

2022 Road Safety Assessment

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Report Summary

This report provides information regarding collision statistics and trends for roadways in the City of Greater Sudbury and outlines steps that have been taken to improve road safety for all users. In addition, the report provides an update on the status of the network screening program.

Relationship to the Strategic Plan, Health Impact Assessment and Community Energy & Emissions Plan (CEEP)

This report refers to operational matters

Financial Implications

The review of previously identified locations for potential safety improvements was completed within existing approved budgets and staff complement.

Background

The Transportation and Innovation Support section is responsible for the safe and efficient movement of people and goods on the City of Greater Sudbury's transportation network. Road jurisdictions have found that the most successful way to improving road safety is through the 3 Es; Engineering, Enforcement and Education. Over the last number of years, the City of Greater Sudbury has implemented a variety of initiatives to improve safety for cyclists, pedestrians and motorists.

In 2018, staff presented the first Road Safety Assessment of all roads under the jurisdiction of the City of Greater Sudbury and outlined a network screening process. The 2022 Road Safety Assessment report will focus on the following areas:

- 1) Provide collision statistics and trends over the past 5 years.
- 2) Identify improvements that have been undertaken to enhance safety for road users.
- 3) Present countermeasures to improve safety for the remaining 10 locations outlined in the 2019 Road Safety Assessment report.
- 4) Identify next steps in the network screening process.

1) Collision Statistics and Trends

The City of Greater Sudbury receives copies of collision reports from the Greater Sudbury Police Service. These reports are received on a regular basis and data entry is completed to enter the records into the City's database. It is not unusual for the City to receive a copy of a report 3 to 6 months after a collision has occurred. As such, the statistics provided below represent the data the City has available as of May 2022 and these statistics will be updated as more reports are received by the City. In addition, the statistics below do not include collisions which have occurred in parking lots or on off road trails.

Figure 1 illustrates the breakdown of collisions by the classification of the collision for the years 2019, 2020 and 2021.

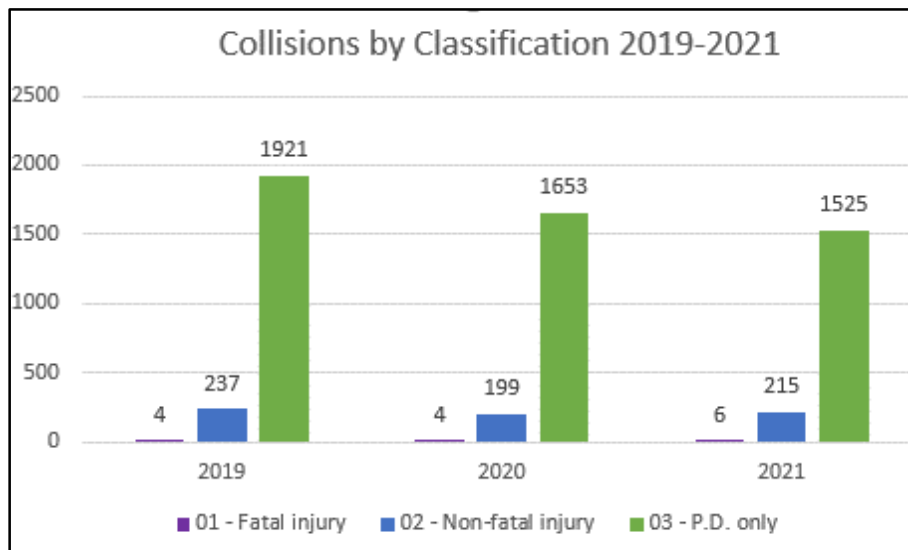


Figure 1: Collisions By Classification 2019-2021

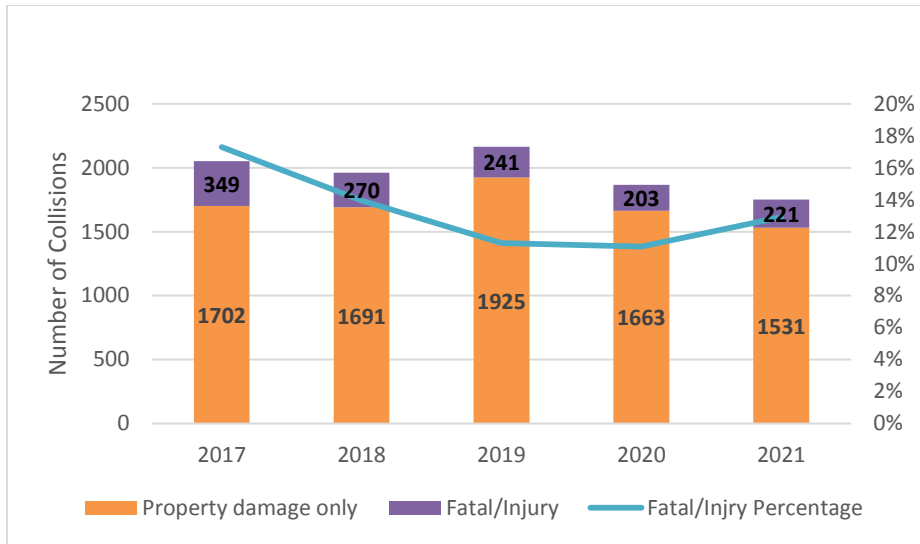


Figure 2: Total Collisions By Classification 2017-2021

When looking at a five-year trend from 2017 to 2021, the total number of collisions has decreased (Figure 2) while the total number of fatal and injury collisions as a percentage of total collisions has risen slightly in 2021 after declining the past four years.

Total collisions per month from 2017 to 2021 shows an above average number of collisions during the winter months while spring and summer months are below average (Figure 3).

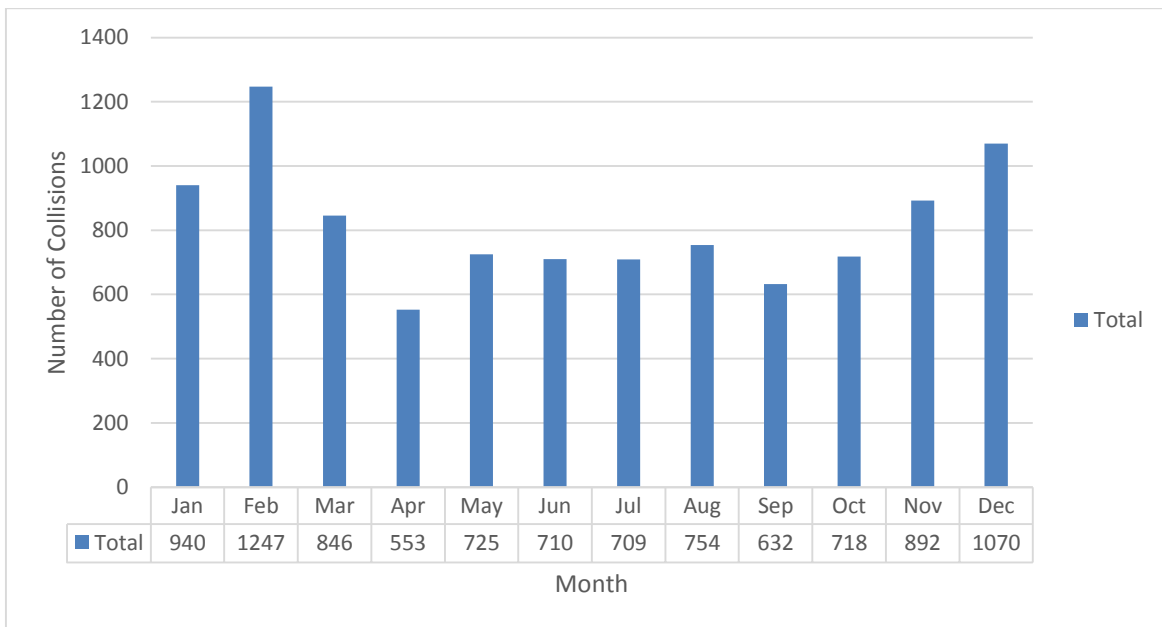


Figure 3: 2017-2021 Total Collisions by Month

Over a five-year period, the number of collisions taking place during weekdays exceeds those on the weekend, with Friday experiencing the most collisions overall (Figure 4).

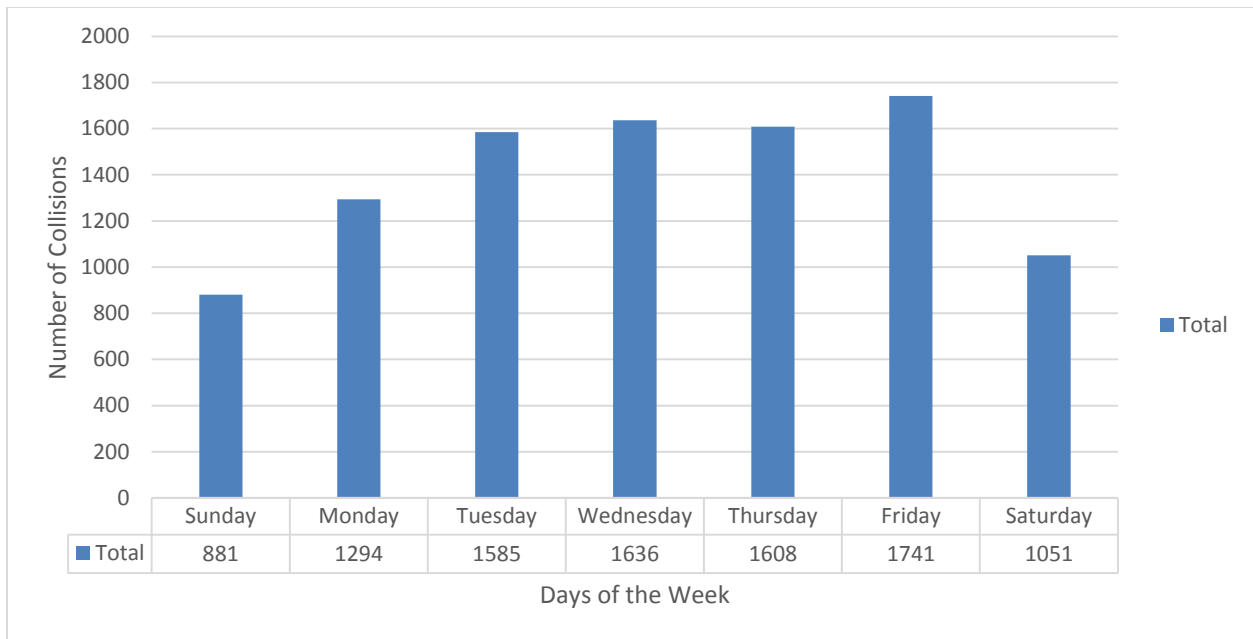


Figure 4: 2017-2021 Collisions by Day of the Week

The number of collisions by hour of the day shows that there are an increased number of collisions during the tail end of the typical Greater Sudbury morning rush hour (9 AM to 10 AM) and throughout the afternoon rush hours from 3:00 pm to 7:00 pm (Figure 5).

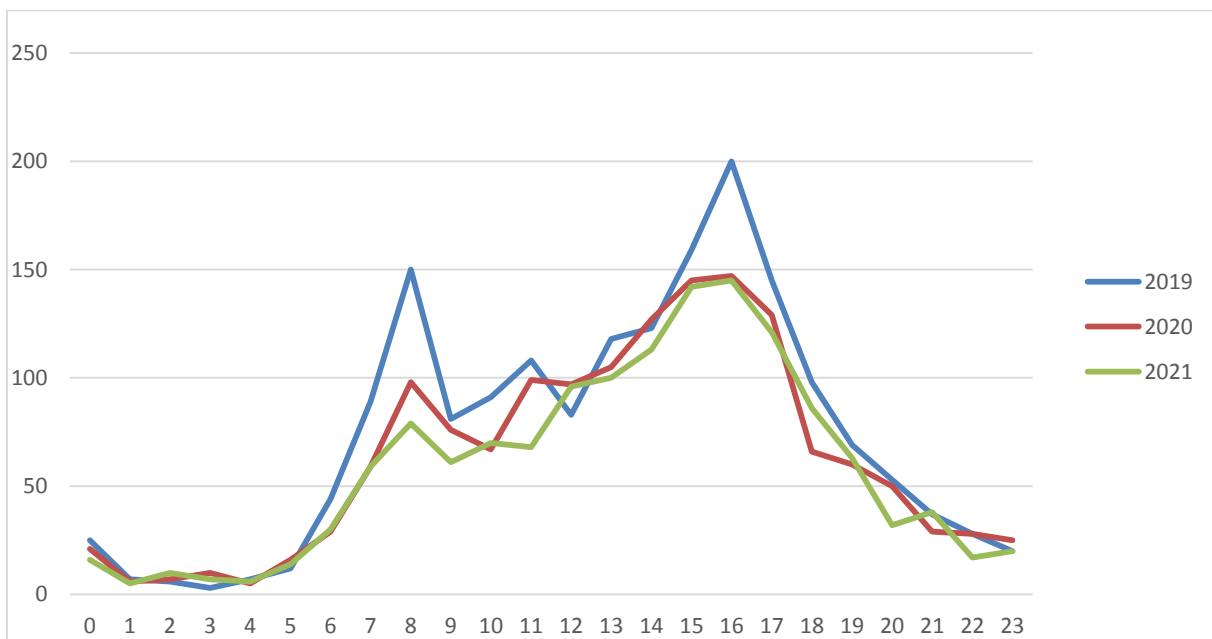


Figure 5: Collisions By Hour of the Day 2019-2021

The number of collisions by road classification highlights that the majority of collisions occur on arterial roads, which are typically higher volume, higher speed roads than collector or local roads (Figure 6).

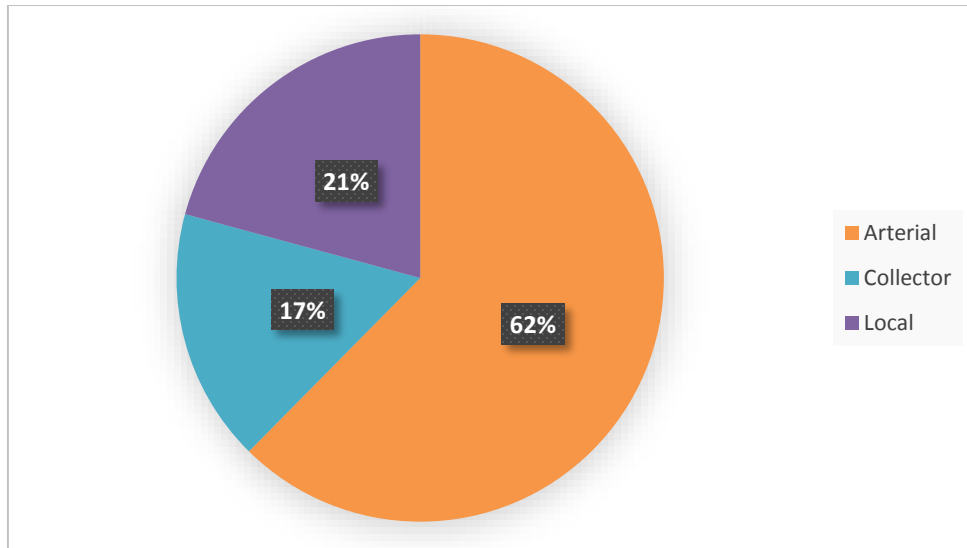


Figure 6: Collisions by Road Classification

Over 90% of collisions in Greater Sudbury occur on roadways where the posted speed limit is 50 km/h or 60 km/h (Figure 7).

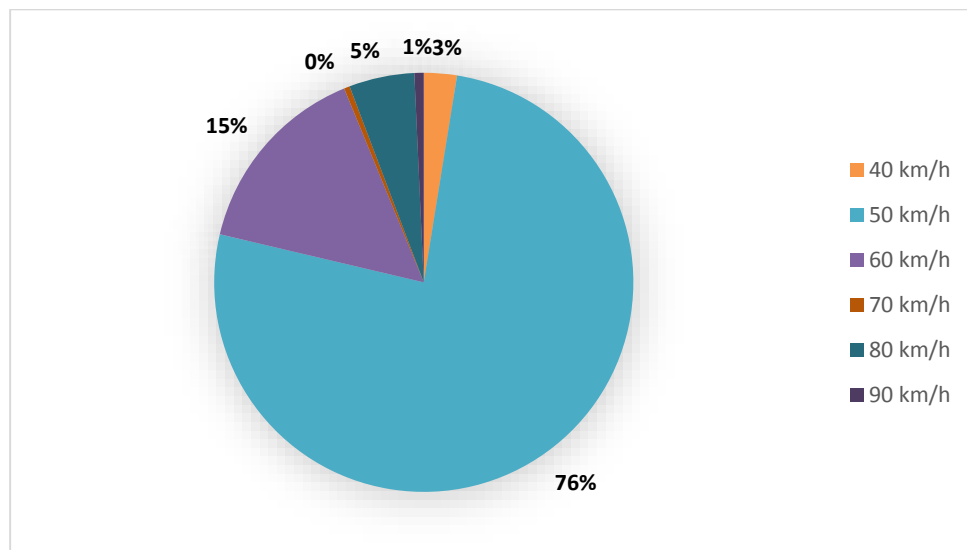


Figure 7: Collisions By Posted Speed Limit 2017-2021

The numbers remain consistent for fatal and injury collisions by posted speed limit with 88% of collisions occurring when the speed limit is 50 km/h or 60 km/h (Figure 8). It should be noted that a higher proportion of fatal and injury collisions are occurring on roads with a speed limit of 80 km/h when compared to the total number of collisions by speed limit.

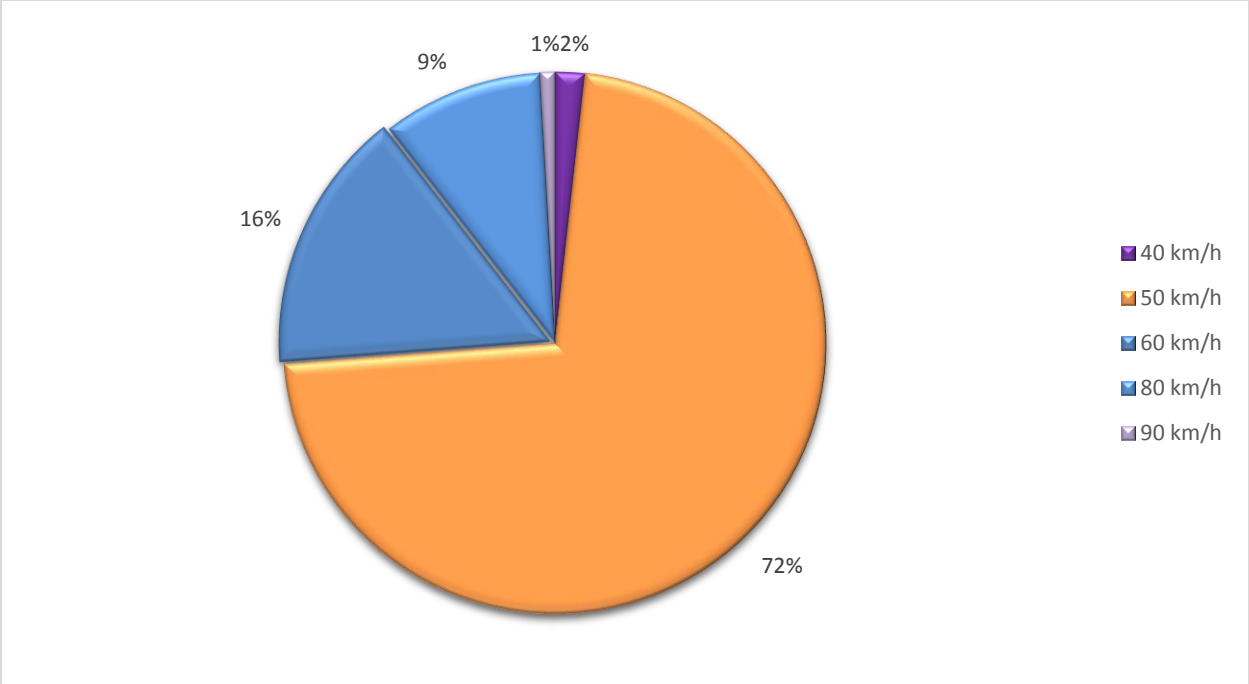


Figure 8: Fatal/Injury Collisions By Posted Speed Limit 2017-2021

2) Improvements for Road Users in 2019, 2020 and 2021

Pedestrian and Cyclist Infrastructure Improvements

Since 2019, the City has taken many steps to improve road safety for pedestrians and cyclists through the construction of new infrastructure. This includes the construction of new pedestrian crossovers on Loach’s Road, Westmount Avenue, Hill Street (Figure 9) and Minto Street and the construction a new pedestrian and cyclist traffic signal on Ramsey Lake Road (Figure 10). In addition, since 2019 the City has constructed 4.3 kms of new sidewalk and 10.6 kms of cycling infrastructure throughout the community.



Figure 9: Type C Pedestrian Crossover on Hill Street in Wahnapiatae



Figure 10: Pedestrian and cyclist signal on Ramsey Lake Road

Education Campaigns

In addition to infrastructure improvements, the City has released a series of educational campaigns to help improve pedestrian and cyclist road safety. In June 2021, the City partnered with the Greater Sudbury Police Service to release social media content reminding citizens about safe cycling and the responsibilities of both cyclists and motorists when sharing the road.



Figure 111: Social media post for safe cycling campaign

An education campaign was launched in October 2021 to coincide with days becoming shorter and visibility of pedestrians potentially becoming more challenging. As part of the campaign, the City released a number of social media graphics and animated videos, bus back ads, digital billboards and a radio ad which highlighted tips on how to safely approach and travel through

Type D pedestrian crossings.



Figure 12: Education campaign content for Type D pedestrian crossings

Motorist Improvements

The City continues to take steps to improve the safety of motorists as part of capital projects. The construction of two way centre left turn lanes, paved shoulders, rumble strips and rock removal are examples of road safety enhancements that have been incorporated into capital projects like the Municipal Road 35 (Figure 13) and Long Lake Road (Figure 14) projects.



Figure 133: M.R. 35 - Paved Shoulder, Guiderail and Rumble Strip



Figure 14: Long Lake Road - Rock removal from clear zone

“X-Lite” Guiderail End Treatments

A roadside barrier system such as steel beam guiderail is intended to redirect errant vehicles from departing the roadway and striking a roadside hazard that is within the clear zone (ex. rock cut) or entering into an area where a vehicle can not recover and return to the roadway (ex. water body). While a roadside barrier system does protect vehicles, the barrier system itself can be a hazard, especially the approaching ends of the system. End treatments are installed on the ends of roadside barrier systems. When struck, these end treatments are designed to absorb the energy from the impact of the vehicle and slow a vehicle down to a stop.

For steel beam guiderail, a commonly used end treatment system was the X-Lite guiderail end treatment. Approximately 140 “X-Lite” guiderail end treatment terminals were installed on roads throughout Greater Sudbury.

In 2021, the MTO advised municipalities that as a cautionary measure, all “X-Lite” guiderail end treatments installed on provincial highways were being replaced and would no longer permit the installation of these end treatments in provincial construction or maintenance projects. This approach has been taken by many jurisdictions across North America and as a result, City staff have also begun the process of replacing all “X-Lite” guiderail end terminal treatments throughout Greater Sudbury.

Staff have prioritized the replacement of these end treatment terminals based on the posted speed limit of the road and daily traffic volume. In 2021, 37 end treatments were replaced with the remainder anticipated to be replaced over the next two to three years. The replacement of the end treatments is being funded through the annual guiderail maintenance account.

3) Review of Network Screening Process

In 2018, the city adopted a network screening program, based on the Highway Safety Manual (HSM), as a proactive way to analyze areas that have higher than expected number of collisions. The network screening tools and methodology in the HSM identify and prioritize locations in the City's road network that have a high potential for safety improvements (PSI).

This proactive approach will allow staff to better prioritize resources for road safety based on a ranking of locations based on its Potential for Safety Improvement (PSI).

The network screening process is as follows:

1. Conduct a network screening on all intersections and roads in the city network and ranking them based on the PSI score.
2. Once the ranking is complete, the top 20 locations are selected for review by staff and community partners.
3. On an annual basis, five locations plus upcoming capital projects will be reviewed. Each location will have a series of countermeasures selected to address the number of severity of collisions. This will continue for three years.
4. Provide an annual update to Operations Committee showing locations that have been selected for review and the countermeasures that have been identified.
5. At the end of the three year period, the network screening will be refreshed and locations that have already been reviewed will not be looked at for another three years so that the effectiveness of the countermeasures can be analyzed.

Staff will be refreshing the network screening of the transportation network in 2023.

4. Recommendations for Safety Improvements

In 2019 staff reviewed 10 on the locations in the top 20 ranking and implemented improvements. In 2022, staff completed the review of the remaining locations in the top 20 list and recommended the improvements in Table 1 below.

PSI Rank	Location	Year of Improvement	Analysis	Recommendation
7	Regent Street between Caswell Drive and Paris Street/Long Lake Road		The area of Regent Street is a busy thoroughfare with a number of private driveways on both sides of the road. The collision history in this area showed a number of areas where collisions are occurring.	As part of the South End study staff will engage a consultant to help analyze the collisions in this area. Also as part of the CARSP road safety conference being held in Sudbury in June there will be a Vision Zero Symposium where this area will be analyzed as part of a case study.
8	Kingsway between the private road east of McDonalds and Silver Hills Drive		There are no discernable patterns or trends for collisions in this area. The section of the Kingsway has a high number of private driveways that act as conflict points.	Staff will work with Greater Sudbury Police to monitor the area. Staff though the development approval process also looks for opportunities to close driveways and reduce the number of conflict points.
9	Paris Street at Ramsey Lake Road		The majority of incidents are rear end collisions occurring during ideal driving conditions. In most instances the number one driver behaviour is distracted driving or follow too close to another vehicle.	A distracted driving education campaign is scheduled to be released this year.
10	Municipal Road 80 at Main Street		The majority of incidents are rear end collisions occurring during ideal driving conditions. In most instances the number one driver behaviour is distracted driving or follow too close to another vehicle.	A distracted driving education campaign is scheduled to be released this year.
11	Lasalle Boulevard at Auger Avenue		There is a large number of turning movement and angle collisions involving eastbound and westbound vehicles	Implement a fully protected left turn phase for westbound vehicles so that they turn on a left turn arrow.
12	Elm Street at Lloyd Street / Notre Dame Avenue		There is a number of pedestrian and cyclist collisions in this area.	There are a number of improvements that will be realized through the Paris/Notre Dame Bikeway project. These include the added active transportation facilities, improved street lighting and removal of the channel in the south east corner of

PSI Rank	Location	Year of Improvement	Analysis	Recommendation
				the intersection.
13	Notre Dame Avenue at Louis Street / Ste Anne Road		There has been a reduction in the number of collisions occurring at this intersection since the SPI index was created.	This intersection will benefit from the Paris/Notre Dame bikeway project and staff will continue to monitor collisions at this location.
14	Notre Dame Avenue between Wilma Street and Cambrian Heights Drive		There are no discernable patterns or trends for collisions in this area.	Staff will work with Greater Sudbury Police to monitor the area.
15	Paris Street at Centennial Drive		The majority of incidents are angle collisions that occur when a driver is disobeying a traffic signal.	This intersection has been identified as a location for a red light camera installation in 2022
16	Lorne Street at Douglas Street		There has been a reduction in collisions since the safety performance index was completed.	There was a misaligned signal head at this intersection that may have been an issue for motorists approaching the intersection. The signal head has been realigned and staff will continue to monitor the intersection.

Next Steps:

Staff have completed the analysis of the remaining 10 identified locations from the 2018 network screening and will implement a series of improvements. In addition to the improvements identified, staff will be releasing a distracted driver campaign program.

As part of the network screening process, staff will perform a refresh of the network screening now that the initial 20 identified locations have been analyzed. Staff will present an updated list of locations and an update on the improvements that have been made as part of the 2023 Road Safety Assessment report.

Resources Cited