in the community at large. The unpredictability of such heightened enforcement measures serves to improve everyday compliance. They also significantly increase the probability that a serial violator will be caught.
Community-based enforcement programs: e.g., "Speed Watch"	Community-based enforcement programs offer a presently untapped opportunity to leverage police resources. In school zones, specially-trained community volunteers could monitor speeds using portable radar equipment and electronic signboards. The data collected could be used to publish regular bulletins on progress towards 100% compliance in school zones. Many such programs already exist across North America, such as in Vancouver, where a Speed Watch program has been in place since 1996. In some communities, the licence plates of violators are recorded and sent to law enforcement for follow-up warnings by mail. On an intermittent basis, police can be stationed after the community warning patrol to ticket speeders; this in turn increases the seriousness with which the volunteer program is viewed.
Structure fines to reflects the level of risk associated with the violations	Traffic violations in school zones present an elevated level of risk because children are vulnerable road users. Context-specific fines should be considered for school zones. Bylaws enacting double fines could be considered in St. Albert for the most dangerous and common violations identified in this study, such as U-turns, speeding and distracted driving. Given the growing public support for increased enforcement measures in school zones, the City of St. Albert could consider lobbying the Province to enact double fines for traffic violations in school zones across the province. It has been more than ten years since the 2003 revision of fines in the Alberta Traffic Safety Act, and there is precedent for such revisions. The Alberta Roadbuilders and Heavy Construction Association successfully led a movement for the adoption of double speeding fines in construction zones, adopted in the Traffic Safety Amendment Act, 2005.
Officers dedicated to school safety	If resources exist, having RCMP officers dedicated to traffic safety can offer significant benefits by building a stronger relationship, sharing ideas between schools and helping bring a level of consistency in the enforcement of good practices across the City.

6.6 Overarching Strategy

The recommended City-wide approach to improving the safety of journeys to school is depicted graphically in FIGURE 6.1. This holistic framework (nicknamed the "Safer Journeys Wheel") illustrates the key principles, strategies, tools and approaches that can be leveraged in support of safer journeys, with the perpetual goal of safer journeys, and the need for a cultural transformation among all involved in order to achieve this goal.

This framework reflects the *Safer Systems* concept, in which success is achieved by realizing the co-dependency of and interactions between the various elements; and by recognizing that the most vulnerable users of the system must be placed at the highest priority and that this be implemented through measures such as improved facilities and lower vehicle speeds.

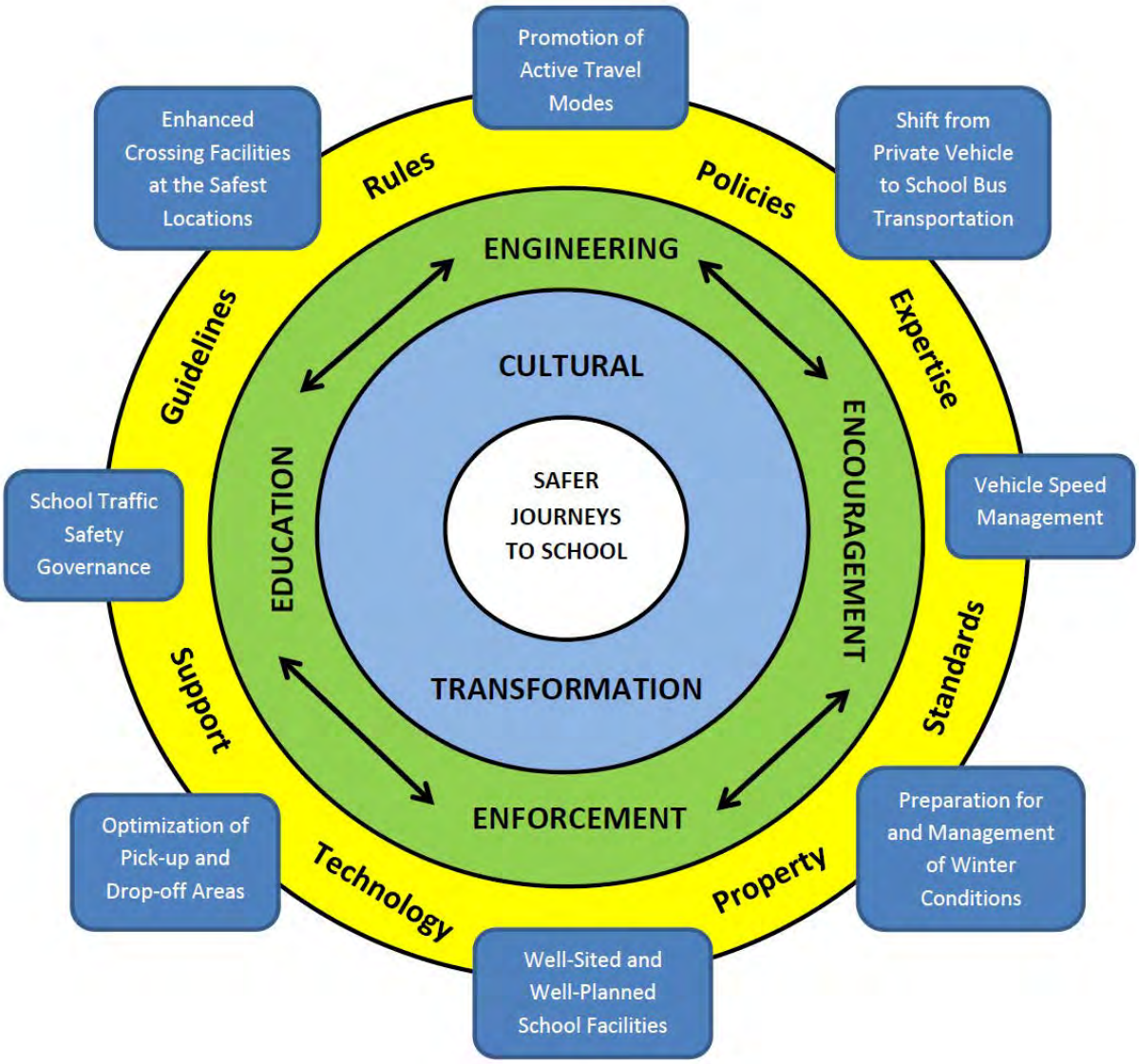


FIGURE 6.1 HOLISTIC FRAMEWORK FOR SAFER JOURNEYS TO SCHOOL ("SAFER JOURNEYS WHEEL")

The framework includes eight safer journeys principles (the blue boxes), which if upheld can have a significant impact on school traffic safety. For each of the eight areas, multi-disciplinary strategies based on these principles have been developed, and are summarized in TABLE 6.5. These strategies were developed based on all of the analyses and research conducted, including the factual information obtained and concerns raised in the engagement activities that were validated by the study team or reflect perceptions that negatively affect student behaviours. Additional strategies and more detailed descriptions of each strategy are included in the report.

The strategies listed in TABLE 6.5 for each of the eight Safe Journey's principles are further described in TABLES 6.1 to 6.4. Some of the critical components and those recommended for priority implementation are further described in Section 7.3.

To make journeys to and from school as safe as possible, a cultural transformation must accompany the strategies outlines in this report. A key opportunity identified is the *Way to Be! – Living Respectfully* Program of the Alberta Motor Association and Safe and Caring Communities of Alberta. The TranSafe team recommends that the City consider piloting this program among its schools.



TABLE 6.5 CITY-WIDE STRATEGIES FOR SAFER JOURNEYS TO SCHOOL

Principle #1: Promotion of Active Travel Modes	
For students living closer to school, the promotion of walking and cycling will lead to a more sustainable reduction in congestion and safety issues around schools. This can be pursued both through encouragement, by understanding the barriers and providing resources, collaborating with advocacy groups, and providing infrastructure that more safely accommodates these modes, particularly for cyclists. An enhanced walking and cycling culture is expected to increase the safety of these modes by making their presence more visible, predictable and acceptable. While an increase conflicts may occur in the short term, they are expected to decrease over the longer term.	• "Walking/Cycling School Buses" • Theme days and contests • Discuss weather barriers • Do walkabouts/cycle-abouts • Develop safe routes to school maps • Work with cycling groups • Pilot bike lanes / road diets • Rear pathways / alternate entrances • Keep facilities free of snow
Principle #2: Shift from Private Vehicle to School Bus Transportation	
For students living further from school, a shift from private vehicle to school bus transportation is expected to reduce congestion and the associated safety issues *provided* there is sufficient space for buses on-site, that no additional buses would be required (i.e. increase in utilization), and that improvements are made to attract more riders. The key measures to encourage this shift include increasing cost-effectiveness, improved safety and a superior on-board performance. Restoring a culture of safety on school buses will be a critical first step, which depends on the reliability and efficiency of the system, as well as the implementation of improvements to school bus transportation.	• Driver Training programs • More flexible cost structure • On-board storage • On-board surveillance • Address issues at bus stops • Optimize routes to avoid congestion • Proximity to school entrances • Collision avoidance technology • Winterization of school buses/tires • Spacious passenger waiting areas
Principle #3: Vehicle Speed Management	
Lower vehicle speeds result in higher yielding rates at crosswalks, make pedestrians and cyclists more comfortable when crossing the roadway, and reduce the risk of injury in the event of a collision. Compliance with school zone speed limits is best achieved through a combination of engineering speed reduction measures and education, encouragement and enforcement efforts. The most effective speed reduction measures are physical in nature (such as road narrowings); these can be supplemented by temporary measures such as patrols and cones during peak school traffic. Measures such as reader-boards can both educate and enforce.	• Gateway treatments • Real-time flashers • Speed zone reminders • Speed reader-boards and follow-up enforcement • Rewards for compliance • Raised crosswalks/curb extensions • Targeted speed enforcement • Automated speed enforcement
Principle #4: Preparation for and Management of Winter Conditions	
Since the school year coincides with the most adverse weather conditions and walking and cycling trips are relatively rare in the winter, an approach needs to be taken to both prepare students/parents/vehicles for journeys to/from school during winter conditions, as well as to minimize the impact of these conditions on journeys to school, including the preservation of facilities in the vicinity of schools. An emphasis on geometric measures and signage rather than pavement markings will increase the chances that facilities can remain effective during winter conditions.	• Discuss concerns with students • Reflective/climate-appropriate clothing • Snow blading policy • Sidewalk clearing policy • Windrow clearance policy • "Winter app" to report windrows • Enhanced signage and warning • Enhanced crosswalks
Principle #5: Enhanced Crossing Facilities at the Safest Locations	
Crossing facilities should be provided at locations where sight lines are clear, away from speed transitions and where sufficient demand for crossing exists - and not at other locations. The City has a policy for providing crossing	• Revised hierarchy of controls • No Stopping within 10 m of crosswalks • Curb extensions/in-street signs • Use of zebra/ladder markings at school crossings

facilities, which should be reviewed given the concerns raised during the engagement opportunities. Where crossing facilities are provided, they can be enhanced to make them more visible, to provide real-time controls, to ease the crossing manoeuvre, and to encourage lower vehicle speeds. Geometric enhancements such as curb extensions and raised crosswalks are expected to be the most effective upgrades. Each of these has advantages and disadvantages, which are described in this report. Keeping sight lines clear is a critical function and should also be carried out right away for locations with identified obstructions.	• Raised crosswalks • Higher visibility markings • Enhanced Student Patrols • Temporary measures (e.g. cones) • Illumination of pathways/crosswalks • Advance warning measures, including RRFB's, yield lines and crosswalk warning signs • Maintenance of shrubs • Automated pedestrian detection • Adult guards for unique situation
Principle #6: Well-Sited and Planned School Facilities	
The majority of safety and operational issues take place on the road with frontage to the school. Therefore, most of these could be prevented by moving some of the pick-up and drop-off facilities onto the school site and managing access and conflict points. Facilities that are new or being redeveloped should include features that support Principles 7 and 8. One of the most notable features is to make the school accessible from the rear for pedestrians and cyclists, to decentralize some of the activity from the front of the school. This may, however, require additional staff supervision to manage multiple student access points.	• Multiple frontage roads • Separates access points for buses and vehicles/staff • Staff parking in central part of lot • Location of school entrances • Fences to prevent jaywalking • Stacking at the downstream end • One-way on-site circulation • Sidewalks outside of driveways • Reverse-in staff parking • Consistent on-site sign content and format • Staggered hours for nearby schools
Principle #7: Optimization of Pick-up and Drop-off Areas	
It is not possible to significantly re-design most school sites; therefore, the pick-up and drop-off operations have to be optimized within the available space. Where possible, private vehicles and buses should be separated, with higher priority for buses (closer to school entrance or a dedicated school entrance), as well as revising the parking/stopping regulations to clarify the difference between stopping and parking and to give priority for immediate drop-off closer to the school entrance. Encouraging parking and walking from further away would also relieve congestion.	• Separation of buses and vehicles • Institute "No unattended vehicles" regulation • Shorter times for pick-up/drop-off parking • Restrict parking across the street • Possibility of shared zones outside of peaks • Use of positive/symbolic signing • Busing / parking patrols • Approach from/park on same side • Use of City parking lots where available
Principle #8: School Traffic Safety Governance	
The success of the above strategies will depend on the governance structures are put in place or maintained. School traffic safety will need to remain high on the City and School District priority list to continue the momentum and implement the findings of this report. The collaboration between the partners should be mirrored as much as possible at the School District and individual school levels. Besides increasing the chances of successful implementation, solid governance and leadership will set a good example for parents and students, which in turn will support the building of a stronger and more sustainable traffic safety culture. Keeping the public informed about school traffic safety initiatives may increase their support through improved behaviours, and continue to build a sense of community.	• Public traffic safety committee • School-based traffic safety committees • Dedicated funding for traffic safety • Continued and expanded collaboration between all partners • Standardized student newsletter content • Traffic fines that better reflect risk • RCMP members dedicated to school safety • Maintain Safe Journeys website • Implement/enhance curriculum • Review locations/corridors raised as concerns • Traffic Conflict monitoring program • Coordination with Alberta Traffic Safety Plan member


30 km/h
08:00-16:00
MON - FRI
PHOTO RADAR
ENFORCED


STOP
LINE
14:00 - 16:00
MON - FRI

7.0 SCHOOL-SPECIFIC STRATEGIES

The team identified over 100 school-specific strategies to enhance traffic safety along the journey to school. Each school Plan is provided in a separate Appendix (APPENDIX L TO APPENDIX MM). Each Plan contains:

- maps showing the school and surrounding facilities, and the on-site characteristics;
- a summary of the historical collisions in the neighbourhood;
- details and photos of the engagement activities, including the open house workshop;
- summaries of the parent and student surveys (the actual statistics are attached);
- completed site observation checklist;
- list of issues, each with an illustrative photo;
- list of suggested enhancements and type (i.e. which "E"), with depictions in some cases;
- likely implementation time frame (short-term, medium-term and long-term); and
- suggested agency to lead the implementation.

The recommended strategies are summarized for the existing schools in Section 7.1 and for the new schools in Section 7.2. Brief implementation guidance is provided in Section 7.3.

7.1 Summary of Recommended Strategies at 26 Existing Schools

Draft Plans for safe journeys to school for the 26 existing and 2 proposed schools have been completed. Each plan is a self-contained report, containing detailed findings, photographs and suggested short, medium, and long-term and enhancements, for the consideration of the JPSC. The identified strategies are summarized in TABLE 7.2 for the 26 schools. The tables include the improvement type, the predicted time-frame and the suggested "lead" for each strategy:

- The "type" of enhancement is one of the 4 E's. Engineering enhancements are not necessarily the responsibility of the engineering department.
- The lead is one of the City, RCMP, School District, or individual school. The identification of a lead is based on whether the enhancement is on or off the school site, the extent of the improvement, and other factors. It is assumed that anything engineering oriented on school sites would be addressed and funded through a District budget, as opposed to the individual school's budget. The lead and support roles can be refined based on further discussions between the partners as they work towards implementation.
- The time frames are defined based on funding availability (as opposed to risk level):
    - *Short Term – 1st Priority*: City projects that have existing budgets (operating or capital) that can easily be implemented and have a significant impact.
    - *Short Term* – can be addressed with existing operating and capital projects
    - *Medium Term* – using annual capital programs that require prioritization.
    - *Long Term* – require planning, design, and project justification.

Examples of the types of short-term, medium-term and longer-term strategies are summarized in TABLE 7.1.

TABLE 7.1 EXAMPLES OF STRATEGIES BY TIME FRAME

Short Term – 1st Priority Options: Options that already have budgets (e.g. operating or maintenance) and can easily be implemented.	
• Signage of parking regulations • Marked and signed crosswalks	• Signage of pick-up / drop-off zones • Sight line improvements
Short Term Options. Options that can be undertaken within the next 1-2 years with existing operation and capital funds of both the City and School Districts	
• Minor curbing using curb stops • Centre median delineators • Signage of off-street parking lots	• Parent parking control • Student Patrol program • Driver education through school notices
Medium Term Options: Options that can be undertaken within on-going City and School Districts capital programs but require planning and prioritization with similar types of projects. Expectations are that the measures can be completed within 2 to 3 years.	
• Curb, gutter and sidewalk installation • Traffic calming initiatives • Road widening for pick-up / drop-off facilities • Pedestrian crossing signals	• Concrete centre-medians • Parking lot reconfiguration • Pedestrian pathways • School time adjustments • Intersection traffic control upgrades
Long Term Options. Options that can be conceptualized but require planning, design and project justification. Typically these projects require either funding approvals based on their own merit (not part of an on-going capital program) or subject to future development plans. Therefore expectations are more longer term – typically completion would be 3 to 10 years.	
• New road construction • Road network classification changes • Trip reduction strategies	• Property acquisition • New / major expansion of on-site parking and pick-up / drop-off facilities

TABLE 7.2 SUMMARY OF SITE-SPECIFIC STRATEGIES FOR EXISTING 26 SCHOOLS

SCHOOL	STRATEGY	TYPE	TIME FRAME	LEAD
Richard S. Fowler Catholic Junior High School	Encourage walking and cycling to reduce parking demand	Encouragement	Short	School
	Provide pick-up / drop-off area on street	Engineering	Long	City
	Create pedestrian route to parking stalls	Engineering	Medium	District
	Create staff only parking area	Engineering	Short	District
	Replace no parking with no stopping signs	Enforcement	Short	District
	Provide "road diet" with bicycle lanes on SWCA	Engineering	Long	City
	Create pedestrian/cycling routes around perimeter of lot	Engineering	Medium	District
	Assign yielding priority to the school buses	Engineering	Short	District
	Upgrade crosswalk at Fairview Drive	Engineering	Short	City
Keenoo-shayo Elementary School	Redesign on-site pick-up /drop-off area to provide 3 "lanes"	Engineering	Medium	District
	Provide channelization between parking lot and crosswalk	Engineering	Short	District
	Enhance crosswalk visibility	Engineering	Short	District
	Supervise pedestrian movements	Encouragement	Short	School
	Review school bus routing and arrival times	Education	Short	District
	Permit buses to use on-street PU/DO area as overflow	Encouragement	Short	District
	Enhance one-way signs and markings	Engineering	Short	District
	Install curb ramps for on-site crosswalk	Engineering	Medium	District
	Remove parking spaces in conflict areas and enforce restrictions	Engineering	Short	District
	Upgrade special crosswalk to current TAC standard	Engineering	Medium	City
	Review crosswalk flasher timing at Sturgeon Road	Engineering	Short	City
	Monitor speeds along section with adjacent school zones	Enforcement	Medium	RCMP
	Provide school zone signs between the two schools	Engineering	Short	City
	Reverse locations of staff and scramble parking	Engineering	Short	School
	Limit on-street parking restrictions to peak bus times	Engineering	1st Priority	City
	Change from "no parking" to "no stopping" near crosswalks	Engineering	1st Priority	City
	Extend south sidewalk or pathway to front of school	Engineering	Medium	District
	Provide directional signing for pedestrians at east end of lot	Engineering	Short	District
Sturgeon Heights Elementary / Junior High School	Create pathways from sidewalk to school outside of driveways	Engineering	Short	District
	Narrow and formalize driveways	Engineering	Short	District
	Construct driveways with sidewalk let-downs (not curb returns)	Engineering	Long	City
	Mark and sign parking and access aisle direction	Engineering	Short	District
	Encourage longer term parking on east side	Education	Short	School
	Construct a Temporary Asphalt Walkway on west side of Hogan	Engineering	Short	City
	Construct a Concrete Sidewalk along full length of Hogan	Engineering	Long	City
	Relocate Signs at South Crosswalk to improve visibility	Engineering	1st Priority	City
	Coordinate School Start-Up Times with JJ Nearing School	Education	Short	School
	Install Crosswalk on South Leg of Dartmouth Intersection	Engineering	1st Priority	City
	Lengthen School Zone on Northridge Drive	Engineering	Short	City
	Connect School Sidewalk to Northridge Sidewalks	Engineering	Short	District
	Install Crosswalk on North Ridge Drive west of Northstar Close	Engineering	1st Priority	City
École Marie Poburan	Encourage walking and cycling to reduce parking demand	Encouragement	Short	School
	Continue to Encourage Efficient Use of Space	Education	Short	School
	Continue with On-Site Reminders and Enforcement	Enforcement	Short	RCMP
	Reconfigure East Parking Lot to Separate Pedestrians	Engineering	Medium	District
	Provide Curb Extension and Crosswalk at East Parking Lot	Engineering	Medium	District
	Provide Sidewalk from East Parking Lot to Park Ave	Engineering	Medium	District
	Provide Connection to Sidewalk at NE Corner of Site	Engineering	Medium	District
	Provide Connection to Sidewalk at NW Corner of Site	Engineering	Medium	District

	Provide a Sidewalk on the ESSMY Lane	Engineering	Medium	District
	Provide a Sidewalk on the West Access Lane	Engineering	Medium	District
	Clarify Signage to Reinforce No Unattended Vehicles	Engineering	Short	District
	Monitor Drop-Off Zone	Education	Short	School
	Increase Width of Sidewalk in front of school	Engineering	Medium	District
	Paint Line Back from Curb along sidewalk in front of school	Education	Short	School
	Increase Priority for windrow clearance	Engineering	Short	City
	Implement Adult Crossing Guard Program at SWCA/Woodlands	Engineering	Short	District
	Install Advance Warning Sign and Crosswalk Paving Textures at SWCA / Woodlands	Engineering	Short	City
	Install Traffic Signal at SWCA/Woodlands when warrants are met	Engineering	Medium	City
	Formalize Two Lane Approach Southbound on Woodlands at SWCA	Engineering	Short	City
	Monitor Left Turn Operations at SWCA/Woodlands	Engineering	Long	City
	Implement North and Southbound Protected Only Left Turns at Boudreau and SWCA Pedestrian Crossings	Engineering	Short	City
	Raise Pedestrians' Awareness of Turning Vehicle Conflict at Boudreau and SWCA Pedestrian Crossings	Education	Short	RCMP
	Install a Special Crosswalk on Poirier Ave at Parkwood Dr	Engineering	Short	City
	Construct Missing Sidewalks on Sir Winston Churchill Ave and on Boudreau Rd	Engineering	Medium	City
Vital Grandin Catholic School	Utilize Reservoir Access Road for Vehicle Circulation	Engineering	Long	City
	Paint Lines and Provide Signs for On-Site Parking Stalls	Engineering	Short	District
	Eliminate Parking Stalls Closest to Driveway	Engineering	Short	District
	Enforce Immediate Loading / Unloading	Enforcement	Short	School
	Relocate Handicapped Stall	Engineering	Short	District
	Provide Missing Sidewalk Link immediately west of school	Engineering	Medium	City
	Flatten roadside with missing link west of school	Engineering	Medium	City
	Realign East Crosswalk towards school entrance	Engineering	Short	City
	Provide Curb Extensions at Crosswalk Locations on Sunset Blvd.	Engineering	Medium	City
	Encourage Students to Cross at Crosswalks	Encouragement	Medium	School
	Conduct Speed Enforcement on Sunset Blvd.	Enforcement	Short	RCMP
	Limit On-Street Restrictions to Peak Bus Times	Education	Short	City
	Encourage Stopping at Downstream End of Area in front of school	Encouragement	Short	School
	Change "No Parking" to "No Stopping" Near Crosswalks	Education	1st Priority	City
	Encourage Property Owner Across the Street to Trim Shrubs	Engineering	1st Priority	City
	Encourage Property Owners to Un-park Safely	Encouragement	Short	City
	Sidewalk Repairs East of School	Engineering	Medium	City
	Review School Bus Routes, Stops and On-Board Procedures	Education	Short Term	School District
École La Mission	Provide crosswalk through bus loop	Engineering	Short	District
	Provide sidewalk connection through landscaped area	Engineering	Medium	District
	Install buffer to separate sidewalk from road	Engineering	Medium	District
	Post signs to clearly indicate reserved use of bus loop	Engineering	Short	District
	Post No Stopping signs along south side of loop	Engineering	Short	District
	Post stopping restrictions on Heritage Drive and near crosswalks	Engineering	1st Priority	City
	Install fencing to separate wooded area from school property	Encouragement	Medium	District
	Install crosswalk signs and markings at Hamilton Crescent	Engineering	1st Priority	City
	Install crosswalk signs and markings at Hardcastle Place	Engineering	1st Priority	City
	Paint crosswalk between parking lot and bus loop, and continuity lines through driveway aprons	Engineering	Short	District
	Keep all pedestrian connections clear of snow and windrows	Engineering	Short	District

	Provide ladder-style crosswalk at Heritage Drive and Holly Place	Engineering	1st Priority	City
	Remove or relocate bush on corner of Heritage and Holly	Engineering	1st Priority	City
	Place speed reader boards on Heritage Drive	Encouragement	Short	City
	Review need for school patrol program	Encouragement	Short	School
Wild Rose Elementary School	Encourage staff to park further away from the school	Encouragement	Short	School
	Make use of City-owned parking lot behind school property	Encouragement	Short	School
	Formalize school side of Grenfell as a pick-up / drop-off area	Engineering	1st Priority	City
	Install fence between the sidewalk and parallel parking	Engineering	Short	District
	Post no-stopping restrictions near the crosswalk south of school	Encouragement	1st Priority	City
	Provide curb extensions to improve visibility of pedestrians entering from pathways at south crosswalk	Engineering	Medium	City
	Move north crosswalk south to near the north driveway	Engineering	1st Priority	City
	Move south crosswalk and patrols to the south side of south driveway	Engineering	1st Priority	City
	Extend school zone to beyond the crosswalk in either direction	Engineering	Short	City
	Move Curve Warning sign north of school further north	Engineering	Short	City
	Move southbound school zone start to before north crosswalk	Engineering	Short	City
	Provide positive guidance for students exiting the main entrance	Engineering	Short	District
	Encourage staff to back into parking stalls	Encouragement	Short	School
	Re-designate part of the bus drop-off area as bus-only	Engineering	Short	City
	Properly escort students around the other buses to avoid conflicts	Encouragement	Short	School
	Discourage staff from parking near on-site sidewalks	Encouragement	Short	School
	Provide zebra or ladder-style markings at the main school crosswalk	Engineering	1st Priority	City
JJ Nearing Catholic School	Encourage Safety Over Convenience	Encouragement	Short	School
	Build Additional On-Site Parking Lot	Engineering	Long	District
	Encourage Improved Behaviour With New Signs	Engineering	1st Priority	City
	Construct Curb Extensions at Crosswalks	Engineering	Medium	City
	Install Speed Reader Boards on Hogan Road	Education	Short	City
	Provide Sidewalk / Pathway from the east to School Building	Engineering	Medium	District
	Formalize Lane for Pick-up / Drop-off With Paint Markings	Engineering	Short	District
	Provide Stop sign at outbound driveway	Engineering	Short	District
	Install Stop Control and Crosswalk at Delwood and Newmarket	Engineering	Short	City
Wild Rose Elementary School	Encourage staff to park further away from the school	Encouragement	Short	School
	Make use of City-owned parking lot behind school property	Encouragement	Short	School
	Formalize school side of Grenfell as a pick-up / drop-off area	Engineering	1st Priority	City
	Installation fence between the sidewalk and parallel parking	Engineering	Short	District
	Post no-stopping restrictions several metres in both directions near the crosswalk south of school	Encouragement	1st Priority	City
	Provide curb extensions to improve visibility of pedestrians entering from pathways at south crosswalk	Engineering	Medium	City
	Move the north crosswalk south to near the north driveway	Engineering	1st Priority	City
	Move the south crosswalk and patrols to the south side of the intersection/south driveway, and have patrollers direct them	Engineering Encouragement	1st Priority	City School
	Extend school zone to beyond the crosswalk in either direction	Engineering	Short	City
	Move the Curve Warning sign north of school further north	Engineering	Short	City
	Move southbound school zone start to before north crosswalk	Engineering	Short	City
	Provide positive guidance for students exiting the main entrance	Engineering	Short	District
	Encourage staff to back into parking stalls	Encouragement	Short	School
	Re-designate part of the bus drop-off area as bus-only	Engineering	Short	City
	Properly escort students around the other buses to avoid	Encouragement	Short	School

	conflicts			
	Discourage staff from parking near on-site sidewalks	Encouragement	Short	School
	Provide zebra or ladder-style markings at the main crosswalk	Engineering	1st Priority	City
École Secondaire Sainte Marguerite d'Youville (ESSMY)	Maintain Staggered Start/End Schedule from École Marie Poburan	Education	Short	School
	Encourage Parents to Use East Access Aisle for Pick-up	Encouragement	Short	School
	Provide Sidewalk on West Side of West Access Aisle	Engineering	Medium	District
	Provide north/south protected-only left-turns at Boudreau/SWCA	Engineering	Short	City
	Raise Pedestrians' Awareness of Turning Vehicle Conflict	Education	Short	RCMP
	Construct Missing Sidewalks on SWCA and on Boudreau Rd	Engineering	Medium	City
	Implement Adult Crossing Guard Program at SWCA/Woodlands	Engineering	Short	District
	Install Advance Warning Sign and Crosswalk Paving Textures at SWCA / Woodlands	Engineering	Short	City
	Install Traffic Signal at SWCA/Woodlands when warrants are met	Engineering	Medium	City
Vincent J. Maloney Catholic Junior High School	Construct a pick-up/drop-off area in off-site emergency lane	Engineering	Short	City
	Provide pedestrian crossings through parking lot	Engineering	Medium	District
	Provide school staff to supervise parking lot	Encouragement	Short	School
	Provide School Area signs approaching Mont Clare Place	Engineering	1st Priority	City
	Notify parents of responsible behaviours	Education	Short	School
	Promote Active Transportation	Encouragement	Short	School
	Investigate using off-site locations for pick-up/drop-off	Education	Short	School
	Emphasize safety over convenience	Education	Short	School
	Install access control signage at the driveways to parking lot	Engineering	Short	District
Albert Lacombe Elementary School	Discourage staff from parking illegally	Encouragement	Short	School
	Encourage staff to park in west lot	Encouragement	Short	School
	Encourage parents to park further on the same side	Encouragement	Short	School
	Convert west parking lot to pick-up/drop off area	Engineering	Medium	School
	Align Crosswalks with Entrances	Engineering	Medium	School
	Enforce against jaywalking	Enforcement	Medium	RCMP
	Extend school zone further west	Engineering	1st Priority	City
	Provide school zone flashers	Engineering	Short	City
	Provide Speed Reader-board and Enforcement	Enforcement	Medium	RCMP
	Sign and Mark Crosswalk at Grantham Place	Engineering	1st Priority	City
	Provide signage to discourage vehicles from bus zone	Engineering	Short	School
	Delineate bus passenger waiting area	Engineering	Short	School
	Narrow Driveways	Engineering	Short	School
	Implement Angle Parking	Engineering	Short	School
	Relocate and Orient Driveway Signs	Engineering	Short	School
	Encourage parking further into lot	Encouragement	Short	School
	Encourage reverse-in parking	Encouragement	Short	School
	Improve pathway connection from the east	Engineering	Medium	School
	Repair sidewalks along front of school	Engineering	Medium	City
	Review need for crosswalk at Levasseur and Grosvenor	Engineering	1st Priority	City
Neil M. Ross Catholic School	Provide painted walkway north of parked vehicles	Engineering	Short	District
	Provide continuous sidewalk south of parked vehicles	Engineering	Medium	District
	Coordinate discharge and provide greater supervision	Encouragement	Short	School
	Remove parking stalls immediately adjacent to on-site crosswalk	Engineering	Short	District

	Flatten slanted sidewalk on south side of school building	Engineering	Short	District
	Implement no stopping within 10 metres of crosswalks	Engineering	1st Priority	City
	Construct curb extensions at both crosswalks on Woodlands	Engineering	Medium	City
	Hatch parking lot near driveways to discourage parking	Engineering	Short	District
	Replace Do Not Enter and One-way signs with standard MUTCDC signs	Engineering	Short	District
	Install Curb Extensions	Engineering	Medium	City
	Remove Tree near Crosswalk	Engineering	Medium	City
	Upgrade special crosswalks to current TAC standard	Engineering	Medium	City
	Provide signed and marked crosswalk at Willoughby	Engineering	1st Priority	City
	Align handicapped parking space with curb on school side	Engineering	Short	District
	Discourage u-turns at Westwood following PU/DO	Encouragement	Short	School
	Review feasibility of school bus route revision	Encouragement	Short	District
	Install speed reader-boards along Woodlands, and enforce speed limit outside of school peaks	Education Enforcement	Short	City RCMP
Sir Alexander Mackenzie School	Encourage Parking at Locations Other than Front of School	Engineering	Medium	District
	Relocate Visitor Parking	Engineering	Short	District
	Sign and Educate about Reverse Angle Parking	Education	Short	School
	Upgrade Crosswalk on Bishop Street at Bernard Drive to Zebra	Engineering	1st Priority	City
	Replace No Parking with No Stopping Signs and Enforce	Enforcement	1st Priority	City
École Father Jan	Construct a pick-up/drop-off area in the parking lot	Engineering	Long	District
	Assign staff to supervise parking lot	Encouragement	Short	School
	Install signed and marked crossing at east end of school	Engineering	1st Priority	City
	Construct curb extensions at main crosswalk	Engineering	Medium	City
	Enforce posted speed limits on Mission Avenue	Enforcement	Short	RCMP
	Notify parents of responsible behaviours	Education	Short	School
	Promote Active Transportation	Encouragement	Short	School
	Investigate using off-site locations for pick-up/drop-off	Education	Short	District
	Emphasize safety over convenience	Education	Short	School
Bellerose Composite High School	Define school bus and passenger car zones within the lay-by	Engineering	1st Priority	City
	Provide oversize signs and ladder markings at Giroux/Lacombe	Engineering	1st Priority	City
	Conduct speed survey on Giroux Road	Engineering	Short	City
	Provide speed reader-boards on Giroux Road	Education Enforcement	Short	City RCMP
	Provide messages in school newsletters	Education	Short	School
	Provide speed humps and speed limit in parking lot	Engineering	Medium	District
	Officially close pathway crossing on Giroux Rd	Engineering	Medium	City
	Identify intended use of the existing lay-by with clear signage	Engineering/ Education	Short	City
	Widen driveway and add centre median	Engineering	Medium	District
	Clearly mark sidewalk through driveways	Engineering	1st Priority	City
William D. Cuts Junior High School	Install crosswalk on Larose across from school entrance	Engineering	1st Priority	City
	Provide curb extensions at new crosswalk	Engineering	Medium	City
	Divide school bus and passenger car zones within lay-by	Engineering	1st Priority	City
	Install No U-Turn signs on Larose and Larson and at the westerly driveway to the school	Engineering Enforcement	Short	City RCMP
	Connect west pathway to southwest corner of school	Engineering	Medium	District
	Realign easterly pathway to south of staff parking lot	Engineering	Medium	District
	Provide ladder-style markings at Larson & Larose crosswalks	Engineering	1st Priority	City
	Install stop or “yield to pedestrians” sign at driveway exit	Engineering	Short	District
	Provide school zone reminder signs within zone	Engineering	Short	City
	Provide speed reader boards on Larose and enforce	Education Enforcement	Short	City RCMP

Lorne Akins Junior High School	Provide Mid-Block Crosswalk with curb extensions on Fairview in front of the school, and Encourage its utilization	Engineering Encouragement	Medium	City School
	Use School Buses Queue as a Barrier to discourage jaywalking	Encouragement	Short	District
	Provide School Crosswalk on Fairview at Fairfax	Engineering	1st Priority	City
	Install No U-Turn Signs in front of school, and enforce	Engineering Enforcement	Short	City RCMP
	Replace 'No Parking' Signs with 'No Stopping' and Bus Zone Signs	Engineering	1st Priority	City
	Staff or Parent Monitor Parking Behaviours, follow-up bylaw enforcement	Encouragement Enforcement	Short	School City
	Use Public Transit Bus Zone for School Bus Overflow	Engineering	Short	City
	Conduct Speed Studies on SWCA, and Continue Enforcement	Engineering Enforcement	Short	City RCMP
	Provide SWCA Road Diet: two-lanes plus PU/DO lane	Engineering	Long	City
Paul Kane High School	Install Speed Humps in South Parking Lot Monitor Speeds and Tie to Parking Privilege	Engineering Encouragement	Short	District School
	Provide Raised Crosswalk and Stop Sign at South Exit	Engineering	Short	District
	Provide "do not enter except buses" signing in bus lane area	Engineering	Short	District
	Install lighting in bus only area	Engineering	Medium	District
	Paint Arrows in Parking Lot to reinforce one-way operation	Engineering	Short	District
	Extend Pick-up / Drop-off Area to the east	Engineering	Medium	District
	Convert Cunningham Road to two lanes plus PU/DO lane	Engineering	Long	City
Ronald Harvey Elementary School	Provide ladder crosswalk across Langley through bus bay	Engineering	Short	City / District
	Provide raised crosswalk across Langley to Lester Cres	Engineering	Medium	City / District
	Restrict stopping on the east side of Langley Ave	Engineering	1st Priority	City
	Restrict Stopping on west side of Langley south of Lester	Engineering	1st Priority	City
	Provide monolithic sidewalk on west side of Langley Ave	Engineering	Medium	City
	Formalize staff parking lot as one-way pick up/drop off area	Engineering	Medium	School
	Upgrade Special Crosswalk at Langley & Lester to current TAC standard	Engineering	Medium	City
	Trim landscaping on SW corner of Langley and Larkspur	Engineering	1st Priority	City
	Provide signage of bus bay	Engineering	Short	District
	Install One Way signage at south end of bus bay	Engineering	Short	District
	Install speed reader-boards on Langley Avenue, follow up with targeted speed enforcement	Education Enforcement	Short	City RCMP
Muriel Martin Elementary School	Reallocate Street Space to Provide Bus and Parent PU/DO	Engineering	Short	City / District
	Construct Curb Extensions across Deer Ridge Drive	Engineering	Medium	City
	Provide Periodic Student Patrol Training	Education	Short	School
	Install "In-Street" School Crosswalk Sign on Deer Ridge	Engineering	1st Priority	City
	Install Speed Reader Boards on Deer Ridge Drive	Engineering	Short	City
	Educate and Monitor Jaywalking Across Deer Ridge	Education	Short	School
	Provide No Parking signs on either side of pathway approaching Desmarais Cres, and enforce	Engineering Enforcement	1st Priority	City RCMP
	Conduct warrant for pedestrian crosswalk at Desmarais	Engineering	Short	City
	Install No Stopping signs on Deer Ridge Dr at Denney Ct	Engineering	1st Priority	City
Sir George Simpson Junior High School	Review efficiencies in school bus operations	Education	Short	District
	Prohibit bus drivers from blocking crosswalk	Enforcement	Short	City
	Extend west sidewalk further north of school	Engineering	Medium	City
	Restrict Stopping Across Grosvenor Blvd	Engineering	Short	City
	Encourage Parking Along School Field	Encouragement	Medium	School
	Minimize Gaps Between Buses	Encouragement	Short	District

	Enforce Against Jaywalking	Enforcement	Short	City
	Provide signing at entrance of the bus bay	Engineering	Short	City
	Enlarge existing bus bay signage	Engineering	Short	City
	Provide enhanced school zone signing	Engineering	Short	City
	Mark centre-line along Grosvenor Blvd	Engineering	Short	City
	Conduct speed enforcement on Grosvenor Blvd	Enforcement	Short	RCMP
	Trim treetops	Engineering	Short	City
	Consider moving the 50 km/h zone further south	Engineering	Short	City
	Provide more supervision, education of pedestrian signal	Education	Short	School
	Consider piloting automated pedestrian detection	Engineering	Medium	City
	Revise Timing of Parking Restrictions Across Grosvenor	Engineering	1st Priority	City
	Enforce parking restrictions at driveways	Enforcement	Short	City
	Mark crosswalk across north leg of frontage road at Grandin	Engineering	Short	City
	Provide curb ramps at north leg of frontage road at Grandin	Engineering	Short	City
	Provide push-button instructions	Education	Short	City
	Trim tree on northwest corner at Grandville and Grandin	Engineering	1st Priority	City
Robert Rundle Elementary	Provide Rundle Signage Closer to Garden Crescent	Engineering	Short	District
	Consultation Regarding One-Way Operation of Garden	Education	Medium	City
	Review feasibility of providing on-site PU/DO Area	Engineering	Long	District
	Provide School Area Signage and Mark Crosswalk	Engineering	1st Priority	City
	Provide Curve Warning Signage on Garden Cres.	Engineering	Short	City
	Establish One-Way Circulation within Small City Lot	Engineering	Short	School
	Encourage greater use of large City lot	Encouragement	Short	School
	Provide specialized training and supervision for patrollers	Education	Short	School
	Restrict stopping in front of pathway entrance in small lot	Engineering	Short	City
	Consider providing sidewalks along Garden Crescent	Engineering	Medium	City
	Provide signed/marked crosswalk at east opening in fence	Engineering	1st Priority	City
	Revise staff lot signage to provide clearer directions	Engineering	1st Priority	District
	Mark crosswalks through staff parking lot	Engineering	Short	District
	Mark islands in staff lot and clear snow along hill	Engineering	Short	District
	Encourage staff to use north parking lot	Encouragement	Short	School
	Explore options for on-site pick-up / drop-off facility	Engineering	Long	District
St Albert Catholic High School	Park buses to physically prevent students crossing in-between	Encouragement	Short	District
	Construct on-site parent PU/DO area adjacent to bus area	Engineering	Long	District
	Replace parking lot crosswalk with ladder-style markings	Engineering	Short	District
	Implement School Area on Malmo Avenue	Engineering	1st Priority	City
	Promote Active Transportation	Encouragement	Short	School
	Investigate using off-site locations for pick-up/drop-off	Education	Short	School
	Emphasize safety over convenience	Education	Short	School
	Encourage proper use traffic control devices (incl. 4-way stop)	Education Enforcement	Short	RCMP
Leo Nickerson Elementary School	Promote Active Transportation	Encouragement	Short	School
	Investigate using off-site locations for pick-up/drop-off	Education	Short	School
	Emphasize safety over convenience	Education	Short	School
	Construct a pick-up/drop-off area along Cunningham Road	Engineering	Long	City
	Repaint crossing at Pedestrian Signal with ladder-style marking	Engineering	1st Priority	City
	Trim boulevard trees on approaches to the pedestrian signal	Engineering	1st Priority	City
	Provide sidewalk along south side of Sycamore Dr for PU/DO	Engineering	Medium	City
	Post speed reader boards along Cunningham, and enforce	Engineering Enforcement	Short	City RCMP
	Implement road diet on Cunningham Road (1 lane/direction)	Engineering	Long	City
	Consolidate clutter of on-site signs at parking lot	Engineering	Short	District
	Discourage school buses from double-parking	Encouragement	Short	District

	Install pedestrian lighting in pathway connections	Engineering	Medium	City
Bertha Kennedy Catholic Community School	Change "no parking" near crosswalks and bus stop on Larose to "no stopping"	Engineering Enforcement	1st Priority	City
	Replace, relocate or unhide one-way and do not enter signs	Engineering	Short	District
	Paint crosswalk across lot to signalized crossing at Leddy Ave.	Engineering	Short	District
	Install reminders of school zone speed limit	Engineering	Short	City
	Install speed reader boards on Larose Drive and enforce	Education Enforcement	Short	City RCMP
	Repaint crosswalk on Larose between Longview and Laydon	Engineering	1st Priority	City
	Provide curb extensions at Larose Crosswalk	Engineering	Medium	City
	Paint ladder markings at Larose Dr /Leddy Ave intersection	Engineering	1st Priority	City
Elmer S. Gish Elementary / Junior High School	Discourage u-turns and in-street pick-up / drop-off	Encouragement Enforcement	Short	School RCMP
	Install sidewalks from Akins Dr through lot to school entrance (interim paint)	Engineering	Short	District
	Discourage pick-up/drop-off in townhouse area	Encouragement	Short	School
	Upgrade Five Crosswalks with ladder-style markings	Engineering	1st Priority	City
	Upgrade Crosswalk Signs at 2 locations	Engineering	Short	City
	Upgrade special crosswalk in front of school to TAC standard	Engineering	Medium	City
	Restrict eastbound left turns into east entrance of PU/DO area	Engineering	Short	City
	Promote Active Transportation	Encouragement	Short	School
	Investigate using off-site locations for pick-up/drop-off	Education	Short	School
	Emphasize safety over convenience	Education	Short	School

7.2 Summary of Strategies at Two New Schools

Reviews were also conducted at two new schools, as follows:

- Lois E. Hole Elementary School – Erin Ridge Neighbourhood Site (Public School Division)
- École Alexandre Taché – Erin Ridge Neighbourhood Site (Conseil Scolaire Centre-Nord)

These reviews were conducted based on plans provided by the City and/or the applicable School District. While other information may be held by others, the reviews were done based on the information that was made available to the project team. The information made available was typically site plans and either existing or projected traffic volumes along roads in the surrounding area. The strategies for each school are summarized in TABLE 7.3. The "short" time frame assumes that there is still an opportunity to revise the plans prior to construction.

In general, the findings of the reviews of the two new schools reflect the findings of the reviews of the existing schools. However, there is more of an opportunity to influence the environment than at the existing schools. Note that while the plans are focused, the education, encouragement and enforcement strategies described in Section 6.0 will still apply. If the engineering measures are effective however, the other E's will not be required to the extent that it is at most of the existing schools; instead they can be treated as proactive approaches rather than reactive ones.

TABLE 7.3 SUMMARY OF ENHANCEMENTS FOR TWO NEW SCHOOLS

SCHOOL	ENHANCEMENT	TYPE	TIME FRAME	LEAD
Lois E. Hole Elementary School	Implement No Stopping on North Side of Everitt Drive	Engineering	Short	City
	Install Two Crosswalks across Everitt Drive	Engineering	Short	City
	Raise Awareness of Mid-Block Crossings with Curb Extensions	Engineering	Short	City
	Move Bus Pullout Curb Extension out Towards Travel Lane	Engineering	Short	District
	Raise Awareness of Pedestrian Priority at Driveways	Engineering	Short	District
	Install School Zone Gateways on Everitt Drive	Engineering	Short	City
	Reallocate Parking Lot Space to Include a Visitor Row	Engineering	Short	District
	Reallocate Street Space to Include Cycle Lanes	Engineering	Short	City
École Alexandre Taché	Change “no parking” restrictions to “no stopping”	Engineering	Short	City
	Extend sidewalk across driveways with letdowns to the street	Engineering	Short	District
	Prohibit Pick-up / Drop-off Activity in the Parking Lot	Engineering	Short	District
	Provide a Barrier to Make Pedestrians Walk Around Bus Area	Engineering	Short	District
	Provide sidewalk to / crosswalk across bus lane	Engineering	Short	District
	Provide Pedestrian Connection from Eldorado Drive to School	Engineering	Short	District
	Install School Zone Gateways	Engineering	Short	City
	Switch Visitor Parking and Staff Parking Locations	Engineering	Short	District
	Reallocate Street Space to Include Cycle Lanes	Engineering	Short	City

The effective practices noted from the plans are:

- Recognition of number of parents driving: accommodating on or off-site
- Pedestrian routing from road – direct connection to school entrance

From these reviews, it is suggested for the planning of the future schools, that:

- Based on the number of parents that would be driving their children to/from school, plan to make a strong effort towards promoting active transportation modes.
- If schools are sited along major roads, minimize the intersections with cross streets in the vicinity of the school, or provide conflict mitigations at each intersection.
- Majority of crosswalk locations were not shown on the plans; but are important in terms of being provided along the likely pedestrian desire lines.

7.3 Implementation Guidance

This report includes a long list of suggested City-wide strategies and school-specific strategies. Therefore, some general guidance has been developed for the City, School Districts and other partners to discuss further. Note, cost estimates for suggested enhancements were not part of the Consultant review, but will be necessary for budgeting and funding purposes.

Regarding the 4E approach: traditionally, engineering measures would be implemented first, and education and enforcement efforts follow. It is suggested that most issues will be optimally addressed through the simultaneous implementation of multiple strategies, in a way that is complementary and reinforcing. For example, the City may select one or two cogs from the “Safe Journeys wheel” to put the actions into motion.

Where multiple options are provided, in general the longer-term option is expected to offer more significant results in terms of safety performance; therefore if budgets exist, the City and its partners should proceed with these options, and only look to implement the more immediate solution as an interim measure.

Priority 1 (Year 1) City-wide Safe Journeys Strategies

As a first priority, it is suggested that the following enhancements be implemented at all schools. Depending on the City's budget process, these would ideally be implemented in the first year following the adopting of the Safe Journeys strategy. The objective of these initial changes would be to provide a minimum standard or "baseline" at all schools, as well as to provide consistency in regulation and appearance of traffic control devices and facilitate more effective enforcement. This first set of changes should be accompanied by a public awareness campaign, supplementary education in the classroom, and targeted enforcement following an initial educational period (particularly for the parking and pick-up/drop-off regulations).



- Marked and signed crosswalks (including any new proposed crosswalks, and changing all school crossing markings to zebra or ladder-style);
- Signage of pick-up / drop-off zones (including changing existing signage to No Parking with No Unattended Vehicles tab);
- Signage of parking regulations (including changing No Parking to No Stopping where appropriate); and
- Sight line improvements (not all have been noted, but these are relatively easy to implement – tree trimming, etc.)

Note, while it is expected that the first three of the above items will apply to most/all schools, specific locations where they were observed to be an issue are listed in TABLE 7.1 (denoted as "1st Priority") and described in the respective Safe Journey to School Plans.

In terms of City-wide improvements, the City is encouraged to make progress in Year 1 on the following items (each of which is subsequently discussed):

- Review of City's pedestrian crossing control policies and warrants;
- Review of City's Snow and Ice Control Policy
- Start Building a Cycling Culture
- Rebuild Confidence in School Bus Transportation System
- Establish School Traffic Safety Governance Framework

Review of City's Pedestrian Crossing Control Policies and Warrants

The City is encouraged to commission a review of its pedestrian crossing control facilities, both from a policy point of view, and to determine the hierarchy of available controls and the warrants associated with each. The purpose of the review would not be to look to actively change the City's existing processes, , but to confirm that the City has considered all of the proven available tools and piloting newer devices and reviewed the recognized industry guidelines; and to identify opportunities for special treatments in the vicinity of schools. The specific questions to address in such a review include:

- *Should there be a level of crossing protection between special crosswalks and pedestrian signals? If not, then do the warrant thresholds for pedestrian signals need to be lowered?*
- *What other features of an "enhanced" signed/marked crosswalk should be included (e.g. zebras/ladders)?*
- *As a geometric measure at signed/marked crosswalks, should the City adopt Raised Crosswalks or Curb Extensions? Or might each be appropriate for some situations? (e.g. intersections vs. midblock locations)*
- *As a measure to increase yielding at crosswalks, should the City pilot or adopt Crosswalk Ahead Warning Signs, Advance Yield Lines, Shark's Teeth or Rectangular Rapid Flashing Beacons (RRFB's)?*
- *Should the use of fluorescent-green for regulatory crosswalk signs be more closely tied to school travel?*
- *Does TAC's Pedestrian Crossing Control Guide adequately address the needs of St. Albert and its schools?*
- *What sources of data other than pedestrian demand and available crossing opportunities should be collected/used to support decisions regarding crossing control facilities?*
- *Should student patrols be encouraged at <u>ALL</u> elementary schools for at least the main crossing facility near the school, as a way to draw attention during peak times and start building a traffic safety culture?*

The result of such a review might suggest treatments for all pedestrian facilities in the City as well as specific treatments for school crosswalks.

Review of City's Snow and Ice Control Policy

The number of collisions and comments during winter conditions was a significant outcome of this review. Prior to the next winter season, it is suggested that the City revisit its policies for clearing snow and windrows fronting schools and sidewalks. There was a degree of uncertainty among schools and members of the public as to whose responsibility it is to clear sidewalks. This can be clarified and new policies announced as part of a public awareness campaign prior to winter.

Start Building a Cycling Culture within the City

The low rates of cycling in St. Albert are a contributor to vehicle congestion around schools as well as health issues. While several suggestions to promote cycling are captured in this report, the off-road infrastructure needs to be reviewed and properly maintained, and non-road infrastructure needs to adjust to provide alternatives. This might start with a public survey to gauge the public interest in cycling and identify current barriers to cycling. The results of the Transportation Master Plan may inform the City's approach to this issue.

Re-create Excitement about School Traffic Safety and School Bus Transportation

Although there is a prevailing culture of fear among students, based on the responses from the survey, school buses are still statistically the safest mode of transportation. As one of the first steps towards announcing and implementing the results of this review, there needs to be a public shift from "reacting" to "being proactive". Healing and learning from previous experiences will enable the City to feel positive and excited about taking school bus transportation and about traffic safety in general. This may require communications and engagement experts to generate and facilitate discussions about school buses and traffic safety.

To this end, the *Way to Be! – Living Respectfully* program would be a timely and effective. The City and School Districts are invited to work together with the AMA and SCSCA to pilot the program in St. Albert schools in Fall 2015. The program can be customized to be appropriate to the St. Albert context, recent experiences, and in a way that reflects the concerns raised and the principles articulated in the *Safe Journeys to School* review.

Establish School Traffic Safety Governance Structure and Framework

To create an enabling and accountable environment for any of the above actions, it is critical that the structures be put in place to implement the Priority 1 measures, including a group such as the Joint Public Steering Committee, consisting of the key stakeholders; and a framework for how the traffic safety strategies will be funded and implemented. It will also be necessary to set up a method of monitoring the success of school traffic safety measures going forward (e.g., will it be based on how many measures are implemented? changes in collisions? complaints?). Due to collision data limitations, a system for logging "traffic conflicts" may be further explored.

Priority 2 (Short-Term) City-wide Safe Journeys Strategies

As a second priority, the City and its partners are advised to start on the implementation of all of the specific "short-term" enhancements listed among the school-specific strategies (TABLES 7.1 to 7.4). There are numerous improvements, and therefore these will likely be spread over multiple budget cycles. In terms of the City-wide improvements, it is suggested that the following key components be included in the City's implementation strategy:

Implement Enhanced Crosswalks

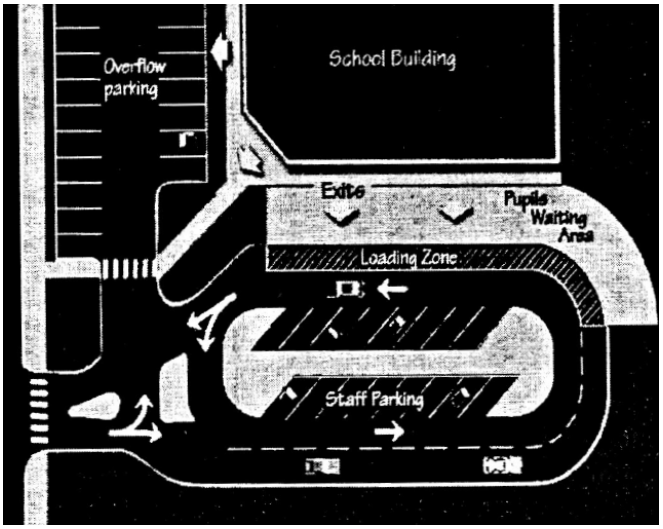
Once the City's has confirmed/revised its policy on Pedestrian Crossing Control, it is suggested that enhanced crosswalks be implemented as soon as practicable. While curb extensions and/or raised crosswalks have been identified among the individual school reports as "medium" term enhancements, piloting and evaluating a few installations is recommended. A standard should be developed/adopted for each, and then they should be phased in at locations that meet the City's installation criteria. Since these are relatively high-cost items, it would be advisable to secure budgets for their implementation as soon as possible. In the interim, the City may wish to use traffic cones as "temporary curb extensions".

Develop Safe Routes to School

In response to the needs identified, the School Districts are strongly encouraged to work with their schools to develop "Safe Routes to School" (SRTS). The outcome of this would be for each school to create a set of "maps" depicting "safe" walking/cycling routes, i.e. routes that include sidewalks, preferred crossing locations, and routes to walk/cycle from the road to the school entrance to minimize the chances of conflicts. Students are then encouraged to prepare a map of their own journey, that will likely include some of the routes shown on the school SRTS maps. There are several published best practices for SRTS mapping that the School Districts can access. It would be most effective if all four School Districts work together on this, and seek the City's guidance and expertise where required. The City may be interested in combining all SRTS maps onto one large map for public access.

Adopt Principles for Development of Future Schools

It is unknown to the project team what future schools are planned within the City. However, it is suggested that the School Districts and the City endorse a set of planning principles that support traffic safety. This set of principles should be shared with planners and developers so that their layouts can keep traffic safety as one of the considerations in their siting and planning of new schools. Learnings from the implementation of the suggestions for the two school plans reviewed in this report can be applied to the planning of future schools.



Priority 3 and 4 (Medium-Term and Long-Term) City-wide Safe Journeys Strategies

Priorities and action plans for the medium to long term time frames can be developed by the City and its partners. After the first three years, the findings of this review may also need to be updated based on current data, the public's view of traffic safety at the time, and new standards and best practices (esp. with respect to vehicle safety technologies).

A summary of the suggested implementation guidance, for the consideration of the Joint Public Steering Committee, is presented in TABLE 7.5. This does not include all of the recommendations of this review; but highlights the components that it is recommended be included in the Committee's implementation strategy and discussions.

TABLE 7.5 SUMMARY OF IMPLEMENTATION GUIDANCE (CRITICAL COMPONENTS)

Priority	Strategy/Enhancement	Lead	Support
1 (Year 1)	Low-cost measures at all schools: • New/relocated signed/marked crosswalks • New signage of pick-up / drop-off zones • Signage of parking regulations • Sight line improvements	City	School District RCMP
	Review of Pedestrian Crossing Control Policy	City	School District
	Review of Snow and Ice Control Policy	City	School District
	Start Building a Cycling Culture within the City	City	Schools, Advocacy Groups
	Re-create Excitement about Traffic Safety and School Buses	City/School District	Communications
	Establish Governance Structure and Framework	City (Council)	All Partners
2 (Short Term)	Implement Enhanced Crosswalks	City	Maintenance
	Develop Safe Routes to School	School District	City
	Adopt Principles for Development of Future Schools	School District	City
	Other "Short-term" school-specific improvements	Various	
3 (Medium Term)	Other City-wide Strategies	Various	
	"Medium-term" school-specific improvements	Various	
4 (Long Term)	Remaining City-wide Strategies	Various	
	"Long-term" school-specific improvements	Various	

Conclusion

The Safe Journeys to School initiative of the City of St. Albert and its partners sets forth a blueprint for further enhancing traffic safety for students travelling to and from school. Continued cooperation from all involved will ensure the success of the initiative.

