REPORT

TO: Council

FROM: Holly Cullihall

DATE: December 20, 2023

REPORT: TPS.23.33

SUBJECT: 2023 Pedestrian Safety Study

RECOMMENDATION:

That Council receive report TPS.23.33; and

That Council support the Pedestrian Safety Study; and

That Council direct staff to work with R.J. Burnside & Associates to finalize the report.

BACKGROUND AND ANALYSIS:

The Pedestrian Safety Study project was approved through the 2023 budget process. The project request was the result of pedestrian safety concerns raised at the July 26, 2022 Police Service Board meeting.

Resolution 2022-502:

That staff bring back a report to Council on the implementation and cost for a pedestrian safety study throughout the municipality.

The cost estimate and scope of work for the budget request was prepared by R.J. Burnside, and later approved by Council through the 2023 budget process. The 2022 budget approved a Crossing Guard Location Review was included in the scope of the project.

The study is in alignment with the Municipality's commitment to promoting safer, more accessible, and healthier communities for all residents and visitors, and is a part of ongoing efforts to continuously improve road and pedestrian safety in the Municipality.

OPERATIONAL CONSIDERATIONS:

The full report has been provided for Council's review and consideration. If Council would like to make changes or additions to the Pedestrian Safety Study, the following recommendation could be presented instead of the recommended option:

That Council received report TPS.23.33; and

That Council recommend that staff work with R.J. Burnside & Associates to finalize the report with the following changes:

(LIST RECOMMENDED CHANGES OR ADDITIONAL INCLUSIONS)

Alternatively, Council may defer accepting the report to a future Committee of the Whole for a more in depth review and discussion of the study.

GREY HIGHLANDS STRATEGIC PLAN:

Strong Governance - Develop long-term organizational and financial strategies to help guide Municipal planning and decision-making.

FINANCIAL IMPACT:

Upon acceptance of all or some of the Pedestrian Safety Study recommendations, there will be substantial financial implications. Once direction has been given by Council, staff can investigate the associated costs with implementing the desired recommendations.

ENVIRONMENTAL IMPACTS:

3 high positive impact

CONSULTATION:

R.J. Burnside & Associates Ltd.

Approved By: Status:

Chris Cornfield, Director of Approved - 11 Dec 2023

Transportation

Anna McCarthy, Treasurer Approved - 11 Dec 2023 Karen Govan, Chief Approved - 13 Dec 2023

Administrative Officer



Municipality of Grey Highlands Pedestrian Safety Study

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October 2023 (Revised December 2023) 300055852.1000



Municipality of Grey Highlands

Pedestrian Safety Study October 2023 (Revised December 2023)

Distribution List

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0	Yes	Yes	Municipality of Grey Highlands

Record of Revisions

Revision	Date	Description
0	October 2023	Draft Submission to Municipality of Grey Highlands
1	November 2023	Revised Draft Submission to Municipality of Grey
		Highlands
2	December 2023	Draft Submission to Municipality of Grey Highlands
		Council

R.J. Burnside & Associates Limited

Report Prepared By:

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Report Reviewed By:

Henry Centen, P. Eng. Senior Transportation Engineer

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Executive Summary

The Municipality of Grey Highlands (the Municipality) engaged R.J. Burnside & Associates Limited (Burnside) to conduct a Pedestrian Transportation Safety Study (the Study) within the overall municipal boundary. This Study is in alignment with the Municipality's commitment to promoting safer, more accessible, and healthier communities for all residents and visitors, and is a part of ongoing efforts to continuously improve road and pedestrian safety in the Municipality.

The Study focuses on the following:

- Existing conditions for pedestrian movement.
- Identification of existing safety issues related to pedestrian movement.
- Review of crossing guard requirements and/or pedestrian crossover requirements for school areas.
- Review of technical guidelines and best practices related to pedestrian safety.
- Review of municipal policies, standards and operating practices that impact the safety of pedestrian movements.

The Study reviews previous planning studies that have direct, or indirect, impacts on pedestrian facilities and safety, including the Municipality's Official Plans, Development Standards, Trail and Cycling Master Plans and Road Management Plan. The Study also includes a literature review of best practices related to transportation safety in other jurisdictions.

Various standards, guidelines and regulations are identified related to the design and operation of safe active transportation facilities, for comparative purposes in identifying the works required to mitigate safety issues, that may occur in the transportation network.

A desktop review was completed of the municipal road network and active transportation facilities, to identify major pedestrian trip generators, including schools, trailheads, and commercial areas.

To identify current pedestrian safety issues within the Study area, this Study reviewed various background reports related to active transportation and plans for active transportation upgrades, as well as design standards, transportation policies in the Municipality and best practices such as those related to Complete Streets and Vision Zero policies.

The Study reviewed a number of pedestrian safety issues / concerns that have previously been identified by area residents, as documented in previous planning reports. In addition to a review of network specific information (i.e., points of interest in the municipality that are origins or destinations for pedestrian or cyclist travel), this Study

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also completed a public resident feedback survey that asked residents for their input on what routes they commonly use, frequent method of active transportation, current infrastructure and possible infrastructure improvements. To identify the active transportation demand and the gaps of active transportation infrastructure, the online survey consisted of 21 questions. The survey was designed to collect key information regarding active transportation activities for the residents in the Municipality of Grey Highlands and provided the following conclusions:

- There were significant responses from residents in Markdale, Eugenia, Flesherton
 and Kimberley, confirming significant demand for active transportation in these
 settlements and identifying the streets with the highest demands, which were
 subsequently reviewed in greater detail in this Study.
- The primary concerns noted in the Study included:
 - Condition of the existing pedestrian infrastructure.
 - Lack of pedestrian infrastructure.
 - High traffic speeds.
 - High traffic volumes.
 - Heavy truck traffic.
 - Unsafe road crossings.
 - Insufficient buffer between cyclists and motorists.

The Study utilized a screening process to identify eight specific locations within the Municipality that have been observed to have a high demand for active transportation - encompassing activities such as walking, cycling, and other forms of non-motorized transportation, and/or areas where traffic issues have been identified by the public. The locations selected for the Study are those that will most benefit from improvements to safety and accessibility for pedestrians and cyclists. The identified locations also exhibit a high degree of conflict potential between vehicular traffic and pedestrians or cyclists, which could lead to collisions, injuries, fatalities, or reduced use of these modes of transportation, due to perceived or real safety risks.

The locations reviewed in the Study have been strategically selected to represent various types of environments in the Municipality (e.g., school zones, high traffic/urbanized areas, secondary rural settlements, etc.) so that the recommendations can inform the requirements in areas with similar characteristics. While some of the recommendations in this Study are site-specific, they can provide the basis for updating policies and standards and/or identifying improvements for other road segments or intersections within the Municipality, that have similar conditions and concerns.

Detailed review of pedestrian safety issues is completed at eight locations in this Study, including:

- Intersection of Main Street and Toronto Street in Markdale.
- CP Rail Trail crossing at Main Street West in Markdale.

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- Inkerman Street in Eugenia.
- Canrobert Street and Pellisier Street in Eugenia.
- Catchment area for Macphail Memorial Elementary School in Flesherton.
- Beaver Vally Road (County Road 13) through Kimberley.
- Grey Road 4 through Ceylon.
- Grey Road 4 through Priceville.

Recommendations were made for countermeasures to improve pedestrian safety in the detailed study areas, categorized based on what is called the 5Es: Engineering, Education, Enforcement, Engagement and Evaluation. The main countermeasures identified for consideration at the eight detailed study locations include:

- Recommendation to review signal timing adjustments.
- Consider the addition/modification of pedestrian infrastructure.
- Consider streetlight enhancements/upgrades.
- Implementation of Pedestrian Crossovers (PXOs).
- Increased education, enforcement and engagement related to pedestrian and traffic safety issues and monitoring of the effectiveness of the countermeasures.
- · Consider modification to posted speeds.
- Install traffic control signage, pedestrian signage and digital speed signs.
- Consider Automated Speed Evaluation (ASE) in the future.

The eight locations that were reviewed are to be treated as "proxy" sites that develop a foundation for reviewing other locations. This flexible approach will enable municipal staff to extend the benefits of this Study to other parts of the Municipality, promoting pedestrian and cyclist safety and active transportation across the entirety of Grey Highlands.

A study of crossing guard requirements and pedestrian crossover (PXO) requirements was completed for the following school catchment areas within the Municipality: Beavercrest Community School (Markdale), MacPhail Memorial Elementary School (Flesherton), Grey Highlands Secondary School (Flesherton) and Osprey Central Elementary School (Maxwell). The resulting conclusions and recommendations of the crossing guard / PXO study work includes:

- Beavercrest Community School Consider implementing a crossing guard at the
 existing PXO on Grey Road 12; Implement a Community Safety Zone on Grey Road
 12 in the area of the school; Monitor and enforce speeds on Grey Road 12; Monitor
 the number of safe gaps for crossing at Edith Avenue / Grey Road 12 and consider
 implementing a PXO at the intersection, if the number of safe gaps meet the
 minimum threshold established by the crossing guard criteria.
- Grey Highlands Secondary School Undertake additional study to confirm the need for a PXO crossing of Highway 10, once road construction is completed in this area.

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- MacPhail Memorial Elementary School: Monitor traffic operations at the all-way stop control intersections on Campbell Street at Hill Street and Alice Street; Undertake additional study to confirm crossing guard/PXO requirements at the intersections of Campbell Street / Toronto Road (Highway 10) and Elizabeth Street / Spring Street / Toronto Road (Highway 10) once road construction is completed in this area.
- Osprey Central Elementary School: Monitor and enforce posted speeds; Install radar speed signs, if required.

The primary conclusions and recommendations of the Study are as follows:

- Traffic speed is one of the most significant parameters affecting whether pedestrian
 collisions result in serious injury or death and therefore the Municipality is
 encouraged to adopt policies and standards that are consistent with Vision Zero
 criteria and Complete Streets design.
- It is recommended that the Municipality review the posted speeds within its road network, with a view to adjusting posted speeds, where required, to meet target speeds based on operational requirements. It is recommended that a Posted Speed Limit Policy be developed by the Municipality that outlines the process, methodology and criteria for considering adjustments to requests for adjustments to posted speeds.
- It is recommended that future comprehensive update of the Official Plan, and/or the Municipality's standards, include policies and strategies to enhance pedestrian safety, such as provision of sufficient pedestrian/cyclist infrastructure and traffic calming measures.
- It is recommended that the Municipality update its policies and standards to develop
 a prioritization strategy to remove gaps in the sidewalk network and to increase the
 sidewalks that are maintained in the winter, taking into consideration the costs and
 risks associated with current policies and strategies.
- Maintenance of active transportation facilities should meet the requirements set out in the Provincial Minimum Maintenance Standards (MMS) (Ontario Regulation 239/02, as amended by Ontario Regulation 47/13).
- It is recommended that the Municipality develop pedestrian policies within an Active Transportation and Trails Master Plan.
- It is recommended that the Municipality work with schools to assess safe routes to school and to implement the required infrastructure and controls for such routes.
- It is recommended that the Municipality implement the crossing guard / PXO
 recommendations outlined in this study, including the completion of additional study
 work, where required, once road construction affecting the Flesherton area has been
 completed.
- It is recommended that the Municipality and/or County proactively monitor traffic
 operations (i.e., vehicular, pedestrian and cyclist) and collision rates at the signalized
 intersections and trail crossings in the overall road network in Grey Highlands, to
 ensure that safe pedestrian movements are being adequately accommodated.

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- It is recommended that the Municipality implement a regular traffic monitoring program (i.e., traffic volumes and speeds) to proactively identify areas where pedestrian safety may be a concern. A number of areas have been identified in this Study for traffic monitoring.
- Any areas that are designated as a Community Safety Zone (CSZ) in urban areas should have the speed limit reduced to 40 km/h, since this is a reasonable target speed in such areas CSZ in rural hamlets may have 40 km/h or 50 km/h posted speeds, depending on the sensitivity of the adjacent development and availability of appropriate active transportation facilities. The speed limits through CSZs should be consistent, respond to a need that is recognizable by motorists, and be regularly enforced, to improve speed compliance in these areas. Where CSZs have been established in areas where the motorist does not recognize the need for such controls (e.g., in rural areas or through isolated settlements that have a streetscape that is rural in appearance) their impact on reducing speeds or increasing motorist vigilance may be very limited, and result in an impractical level of enforcement being required to be effective. It is recommended that the Municipality monitor the effectiveness of existing, or new, CSZ zones to moderate traffic speeds and/or improve safety. The implementation of Automatic Speed Enforcement (ASE) in the future may increase the effectiveness of CSZ controls.
- In areas where sufficient active transportation facilities are not currently available, the Municipality should further investigate and budget to implement satisfactory active transportation facilities in such areas, where possible.
- Where street illumination may be an issue, and development and/or pedestrian
 activity is expected, the Municipality should further investigate and budget to
 implement satisfactory streetlights.
- Where required, crosswalks at intersections (signalized or unsignalized) should be converted to ladder crosswalk markings, rather than using the standard markings.
- If pedestrian activity is present at signalized intersections, and pedestrian safety issues have been identified as a concern, the Municipality should investigate the possibility of implementing leading pedestrian intervals within the signal cycle.
- To minimize pedestrian crossing issues at signalized intersections, the Municipality should review visibility at the crossing and adjust the location of the stop bars, if possible, to minimize turning speeds, while still maintaining any required specifications to accommodate swept paths for design vehicles.
- Where uncontrolled crossings are considered for upgrading to pedestrian crossover (PXO) controls, it is recommended that the upgrades meet the guidelines set out in the Ontario Transportation Manual (OTM) Book 15 (Pedestrian Crossings) and the Pedestrian Crossing Control Guide, PCCG (Transportation Association of Canada. TAC).
- The pedestrian signage on all roads should be reviewed and replaced / upgraded, where required, to meet the most recent requirements set out in the Ontario Traffic Manual and related Acts and Regulations.

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- Where a school is present, but a formal school zone is not implemented, the Municipality should implement a school zone with uniform speed limits within the catchment area.
- All school zone areas should have sidewalks provided on at least one side of the road, with sidewalk provided on both sides if possible.
- Detailed review of pedestrian movements at trailhead parking areas has not been included in this Study, however, should be monitored regularly to confirm if there are pedestrian safety issues in those areas.
- The Municipality should complete a review of the available pedestrian infrastructure in the overall area and investigate ways to implement satisfactory active transportation facilities, where required and where feasible.
- Future plans for cycling facilities through the secondary settlements should be considered for integration with improvements to pedestrian facilities in those areas.
- Traffic signals should be reviewed, with signal timing and intersection designs upgraded to improve safety, where required.
- Pedestrian crossovers (PXOs) should be considered for trail crossings having significant pedestrian traffic, as well as in areas with significant school pedestrian traffic.
- To align the Municipality's current practice, as well as their municipal standards, with
 industry best practices, it is our recommendation that the Municipality develop a
 posted speed limit policy, traffic calming policy and active transportation policy, with
 the goal of providing for safe pedestrian operations and moving towards a Complete
 Streets system that supports Vision Zero principles.

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Appendix A Sidewalk Inventory Map (2018)

Appendix B Mapping of Points of Interest Generating Pedestrian and Cyclist Traffic

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Municipality of Grey Highlands

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Pedestrian Safety Study October 2023 (Revised December 2023)

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1.0 Introduction

The Municipality of Grey Highlands (the Municipality) engaged R.J. Burnside & Associates Limited (Burnside) to conduct a Pedestrian Safety Study within the overall municipal boundary. This Study is in alignment with the Municipality's commitment to promoting safer, more accessible, and healthier communities for all residents and visitors, and is a part of ongoing efforts to continuously improve road and pedestrian safety in the Municipality.

The Study focused on the following:

- Existing conditions for pedestrian movement.
- Identification of existing safety issues related to pedestrian movement.
- Review of crossing guard requirements and/or pedestrian crossover requirements for school areas.
- Review of technical guidelines and best practices related to pedestrian safety.
- Review of Municipal policies, standards and operating practices that impact pedestrian movement.

The Study utilized a screening process to identify eight specific locations within the Municipality that have been observed to have a high demand for active transportation - encompassing activities such as walking, cycling, and other forms of non-motorized transportation, and/or areas where traffic issues have been identified by the public. The locations selected for the Study are those that will most benefit from improvements to safety and accessibility for pedestrians and cyclists. The identified locations also exhibit a high degree of conflict potential between vehicular traffic and pedestrians or cyclists, which could lead to collisions, injuries, fatalities, or reduced use of these modes of transportation, due to perceived or real safety risks.

Once these locations were identified, this Study developed location-specific recommendations designed to improve safety and encourage active transportation. These recommendations are grounded in best practices for urban planning and traffic management and have been tailored to the unique characteristics and needs of each location.

While the recommendations at the detailed study areas are site-specific, they can provide the basis for updating policies and standards and/or identifying improvements for other road segments or intersections within the Municipality, that have similar conditions and concerns. The eight locations that were reviewed are to be treated as "proxy" sites that develop a foundation for reviewing other locations.

The eight locations reviewed in this Study have been strategically selected to represent various types of environments in the Municipality (e.g., school zones, high

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traffic/urbanized areas, rural communities, etc.), so that the recommendations can inform the requirements in areas with similar characteristics. This flexible approach will enable municipal staff to extend the benefits of this Study to other parts of the Municipality, promoting pedestrian and cyclist safety and active transportation across the entirety of Grey Highlands.

A study of crossing guard requirements and pedestrian crossover (PXO) requirements was completed for the following school catchment areas within the Municipality: Beavercrest Community School (Markdale), MacPhail Memorial Elementary School (Flesherton), Grey Highlands Secondary School (Flesherton) and Osprey Central Elementary School (Maxwell).

Through this Pedestrian Safety Study, the Municipality of Grey Highlands and R.J. Burnside & Associates Limited aspire to take a significant step forward in promoting a safer and more sustainable transportation environment, contributing to the wellbeing and quality of life for all who live, work, and visit Grey Highlands.

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2.0 Background Review

To identify current pedestrian safety issues within the Study area, Burnside reviewed relevant background reports related to active transportation and plans for active transportation upgrades, as well as design standards for the Municipality. The background documentation reviewed as part of this Study consists of, but is not limited to:

- Official Plan, Municipality of Grey Highlands (Approved by County September 22, 2017, Appeals Consolidated Version February 11, 2022).
- Municipality of Grey Highlands Development Standards Policy (August 25, 2014).
- Municipality of Grey Highlands 2018 Road Management Plan (Burnside, December 2020).
- Grey County Recreational Trails Master Plan.
- Municipality of Grey Highlands Recreation Master Plan.
- Grey County Cycling and Trails Master Plan (October 2020)
- Municipality of Grey Highlands Draft Trails Master Plan (May 2019).
- Minutes of meetings held by the Road Safety Community Partnership Committee (RSCPC).
- Documents identifying best practices in other municipalities (e.g., North Grenville Road Safety Strategy, Road Safety in Canada Study).

2.1 Official Plan for the Municipality of Grey Highlands

Our review indicates that the Municipality's Official Plan provides the following guidance relative to pedestrian travel:

- The Plan's vision notes that it promotes the use of Active Transportation, although there are no specific policies delineated to support this vision.
- Schedule D of the Official Plan (Transportation) delineates all roads under the jurisdiction of Grey Highlands as Municipal Roads, with no differentiation of their functional classification (i.e., local, collector, arterial).

The need to update some policies, relative to active transportation and road classifications, to improve the safety for active transportation, are reviewed in subsequent sections of this pedestrian safety study.

While a review of Official Plan policies is beyond the scope of this current study, it is recommended that, in future comprehensive updates of the Official Plan, the Municipality consider policies and strategies relative to the following, to enhance pedestrian safety:

Promotion of a "complete streets" approach to the design of planned improvements
or additions to the street network within the settlement areas. Complete streets
should provide for the safety and ease of use of multiple means of transportation,
including vehicular, pedestrian, bicycle and transit (where required). Complete

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- streets should be designed to enhance the pedestrian experience by promoting a high level of safety, comfort and convenience.
- Sidewalks are important elements of complete streets. They should be designed to
 be accessible and to promote pedestrian comfort and continuous connectivity within
 and between neighbourhoods, and to all community amenities and key place making
 destinations. Sidewalks should be provided on at least one side of private and public
 local streets, except rural roadways. Sidewalks should be provided on both sides of
 collector roads and arterial roads, as well as on local roads in the vicinity of schools,
 to ensure the safety of students.
- Roadway and engineering standards should be updated to reflect the principle of
 complete streets and to promote pedestrian scale and the comfort and safety of
 pedestrian, cyclists and all active transportation modes. Roads and crossings should
 be designed with target speed that reduce traffic speeds, without the need for
 significant enforcement.
- Traffic calming measures should be integrated into the road network to protect
 pedestrians and cyclists, with an emphasis on downtown commercial areas, mixed
 use areas, school zones, areas frequented by other vulnerable populations
 (e.g., seniors' residences, parks, etc.) and areas where pedestrian and cyclist
 infrastructure is limited.
- Active transportation strategies should be developed within a Trails Master Plan, to
 include the completion of a short-, medium- and long-term network of multi-use trails,
 secondary trails, sidewalks, paved shoulders and/or cycling lanes, and pedestrian
 crossings.
- Identifying and demarcating safe pedestrian and cycling routes to schools and promoting these routes to residents through maps and other materials.
- Consider winter maintenance of multi-use trails, particularly along routes that connect pedestrians to key destinations, such as schools.
 Encourage the County of Grey to provide off-road pedestrian/cycle routes within County Road right-of-ways.
- Work with stakeholders to implement adequate and safe pedestrian facilities at trail heads.

2.2 Municipality of Grey Highlands Development Standards Policy

The Municipality's Development Standards Policy provides the following guidance impacting active transportation facilities:

- Roads situated in primary settlement areas, which are served by a sanitary sewer system, shall be constructed to an urban standard (i.e., curb and gutter and sidewalks).
- The Municipality may consider a semi-urban cross section (i.e., roadside swales or ditches) in the recreation areas, in the secondary settlement areas (hamlets), and in developments where lot frontage exceeds 25 metres (m).

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- Street allowances shall be a minimum of 20 m wide.
- In new subdivisions, sidewalks are required on both sides of all arterial and collector roadways and at least one side of all local urban streets. The Municipality's typical road cross-section for an Urban 20 m R.O.W. includes a 1.5 m sidewalk, with 1.95 m buffer to the curb. The typical semi-urban section for a 20 m R.O.W. includes 1.2 m gravel shoulders on each side of a 6.5 m wide asphalt travel surface. The typical rural section for a 20 m R.O.W. includes 1.0 m gravel shoulders on each side of a 6.7 m wide asphalt travel surface. No specific allocation of space is provided for active transportation in the semi-urban cross-section or the rural cross-section, and therefore it is assumed that pedestrians would utilize the gravel shoulders in these areas.

The provision of active transportation facilities (e.g., sidewalks, trails, bike lanes, paved shoulders), adequately buffered from vehicular traffic, directly impacts the safety of pedestrian and cyclist travel within the transportation network.

The need to update the cross sections to accommodate safer infrastructure for active transportation will be considered further in this pedestrian safety study, both within the development standards and for roads where the Municipality is undertaking rehabilitation or reconstruction.

2.3 Municipality of Grey Highlands 2018 Road Management Plan (2020)

Burnside completed a Road Management Plan (RMP) for The Municipality of Grey Highlands in 2020. The RMP reviewed the 2018 Sidewalk inventory throughout the Municipality. Table 1 summarizes the surface type and lengths of the existing sidewalks in the settlement areas.

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Table 1: 2018 Sidewalk Inventory by Settlement Area

Community	Surface Material	Total Length of Sidewalk (m)	Total Length of Sidewalk (%)
Markdale	Asphalt	500	2.5%
Markuale	Concrete	10,271	52.0%
	Asphalt	831	4.2%
Flesherton	Concrete	5,620	28.4%
	Earth	25	0.1%
Priceville	Concrete	779	3.9%
Ceylon	Asphalt	511	2.6%
Maxwell	Concrete	273	1.4%
Kimberley	Concrete	655	3.3%
Eugenia	Asphalt	173	0.9%
Feversham	Concrete	130	0.7%
Total		19,768	100%

As shown in the above table, approximately 17.73 km (89.6%) of the Municipality's sidewalks are concrete, approximately 2.02 km (10.2%) are asphalt and approximately 25 m (0.1%) are earth surface. Additionally, the two major communities, Markdale and Flesherton, have approximately 10.43 km (57.7%) and 6.48 km (33.3%) of the total sidewalks in the Municipality, respectively. The maps of the 2018 sidewalk inventory are included in Appendix A. A review of these maps indicates that there are significant gaps in the Municipality's sidewalk network, as summarized in the Table 2.

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Table 2: Sidewalk Network Gaps by Settlement Area

Community	Sidewalk Network Gaps
Ceylon	No sidewalks on local roads
	Sidewalks on one side only of County Arterial Road, with gaps.
Eugenia	No sidewalks on local roads or on County Arterial Road
Feversham	No sidewalks on local roads or on County Arterial Road
Flesherton	Sidewalks on both sides of County Arterial Road, with gaps
	Sidewalks on one side of some local roads although about 60.4%
	have no sidewalks.
Kimberley	Sidewalk on one side of County Arterial Road
	No Sidewalks on local roads
Markdale	Sidewalks on both sides of County Arterial Road, with gaps
	Sidewalks on one or two sides of local roads, although about
	35.9% have no sidewalks
Maxwell	Sidewalks on one side of County Arterial Road
	No Sidewalks on local roads
Priceville	Minimal sidewalks on one side of County Arterial Road
	Sidewalks on one side of a few local roads, although about 86.7%
	have no sidewalks.

It is acknowledged that the road designs, including facilities for active transportation, reflect the Municipality's historical standards and level of service for this infrastructure, that existed at the time of its development. For roads in urban or semi-urban areas the typical design practice will include the provision of sidewalks on one side of local roads and both sides of collector roads and arterial roads. Considering a growing interest in multi-modal travel and an increased emphasis on pedestrian and cyclist safety, it is recommended that the Municipality develop a prioritization strategy to remove gaps within the sidewalk network.

The Municipality's 2018 Road Management Plan made the following conclusions and recommendations relative to sidewalks:

- About 6% of the sidewalks were identified to need replacement (i.e., either via panel replacement or via providing appropriate alternative facilities along the road shoulders).
- A winter maintenance program was recommended for sidewalks in Markdale and Flesherton, in accordance with their road classifications under the Provincial Minimum Maintenance Standards
- Sidewalks in Priceville, Ceylon, Maxwell, Kimberley and Eugenia are not maintained in the winter and considered to be closed between November 1 and April 15.

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The 2018 RMP provided operational and locational criteria for prioritizing the maintenance of sidewalks within the network and recommended further study be completed to assess the relative risks of not maintaining Priority 4 sidewalks. Consideration should be given to the potential legal liabilities of not meeting Minimum Maintenance Standards (MMS) requirements and of the need to adequately inform potential users of this infrastructure of winter closure of these sidewalks (e.g., through signage).

It is recommended that the Municipality develop a detailed sidewalk maintenance policy. Social, economic, political and legal factors should be balanced in the formulation of a maintenance policy for sidewalks, to address either sidewalk condition or winter maintenance, including the following considerations:

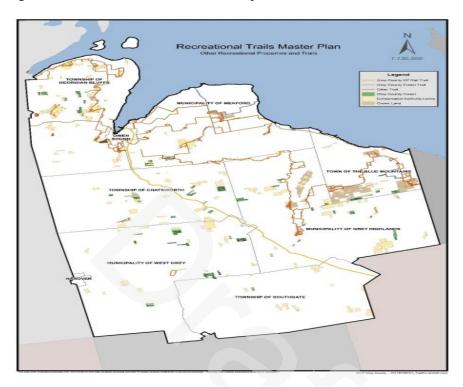
- Political considerations cost to taxpayers for increased sidewalk maintenance.
- Social considerations public safety, desire to encourage downtown shopping, etc.
- Economic considerations availability of equipment and staff, costs of repairs / replacements, etc.
- Legal considerations minimization of liability.

2.4 Grey County Recreational Trails Master Plan

The Grey County Recreational Trails Master Plan was developed in 2019. The Plan identifies trails on 45 County-owned individual forest properties and 77 km of CP Rail Trail, from Owen Sound to Dundalk. These forests and their recreational trails are enjoyed by many people for a variety of activities. Figure 1 shows the trails identified in the Recreational Trails Master Plan.

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Figure 1: Recreational Trails from County Recreational Trails Master Plan



Source: Grey County Recreational Trails Master Plan.

Safe pedestrian facilities and routes should be provided between parking areas and trailheads, as well as at trail crossings of roadways. It is recommended that all trailhead areas be reviewed in the future to ensure safe access is available.

2.5 Grey Highlands Recreation Master Plan

The Municipality completed a draft Recreation Master Plan project that consisted of reviewing the available recreation facilities in the Municipality as well as their demand and utilization. The facilitation of safe pedestrian movements to these facilities should be a consideration in developing a prioritization strategy to improve pedestrian safety within the municipality.

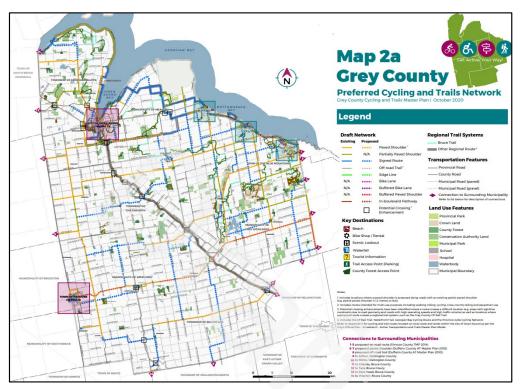
2.6 Grey County Cycling and Trails Master Plan

The Grey County Cycling and Trails Master Plan was completed in October 2020. The Plan proposed a total of 184.3 km of cycling and trail facilities within the Municipality of Grey Highlands with approximately 119.1 km of the planned route to be located on

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County Road right-of-ways. Figure 2 below illustrates the proposed trail / facility network from the 2020 Master Plan.

Figure 2: Grey County Cycling and Trails Network



Source: Grey County Cycling and Trails Master Plan.

Based on the map, the following routes are proposed within the Municipality of Grey Highlands:

Buffered Paved Shoulder:

- Grey Road 4.
- Grey Road 124 / Grey Road 31.

Paved Shoulder:

- Grey Road 4 (between the CP Rail Trail and Priceville).
- Grey Road 7.
- Grey Road 12 from Grey Road 30 to Markdale.
- Grey Road 30 (Grey Road 12 to 7th Line).
- Grey Road 2 (Grey Road 31 to Feversham).

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• Grey Road 13 (Grey Road 119 to Eugenia).

Signed Route:

- Grey Road 30.
- 12th Concession B (Grey Road 13 to Grey Road 2).
- 8th Concession / 8th Concession A (Grey Road 13 to Grey Road 2).
- Sideroad 35 (8th Concession to 10th Concession).
- 10th Concession (Side Road 35 to Osprey Artemesia Townline).
- Osprey Artemesia Townline (10th Concession to 12th Concession B).
- Road 63.
- Grey Road 9.

The planned cycling and trails are considerations in identifying future areas that may attract additional pedestrian and cyclist travel, with the following observations made in this current Study:

- A buffered paved shoulder is planned on Grey Road 4 in the long term which may direct additional cyclist traffic through Maxwell, Flesherton, Ceylon and Priceville.
- A paved shoulder is planned on Grey Road 12 in the long term which may direct additional cyclist traffic through Markdale.
- A paved shoulder exists on Grey Road 13, south of Eugenia, and is planned, in the long term, to the north of Eugenia, which may direct additional cyclist traffic through Eugenia.
- A paved shoulder exists on Grey Road 2, south of Feversham, and is planned in the long term to the north of Feversham, which may direct additional cyclist traffic through Feversham.
- A paved shoulder is planned on Grey Road 13, in the long term, which may direct additional cyclist traffic through Kimberley.

Pedestrian safety improvements in the settlement areas should take into consideration the planned cycling improvements in those areas, to effectively integrate pedestrian and cyclist travel along those corridors.

2.7 Municipality of Grey Highlands Trails Master Plan

The Municipality's Draft Recreation Master Plan (May 2019) provides the following guidelines that impact pedestrian safety:

- Road crossings should be developed and maintained to have open sightlines to the road (at least 60 m back from high-speed roads and 30 m back from low-speed roads).
- Proper signage should be provided along the roadways to alert users of upcoming roadway crossings.

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- Proper signage should be provided on trails and at trailheads, including traffic control signage meeting the requirements of the Manual of Uniform Traffic Control Devices, Ontario 1996 Ontario Bikeways Planning and Design Guidelines, Transportation Association of Canada (TAC) guidelines and OFSC signage manual.
- Road crossings should be as close as possible to perpendicular to minimize crossing lengths.
- Where appropriate, traffic signals should be installed to regulate crossings and ensure the safety of both motorists and trail users.
- Designs of on-road bike facilities should be in accordance with guidelines established by the Ministry of Transportation (MTO) and TAC.

The trails proposed in the Markdale Loop are shown in the following figure:

Trai County
levels

Municipality of Grey Highlands
Trails Master Plan
Markdale Loop

Legend
Grey County Rail Trail
Existing Informal Trail
Proposed Informal Trail
Proposed Unicipal Built Trail
Proposed Municipal Built Trail
Proposed Development Built Trail

Municipality of Grey Highlands Trails Master Plan
October 2018

Figure 3: Trails Master Plan (Markdale Loop)

Source: Municipality of Grey Highlands Trails Master Plan.

2.8 Information Considered by the Road Safety Community Partnership Committee (RSCPC)

The Municipality of Grey Highlands implemented the Road Safety Community Partnership Committee (RSCPC) in 2023, with a mandate to provide recommendations to Council on a community perspective to review road safety issues throughout the Municipality and educations for road safety programs and initiatives. Information that

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may impact pedestrian safety is included in some of the information that has been considered by the RSCPC. Based on our review of the RSCPC information, the following conclusions apply:

- Motor vehicle collision data for Grey Highlands for 2022, obtained from the OPP, shows the following causative factors, as percentages of total collisions: speed (11%, however 85% of these are due to "speed too fast for conditions"), animal (27%), alcohol (4%), inattentive (10%), lost control (12%), traffic violation/error (14%), other (20%).
- The OPP provided 162.5 hours of focused patrols in Grey Highlands, resulting in 81 charges and 40 warnings.
- The RSCPC is recommending that Council direct staff to work with LAS for the purpose of implementing Automated Speed Enforcement in the Municipality. Council subsequently endorsed the committee's recommendation.
- The RSCPC is currently considering a request to implement a Community Safety Zone through the Feversham Community.
- RSCPC is currently reviewing traffic flow on Toronto Street North and South through Markdale, considering the recent large-scale development within Markdale (new Markdale hospital, Foodland, Tim Hortons, new Beavercrest Community School, subdivisions).
- The RSCPC is currently considering a request to extend the 50 km/h speed limit on Grey Road 2, to the south of Maxwell to beyond the Maxwell Garden Center, considering that there is a busy Mennonite retail business which is currently located within the 80 km/h zone. Council subsequently endorsed the committee's recommendation.
- The RSCPC is recommending that the existing school zone sign with flashing lights be relocated further to the south so that it meets the spacing requirements to the school entrance under the Highway Traffic Act, RSO 1990, C H.8, and that school zone ahead signage be placed in all directions approaching Maxwell (i.e., on Grey Road 2, Grey Road 4 and Road 45).
- The RSCPC is considering a recommendation for placement of signage identifying "Walk on Left Facing Traffic" in areas without designated pedestrian facilities.
- The RSCPC is recommending that Council include an item in the 2024 municipal budget for "road safety improvements".

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2.9 Literature Review - North Grenville Road Safety Strategy

Burnside undertook a literature review to identify road safety strategies that may inform best practices being considered in other municipalities. One such study was The Road Safety Strategy for North Grenville, developed by Paradigm Transportation Solutions in November 2021. It is the Municipality of North Grenville's goal to provide an integrated transportation system with safer roads and sidewalks. The Safety Strategy outlines the "Safe System" approach to road safety, which includes eliminating fatal and serious injuries for road users by making severe outcomes avoidable. This approach is designed to anticipate human error and keep energy impact on the human body at a tolerable level. The Safe System approach places responsibility on the system planners, designers and operators as well as the network users. Figure 4 below outlines the Safe Systems approach.

POUCY/LEGISLATION/REGULATION
VOUNG/NOVICE DRIVERS

DISTRACTION

TOLERANCE TO
PHYSICAL
FORCE

SAFE ROAD INFRASTUCTURE

LIMITAGES

LIMITAGES

ORDER

LIMITAGES

ON THE SECOND STATE OF THE SECO

Figure 4: Safe System Approach to Road Safety

Source: Canadian Association of Road Safety Professionals.

The Safety Strategy highlights the importance of good quality data and the role it has in road safety programs. Good quality data is a core foundation of a successful road safety improvement program. Road agencies rely on collision data and road data as an isolated form of decision making or as a joint source with other information to help guide policies and inform the analysis that will result in decision making. As part of the Safety Strategy, the Municipality of North Grenville hosted a survey to engage the public and gather community input. The top issues that were reported in this survey were speeding, failure to follow road signs and traffic congestion. In this Safety Strategy it was mentioned that

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the top improvements that were favoured by the public were infrastructure improvements and increased enforcement, along with designated truck routes and truck restrictions. The Safety Strategy proposed multiple countermeasures for review. A countermeasure is an action taken to improve road safety and reduce frequency and/or severity of collisions. The following list are some of the countermeasures proposed in the North Grenville Safety Strategy:

- Traffic Calming Measures implementing physical traffic calming measures.
- Speed Limits -review and reduce (where applicable) the posted speeds.
- Electronic Radar Speed Signs develop a policy regarding the use of electronic radar signs to remind motorists of posted speed limits.
- Lawn Signs -implement a program providing lawn signs encouraging slower driving in neighbourhoods and hamlets.
- Aggressive Driving Media Messaging -utilize social media platforms to highlight the danger to the public of aggressive driving.
- Targeted Police Enforcement develop a list of key areas to have police enforcement to take place.
- Pedestrian and Cycling Facilities implement pedestrian and cycling facilities and identify a prioritization method for filling the missing links in the pedestrian network.
- Community Safety Zones, implement Community Safety Zones in areas where there
 is a heightened risk for pedestrians and cyclists.
- Enhanced and Protected Pedestrian Crossings implement enhanced and/or controlled crossings at intersections and midblock locations where it is determined to be warranted.
- Streetlighting implement a policy to provide nighttime illumination for the roads, especially in rural areas.

When implementing the above countermeasures, the Municipality should continuously review before/after data and continuously reprioritize countermeasures to ensure that road safety is kept as a top priority.

2.10 Literature Review - Road Safety in Canada Study

Transport Canada completed a report, entitled Road Safety in Canada, that looked at Canada's progress made during the "Decade of Action" between 2011 and 2020 towards a Road Safety 2025 vision of zero fatalities and serious injuries (Vision Zero). Road safety has improved in terms of overall rates of fatalities and serious injuries over this time period, with fatalities and serious injuries down by 22% and 35% respectively. However, in 2020, the leading contributing factors for fatalities were speeding (25%) and distracted driving (21%). Pedestrian fatalities and severe injuries decreased between 2011 and 2020 by 11% and 26% respectively. Out of the pedestrian fatalities and severe injuries, 68% occurred on urban roads with approximately 54% of those collisions

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occurring at intersections. The report presented the following countermeasures as possible ways to improve road safety for vulnerable road users.

- Technology such as speed and/or red-light cameras.
- Road infrastructure improvements such as segregated bike lanes.
- Bicycle boxes for turning.
- Advanced signals for pedestrians and cyclists.
- Automatic pedestrian detection at crosswalks.
- Devices on heavy vehicles to detect nearby pedestrians or cyclists.
- · Police enforcement of traffic rules.
- Awareness and education programs for all road users.

The report notes that municipalities are responsible for developing and implementing jurisdictional road safety initiatives (e.g., legislation, regulation, enforcement, road infrastructure, public awareness, and education).

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3.0 Active Transportation Facility Guidelines

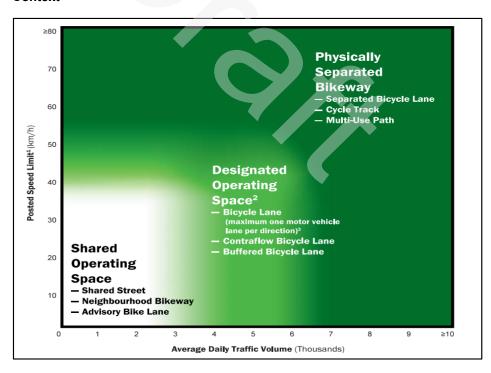
The Safe System Approach to road safety requires the establishment of safe road infrastructure, which includes the provision of active transportation facilities that meet design guidelines and requirements, as set out in greater detail in subsequent sections of this Study. It is recommended that these guidelines be integrated into the designs of active transportation infrastructure within the Municipality.

3.1 Ontario Traffic Manual Book 18 – Cycling Facilities

Ontario Traffic Manual (OTM) Book 18 – Cycling Facilities, published by the Ministry of Transportation Ontario (MTO), provides guidelines for selecting and designing cycling facilities under different traffic and land use conditions.

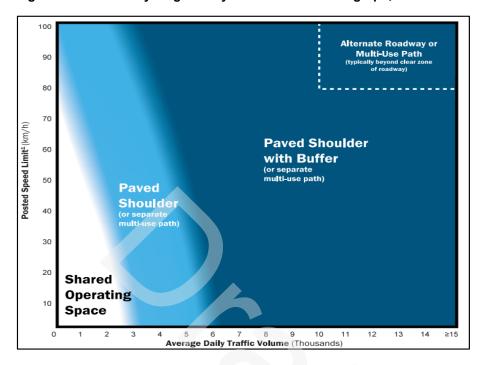
The pre-selection monographs for urban/suburban context and for rural context are shown in Figure 5 and Figure 6, respectively, depending on the average daily traffic volume and the posted speed limit.

Figure 5: Desirable Cycling Facility Pre-Selection Monograph, Urban/Suburban Context



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Figure 6: Desirable Cycling Facility Pre-Selection Nomograph, Rural Context



3.2 Guidelines for Pedestrian Crossing Treatments

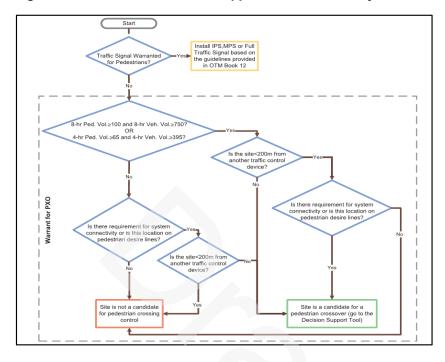
Ontario Traffic Manual (OTM) Book 15 – Pedestrian Crossing Treatments, published by the Ministry of Transportation and the Pedestrian Crossing Control Guide (PCCG), published by the Transportation Association of Canada, are referenced as the primary resources to inform the recommendations for pedestrian crossing treatments at different locations in this Study.

3.2.1 Ontario Traffic Manual Book 15-Pedestrian Crossing Treatments

The purpose of OTM Book 15 is to provide practical guidance and application information on the planning, design, and operation of crossing treatments and to promote uniformity of approaches across Ontario. The Decision Support Tool – Preliminary Assessment, provided in OTM Book 15, is shown in Figure 7.

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Figure 7: OTM Book 15 Decision Support Tool - Preliminary Assessment



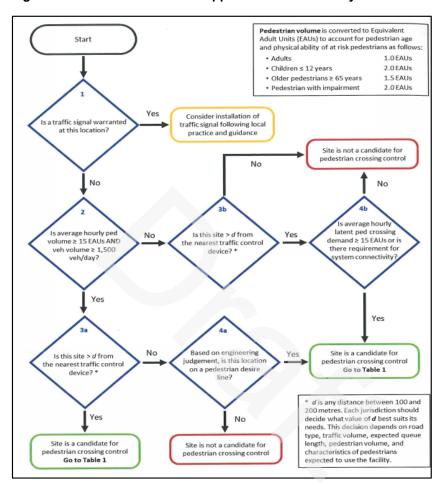
3.2.2 TAC Pedestrian Crossing Control Guide (PCCG)

The main objective of the TAC PCCG is to promote uniformity across the country, for the approach used in the provision of pedestrian crossing control. This is done through the development of a decision support tool to assist in the decision-making process, when establishing the need for traffic controls, to enable pedestrians to cross roadways safely. The PCCG assists in identifying the type of traffic control device that would be most suitable for the location's cross section, vehicular exposure, and pedestrian demand.

The TAC PCCG provides a decision support tool, as shown in Figure 8.

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Figure 8: TAC PCCG Decision Support Tool - Preliminary Assessment



For locations that are candidates for pedestrian crossing control, Table 3 shows the treatment selection matrix recommended by TAC, for 1-lane or 2-lane cross sections, based on average daily traffic (ADT) and posted speed limit.

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Table 3: Decision Support Tool - Treatment Selection Matrix

Average Daily Traffic	Speed Limit (km/h)	Treatment
1,500 – 4,500	<=50	Crosswalk with side-mounted signs
	60	Enhanced crosswalk with side-mounted signs
	70	Rectangular rapid flashing beacons
4,501 – 9,000	<=50	Crosswalk with side-mounted signs
	60	Enhanced crosswalk with side-mounted signs
	70	Rectangular rapid flashing beacons
9,001 – 12,000	<=50	Crosswalk with side-mounted signs
	60	Rectangular rapid flashing beacons
	70	Overhead flashing beacon systems or special
		crosswalks
12,001 – 15,000	<=50	Rectangular rapid flashing beacons
	60	Rectangular rapid flashing beacons
	70	Overhead flashing beacon systems or special
		crosswalks
>15,000	<=50	Rectangular rapid flashing beacons
	60	Rectangular rapid flashing beacons
	70	Overhead flashing beacon systems or special crosswalks

3.3 Sidewalk and Cycling Facilities Maintenance Guidelines

3.3.1 Minimum Maintenance Standard Considerations

Under Section 44(1) of the Municipal Act, 2001, municipalities are obligated to maintain highways in a reasonable state of repair. Case law indicates that sidewalks are a portion of the highway. Under Section 44 (9) of the Municipal Act, 2001, a municipality has no liability caused by snow or ice on sidewalks, except due to "gross negligence" by the Municipality. Ontario Regulation 239/02, Minimum Maintenance Standards ("MMS"), as amended by Ontario Regulation 366/18, sets out minimum requirements for inspection and response times associated with the maintenance of various municipal infrastructure items, including sidewalks. The intent of the legislation is to reduce the Municipality's potential liability, if it can be shown that acceptable standards were in place for this maintenance at the time of an issue arising (e.g., collision, slip and fall, etc.). It is important to note that the MMS does not cover every circumstance, and that there have been cases where the MMS did not provide an adequate defense to remove liability from the Municipality. In Crinson v. Toronto (2004), Toronto was found to be grossly negligent for failing to begin sidewalk salting in a reasonable timeframe,

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considering that forces were deployed earlier to address road maintenance. In Giuliam vs Halton (2011) the MMS did not provide an adequate defense since the legislation did not adequately address avoiding or preventing ice formation on roads. The MMS was subsequently updated (Ontario Regulation 47/13) to address this issue. In Billings v. Mississauga the courts decided that Mississauga was not grossly negligent despite not being able to clear sidewalks of snow to their policy's level of service (i.e., 36 hours), due to the extraordinary atmospheric event that made it almost impossible. It is expected that application of the MMS will continue to be tested for circumstances that may arguably fall outside the scope of the regulations. However, within the context of developing a future maintenance program for the Municipality and the potential for liability, the following should be considered:

- Any policy that the Municipality develops and adopts should be considered
 reasonable considering the Municipality's available resources and workload during
 winter events. The MMS are not legally enforceable standards; however, they will be
 a consideration in determining the question of negligence. Exceeding the MMS may
 be advisable to minimize liability.
- The Municipality must adhere to any future policy with respect to the actions that must be taken by the Municipality and within specified timeframes.
- The Municipality must be able to prove (via accurate records) that at the time that an
 action arises, the service provided by the Municipality met or exceeded the standard.

The Municipality follows the MMS as outlined in *the Maintenance Standards Plan for Municipal Roadways* (Policy No. A09-T-02, Municipality of Grey Highlands, 2013). However, the Municipality currently references compliance with Ontario Regulation 239/01, as amended by Ontario Regulation 47/13, while the more recent amendment (Ontario Regulation 366/18) modifies the requirements for sidewalk maintenance. It is recommended that the Municipality conform to this more recent amendment, particularly to address the following notable changes:

- The introduction of winter maintenance standards for bicycle lanes.
- The introduction of winter maintenance standards, including patrol obligations, for sidewalks.
- The ability for municipalities to declare a "significant weather event" with implications for winter maintenance on roadways, bicycle lanes and sidewalks during the duration of the event.
- Inspection standards for areas "adjacent to sidewalks".

It is recommended that the Municipality consider including weather monitoring provisions in their Winter Maintenance Policy, as set out in the *Minimum Maintenance Standards* for Municipal Highways (Ontario Regulation 239/02, as amended). Note that the Municipality considers its winter months (for road operations) to occur between

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November 15 and March 15 of each calendar year, as outlined in the Municipality's policy A09-T-02 (2013), however weather is monitored from November 1 to March 30.

The MMS, as amended, currently includes various provisions with respect to bike lane maintenance and sidewalk maintenance, as outlined in the following sections.

3.3.2 Minimum Maintenance Standards for Bicycle Lanes

The MMS for winter maintenance of bicycle lanes are summarized in Table 4. Under the MMS Regulation, bicycle lanes are defined as:

- (a) a portion of a roadway that has been designated by pavement markings or signage for the preferential or exclusive use of cyclists, or
- (b) a portion of a roadway that has been designated for the exclusive use of cyclists by signage and a physical or marked buffer.

Therefore, unmarked paved shoulders are not considered bicycle lanes, even if they do accommodate bicycle travel.

As shown in Table 4, establishing designated bicycle lanes have maintenance implications, specifically during the winter months.

Table 4: Minimum Maintenance Standards for Bicycle Lanes

Class of Highway or Adjacent Highway	Snowfall Depth (cm)	Snow Clearance Time for Bicycle Lanes (hours)	Snow Clearance Time for Roadways (hours)
1	2.5	8	4
2	5	12	6
3	8	24	12
4	8	24	16
5	10	24	24

Based on this, unmarked paved shoulders may be the preferred option for providing active transportation facilities on the Municipality's roads, since the more stringent maintenance requirements of designated bike lanes would not need to apply.

3.3.3 Minimum Maintenance Standards for Sidewalks

The Municipality's current policy with respect to sidewalk condition and maintenance includes the following:

- Summer Inspection and Maintenance Plan
 - The frequency of inspecting sidewalks to check for surface discontinuities greater than 2 cm is once per calendar year, with inspection taking place less than 16 months from the previous one.
 - Sidewalks found to have greater than a 2 cm discontinuity should be recorded electronically, reported and addressed within 14 days by:
 - Permanent or temporary repairs.
 - Preventing access to the area of discontinuity; or
 - Alerting the users' attention with signage or warning marks.
- Winter Inspection and Maintenance Plan
 - The frequency of inspection of winter-maintained sidewalks is once per day during winter months of operation.
 - Once snow removal is deemed necessary, staff and equipment are deployed as soon as is practicable to address sidewalk conditions in the primary settlement areas of Markdale and Flesherton.

The MMS for sidewalks outline maintenance requirements to address the physical condition of the sidewalk and the ongoing maintenance required to address weather events.

The MMS for sidewalks identify the physical condition of the sidewalk to include trip ledges over 20 cm or encroachment obstructions adjacent to sidewalks.

The MMS to address weather events indicate that snow accumulation on sidewalks shall be reduced to less than or equal to eight centimetres within 48 hours of the end of a snow event. The MMS also indicates that icy sidewalks are to be treated within 48 hours of the Municipality becoming aware of the fact that a sidewalk is icy and/or within 48 hours of the Municipality declaring the end of a significant weather event.

The relative priority rank, within each priority category should consider whether the sidewalk is in a high pedestrian traffic area, the typical age of pedestrians in an area, and the land use serviced (e.g., business district, schools, hospitals, etc.). Addressing trip hazards will also need to meet the requirements of the MMS.

It is recognized that the level of service (LOS) for maintaining sidewalks will be subject to the availability of budget and municipal staff. The Municipality's Road Needs Study provides a possible winter maintenance program for sidewalks which outlines their

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priority, locational criteria and recommended LOS. The following improvement priorities are proposed to address the sidewalk condition and maintenance needs:

Priority 1 – Condition Rating 4 Panels that are trip hazards. These hazards are to be addressed as soon as possible or marked as a hazard if there is a substantial delay in addressing them.

Priority 2 – Condition Rating 4 Panels that are not trip hazards. These deficiencies should be addressed as soon as possible, but may be delayed by crew availability, environment, budget, etc.

Priority 3 – Condition Rating 3 Panels (as budget allows). Addressing these deficiencies may be delayed or coordinated with future reconstruction work.

The criteria and Level of Service recommended for the various priority categories of sidewalk maintenance are shown in Table 5: Recommended Criteria and Level of Service for Sidewalk Maintenance:

Table 5: Recommended Criteria and Level of Service for Sidewalk Maintenance

Priority Category	Criteria*	Level of Service
1	Sidewalks in hospital, school, and senior residence areas. Roads in such areas include: Campbell Street (Flesherton). Victoria Street (Markdale). Argyle Street from Cavan Street to Main Street (Markdale). Isla Street from Argyle Street to Wellington Street (Markdale).	 Plows dispatched when snow depth equal to or greater than 5 cm. Ice treatment is to be deployed after becoming aware of need. Plows to remove snow to a snow packed surface and simultaneously apply a sand / salt mixture, if required. Snow to be cleared within 12 hours following a winter storm event. Ice treatment to be applied within eight hours of becoming aware of need.

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Priority Category	Criteria*	Level of Service
2	Sidewalks on MMS Class 3 or 4 roads (i.e., Toronto Street, Toronto Road, Collingwood Street, Main Street, and Durham Street).	 Plows dispatched when snow depth equal to or greater than 5 cm. Ice treatment to be deployed after becoming aware of need. Plows to remove snow to a snow packed surface and simultaneously apply a sand / salt mixture, if required. Snow to be cleared within 16 hours following a winter storm event. Ice treatment to be applied within 12 hours of becoming aware of need.
3	Sidewalks on MMS Class 5 roads in Markdale and Flesherton.	 Plows dispatched when snow depth equal to or greater than 8 cm. Plows to remove snow to a snow packed surface and simultaneously apply a sand / salt mixture, if required. Snow to be cleared within 24 hours following a winter storm event. Ice treatment to be applied within 16 hours of becoming aware of need.
4	Sidewalks in Priceville, Ceylon, Maxwell, Kimberley and Eugenia are not maintained in the winter and considered to be closed between November 1 and April 15.	To be determined through further study.

MMS Class refers to maintenance classification established in *Minimum Maintenance Standards for Municipal Highways* (Ontario Regulation 239/02, as amended).

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As noted in the above table, it is recommended that further study be completed to assess the relative risks of not maintaining Priority 4 sidewalks, with consideration of potential legal liabilities in not meeting MMS requirements and of the need to adequately inform potential users of this infrastructure of winter closure of these sidewalks (e.g. through signage, similar to the signage employed to warn of "no winter maintenance" roads).

3.4 Crossing Guard Guidelines

Ontario Traffic Council (OTC) released the School Crossing Guard Guideline in 2023. The Guideline provides warrants for school crossing guards at different types of school crossing locations, including signalized intersections, all-way stop-controlled intersections, minor street stop-controlled intersections, pedestrian signals, pedestrian crossovers as well as midblock locations or roundabouts.

The OTC guideline is based on establishing an exposure index for controlled crossings, which is based on the conflict potential between vehicles and pedestrians. Since the Municipality does not currently have crossing guards, the exposure index would be based on comparative data collected in other similar municipalities.

For crossings at uncontrolled locations (i.e., crossing of the main road where the minor road is stop-controlled or at mid-block locations without controls) the OTC guideline is based on the completion of a gap analysis.

Both the exposure index methodology and the gap analysis methodology require site-specific counts to establish the conflict potential between vehicles and pedestrians.

Detailed review of crossing guard warrants for school crossing locations is provided in a subsequent section of this report. Detailed review of crossing guard warrants for school crossing locations has been completed as part of this Study. However, due to weather and construction conflicts for part of the crossing guard review in this study, it is recommended that the Municipality investigate the need for crossing guards at any school crossings where such a potential need has been identified. It is recommended that the Municipality reach out to school administrators to identify the locations or need for such review, based on local knowledge and conditions. Even when crossing controls are installed, having a physical crossing guard can ensure that road users are crossing only when it is safe to do so, as well as making sure that vehicles come to a full stop prior to vulnerable road users crossing.

3.5 Traffic Speed Policies

On May 30, 2017, the Safer School Zone Act, also known as Bill 65, was enacted by the Province of Ontario. This legislation grants municipalities the authority to lower speed limits in neighbourhood areas. As it stands, the standard speed limit in Ontario is

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50 km/h in built-up areas and 80 km/h in rural areas, unless otherwise indicated. In addition, the Ontario Highway Traffic Act, specifically Section 128 (2.1), now permits municipalities to establish a by-law that sets the speed limit below 50 km/h on all roads within a specified area.

In recent years, municipalities across Ontario have been taking steps to enhance road safety and reduce the risk of traffic collisions. A number of municipalities in Ontario have lowered operating speeds from 50 km/h to 40 km/h, or lower, in all, or part of the roads in built up areas of their networks. The City of Toronto has implemented a policy that reduces the speed limit on arterial roads to 50 km/h, collector roads to 40 km/h and local roads in some cases to 30 km/hr. The City of Toronto partnered with the Toronto Police Service to launch this speed reduction policy which also consists of increasing targeted enforcement in hot spot areas.

Lowering the speed limit does not improve safety on its own unless it effectively results in lower operating speeds. Lower operating speeds allows drivers to have more time to react to unexpected situations. To successfully reduce operating speeds and increase safety, posted speed limit reductions should also be partnered with increased enforcement, traffic calming measures and road design modifications. As a collective effort, increased enforcement, traffic calming measures and design modifications can help reduce operating speeds and occurrences of unsafe driving. This is particularly important in residential areas and near schools, where children and other vulnerable road users are present. Reduction of posted speed limits often has broad community support, particularly in residential areas where the safety of children and other pedestrians is a concern.

Lower speed limits can discourage through traffic from using local roads as a bypass, making streets more pleasant for residents, while encouraging more active forms of transportation, such as walking and cycling.

3.6 Community Safety Zones

This Study has also considered the general requirements associated with Community Safety Zones. Community Safety Zones (CSZ) were introduced in Ontario in 1998 and are sections of roadway where public safety is of special concern. CSZ may include roadways near schools, daycare centres, playgrounds, parks, hospitals and senior citizen residences and may also apply to collision-prone areas within a community. These zones let motorists know (through signage) that they are within a zone where fines have been increased, through a special designation under the Highway Traffic Act. The signage for CSZ should be in accordance with the Ontario Traffic Manual (Book 5, Regulatory Signs). The knowledge and expertise of local decision-making bodies, such as municipal council, municipal engineering staff, police services board as well as input from local ratepayer associations or community policing committees can be employed in

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the identification of CSZ. Ideally, there should be documented evidence that public safety is of special concern in the area being considered for a CSZ.

The existing CSZ in the Municipality are summarized in Table 6.

Table 6: Summary of Community Safety Zones in the Municipality

Community	Jurisdiction (By-law)	Road Name	From	То
Proton	Southgate	Artemesia-	280 m northeast	West Back Line
Station	(By-law 09-	Southgate	of Murial Street	
	2016)	Townline		
Rocklyn	Grey	7th Line	Sideroad 22B	380 m north of the
	Highlands			intersection of 7th
	(By-law 2020-			Line and Sideroad
	040)			22B
		7th Line	Sideroad 22B	360 m south of
				the intersection of
				7th Line and
				Sideroad 22B
		Sideroad	7th Line	230 m west of the
		22B		intersection of 7th
				Line and Sideroad
				22B
		Sideroad	7th Line	300 m east of the
		22B		intersection of 7th
				Line and Sideroad
				22B
Priceville	Grey County	Grey Road 4	50 m east of	130 m east of
	(By-law		Artemesia-	Rivers Street
	4788-13)		Gleneig Townline	
Ceylon	Grey County	Grey Road 4	100 m east of	178 m wet of
	(By-law		Wilcox Lake	West Back Line
	4788-13)		Road	
Maxwell	Grey County	Grey Road 4	464 m west of	736 m east of
	(By-law		Road 45	Road 45
	4788-13)			
Kimberley	Grey County	Grey Road	100 m south of	360 m north of the
	(By-law	13	the intersection of	intersection of
	4788-13)		Grey Road 30	Grey Road 7

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Community	Jurisdiction (By-law)	Road Name	From	То
Eugenia	Grey County (By-law 4788-13)	Grey Road 13	A point 300 m north of the intersection at St. Arnaud Street	150 m north of the intersection at North Street
Singhampton	Grey County (By-law 4788- 13)	Grey Road 124	Collingwood Road	693 m south of Collingwood Road

It is recommended that traffic monitoring be provided for those areas with existing CSZ in place, to assess their effectiveness. Such monitoring should identify if additional enforcement or traffic calming measures may be required, particularly for those areas where the road conditions may not make it clear to motorists of the need for enhanced safeguards to protect pedestrian safety.

CSZ are intended to be a tool to improving public safety and should be a consideration as a potential mitigation measure, as part of any future study work for those roads that are recommended for ongoing monitoring of speed and collision data. However, it should be noted that studies in some other municipalities (e.g., Toronto, Milton) have shown that CSZ have not been that effective in encouraging compliance with posted speed limits, particularly if not enforced. York Region reviews also concluded that exhaustive use of CSZ is not a practical method of solving unwanted driver behavior, as drivers may become unreceptive and non-compliant without strict and frequent enforcement. CSZ must be recognizable to the driver as a special situation that warrants an increased awareness of community activity to the road right-of-way; thus, the need for an increased awareness for traffic safety. Otherwise, motorists are continuing to travel at speeds which they deem comfortable, based on prevailing roadway conditions and roadside environment, regardless of posted speed limits and/or CSZ designations.

Consistent with the above observations, the following typical guidelines may be considered for establishing a CSZ:

- CSZ should only be implemented for community-based facilities such as schools, community centres, parks, retirement areas, or roadway sections with continual high collision rates.
- Each by-law establishing a Community Safety Zone should indicate that the designation is in effect for 24 hours a day to assist the Police with enforcement.
- Community Safety Zones must always be used in conjunction with other traffic safety and police enforcement measures.

As noted previously the implementation of lower posted speeds and/or CSZ designations may not have significant impacts on reducing speeds, particularly if these are not accompanied by increased enforcement. Therefore, the implementation of CSZ

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designations would not typically apply to rural roads, since the primary objective of raising the awareness of motorists to an area of increased safety concerns/conflict is not achieved, nor necessarily discernable to the travelling public. In urban and semi-urban areas, the consideration of CSZ designations should be based on a review of the potential safety issues on a case-by-case basis.

It should also be noted that Bill 65 was enacted in 2017 to allow municipalities to implement automated speed enforcement (ASE, photo radar) in designated Community Safety Zones. This may be a future consideration in areas where speed enforcement is determined to be the only means of effectively addressing speeding issues in these speed-sensitive areas. The Association of Municipalities (AMO), through their Local Authority Services (LAS), is currently coordinating efforts to implement the logistical and administrative requirements to implement ASE through a joint municipal service board. It is planned that the LAS ASE Service will be available to municipalities in 2024. It is recommended that Grey Highlands investigate implementing ASE on applicable roads within the Municipality's road network.

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4.0 Identification of Pedestrian Safety Issues

This Study reviewed a number of issues / concerns that have previously been identified by area residents, including those detailed in the following location-specific reports:

- July 26, 2022, Police Services Board (PSB) Meeting Minutes, including service requested for increased safety measures in Eugenia.
- Report Submitted by the Kimberley Safety Group.
- Downtown Markdale Community Vision Report.
- Resident Letter Regarding Traffic Calming in Ceylon.
- Letter from Principal of Beavercrest School regarding safety of crossings in front of the school.
- Minutes and reports in various meetings of the Road Safety Community Partnership Committee (as previously presented in this report).

The issues identified in the above noted reports are reviewed in the following sections.

4.1 Meeting Minutes of the Police Services Board (July 26, 2022) and Requests for Increased Safety Measures In Eugenia

The Police Services Board (PSB) addressed multiple items related to pedestrian safety in the Municipality during their July 26, 2022 meeting. Some of the road safety items addressed by the PSB during this meeting were:

- Speeding issues in Kimberley and ways to mitigate these issues.
- Problems with the main roads in Eugenia (Pellisier, Canrobert and Inkerman) such as, narrow roads, no shoulders, no sidewalks, inadequate lighting and lack of speed control.
- Collision that took place in Eugenia (pedestrian fatality).

A significant number of service requests were made for increased safety measures in Eugenia, including the following suggestions for improvements:

- Reduce the posted speeds on Eugenia local roads to 40 km/h or 30 km/h, to be consistent with the 40 km/h currently on Grey Road 13.
- Implement additional police enforcement, particularly around drinking and driving
- Implement 4-way stop signs at Inkerman/Canrobert, Inkerman / Napoleon and at GR13/Pellisier Street. However, it was also noted that it has been observed that vehicles may not currently be stopping at existing stop signs.
- Improved streetlighting (i.e., additional streetlights and removal of foliage from blocking the minimal streetlights that do exist).
- Implement sidewalks, particularly on Inkerman Street and Canrobert Street
- Implement traffic calming (speed humps).
- Implement photo radar.

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- · Additional pedestrian warning signage.
- ATVs and speeding on gravel roads.

The types of concerns and suggested improvements are informative of the typical safety issues that are under review in this Study and that should be reviewed in future studies related to pedestrian safety.

4.2 Report from the Kimberley Safety Group (KSG)

In June 2021 the Kimberley Safety Group (KSG) completed a report titled "Kimberley: Envisioning a Safe, Healthy and Prosperous Future". The KSG report referenced literature pertaining to road safety in towns and villages in Europe, the UK and North America. The KSG report speaks to the right to safe mobility and argues that a holistic, integrated approach is required to develop a strategic plan that embraces safety for all road users. The comprehensive improvement plan proposed in the KSG report is based on literature review and is centered around creating safe public spaces and safe mobility for pedestrians of all ages and abilities. The evidence informed strategies proposed in the KSG study include vehicular speed reduction, improved safe space for hikers, walkers and cyclists as well as improved safe accessible walking within the Village. The report by KSG includes figures for the proposed treatments that residents would like to see implemented. The pedestrian safety treatments proposed by KSG are crosswalks, gravel paths, as well as crosswalks with signage and pavement treatment.

The KSG report provides important local input on the pedestrian safety issues in Kimberley and therefore provides valuable input into the analysis and identification of potential pedestrian safety improvements in this area, as considered in this current Study.

4.3 Downtown Markdale Community Vision Report

A community focused project was completed for the Municipality in July 2021 for the Markdale area. The Markdale Visioning Study, completed by the Planning Partnership, focused on visioning and concept development for two municipally owned properties in the downtown core (i.e., located in the northeast and northwest quadrant of the Toronto Street and Main Street intersection). As part of this visioning project, the Study reviewed the surrounding points of interest and zoning, as well as the destinations within a 5- and 10-minute walk. In section 3 of the report, a figure was attached to show the existing sidewalk and trail network in the downtown core (see Figure 9 below), noting that there are gaps and inconsistencies in the sidewalk network.

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Figure 9: Markdale Downtown Existing Trail and Sidewalk Network

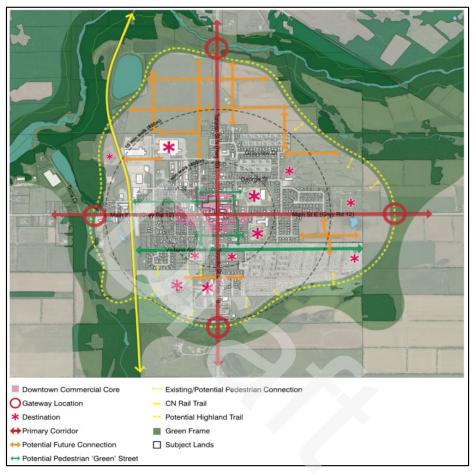


Source: Markdale Visioning Study, July 2021.

In addition to the figure outlining the existing sidewalk and trails network in Markdale, the Study identified candidates to be "Green Streets". Green Streets, as identified in the report are "enhanced pedestrian streets that connect neighbourhoods to open spaces and natural areas". Implementing pedestrian friendly streets, that use best practices for traffic calming and pedestrian safety such as buildings being located close to the streets, green space and/or buffers, etc., will help make the downtown core pedestrian oriented. Figure 10 below illustrates the roads that are identified to be candidates to be "Green Streets".

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Figure 10: Markdale Visioning Study Framework Plan



Source: Markdale Visioning Study, July 2021.

Considering their role in providing active transportation connectivity within Markdale, it is particularly important that safe pedestrian facilities be provided along those streets.

4.4 Resident Concerns Regarding Traffic Calming Required in Ceylon

Resident concerns regarding pedestrian safety in the hamlet of Ceylon have been expressed to the Municipality and Grey County. In July 2020, a letter was sent to members of the Municipality and the County with a package of email correspondence regarding resident concerns in Ceylon. The safety concerns in Ceylon include, but are not limited to, increase in traffic along Highway 4, speed of heavy truck traffic, posted speed limit vs operating speed, sidewalk condition, trail crossing safety and safety

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issues for children/school bus loading. Between August 2017 and July 2020, residents in the hamlet of Ceylon were advocating for traffic calming and safety enhancement initiatives to be put in place. During the email correspondence regarding the complaints, many possible "solutions" were brought to the table, including the following suggestions:

- Creating a Community Safety Zone (note: this was endorsed by Council on December 20, 2018).
- Narrowing lanes and repainting lines.
- · Marking the posted speed on the road as users enter the hamlet.
- Install multi-use trail crossing signage.
- Install school bus warning signs.

To address the traffic calming and safety issues in Ceylon, a Community Safety Zone has been implemented throughout the hamlet, speed limits were reduced from 60 km/h to 50 km/h and white edge lines were painted on the road. It is recommended that monitoring of the concerns noted be completed to determine the effectiveness of these countermeasures in addressing the concerns noted.

4.5 Letter of Concern Regarding Safety of Crossings in Front of Beavercrest School

The principal of Beavercrest School submitted a letter (September 13, 2023) to council generally expressing the following concerns:

- Need for a pedestrian crossing of Main Street East (County Road 12) at Edith Street
 to accommodate student crossings from that area and encourage drivers to slow
 down in the vicinity of the school.
- Consider a crossing guard on Main Street East.

In response to the direction from the Municipality this Pedestrian Safety Study has included a review of crossing guard requirements in school zones, as presented in a subsequent section of this report.

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5.0 Collision Considerations

5.1 Vision Zero

Vision Zero was implemented in Sweden in 1997 with the goal of eliminating deaths and serious injuries from collisions involving road users. Vision Zero has become a widely adopted policy/strategic goal for many municipalities in Ontario and across Canada. Vision Zero has been adopted to work towards eliminating severe collisions within a road network. Some of the Vision Zero Principles include the following:

- Life and health cannot be exchanged for other societal benefits.
- All serious injuries and fatalities are preventable.
- Road users are vulnerable and should not be seriously injured or killed as a result of a collision.
- Humans are prone to error, but collisions resulting in severe injuries or fatalities should not be a result of such errors.
- System-wide changes are the most effective way to implement this strategic goal.

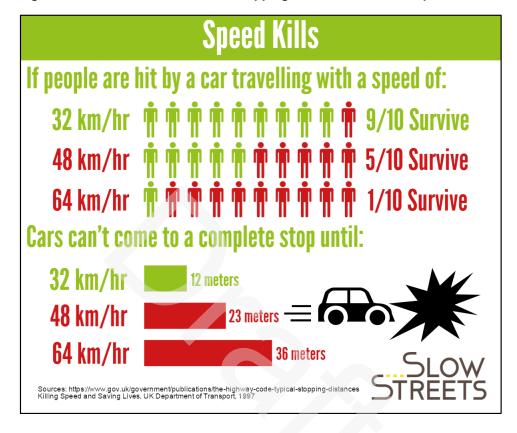
The Safe System approach, outlined previously, is another big part of Vision Zero and achieving the goals of this strategic vision. To successfully implement Vision Zero, it starts with the belief that everyone has the right to freely and safely move in their community. Vision Zero countermeasures/implementation are categorized based on what are called the 5 E's. The 5 E's for Vision Zero are Engineering, Education, Enforcement, Engagement and Evaluation.

Although Vision Zero is not an entirely new concept, it requires municipalities to shift their approach to decision making, actions, design and mobility.

Vehicle speeds are one of most important parameters that influence the potential for collisions to result in serious injuries or fatalities. As noted in Figure 11, the potential survival rate of pedestrians hit by vehicles travelling at 64 km/h is only 10%, while for those hit by vehicles travelling at 32 km/h the survival rate improves significantly to 90%. This highlights the need to calm traffic speeds, especially in areas of increased collision potential (e.g., road crossings or where inadequate sidewalks are provided to facilitate movement of pedestrians along roadways). As also shown in the Figure, the vehicular stopping distance is significantly impacted by speeds, affecting the sight distance requirements (i.e., perception, reaction and braking distances), which are also determined by the road design parameters (e.g., horizontal and vertical alignments, streetlighting, traffic controls, intersection radii and traffic calming measures).

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Figure 11: Collision Outcomes and Stopping Distance at Various Speeds



It is recommended that the Municipality consider developing policies and standards that support the goal of moving towards Vision Zero.

5.2 Collision Locations

Limited collision data was made available in this current pedestrian Study. However, collision information was provided at two locations where pedestrians were involved in collisions. The subject collision locations were on Inkerman Street, in Eugenia and at the intersection of Highway 10 (Toronto Street) / Grey Road 12 (Main Street) in Markdale, as described further in this section.

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Inkerman Street and Ragian Street

A collision occurred on Inkerman Street near the Raglan Street intersection in Eugenia on July 19, 2022. The collision involved four pedestrians, resulting in injuries for three pedestrians and a fatality for one pedestrian. As reported by Collingwood Today, the emergency personnel responded to the reported collision at approximately 10:06 p.m., but the exact time of the incident was not clarified.

Inkerman Street is a paved local road running north-south between Pellisier Street and 8th Concession Road. There are no pavement markings along Inkerman Street and limited streetlighting available (i.e., 7 streetlights along the 1.2km segment). In addition, Inkerman Street is free flowing (i.e., no stop control) at Canrobert Street Raglan Street, Napoleon Street and St. Arnaud Street. The length of Inkerman Street (1.2 km) that is uninterrupted by traffic controls is a concern for road safety and aggressive driving, as drivers can gain considerable amounts of speed before they may be required to slow down/come to a stop. Figure 12 and Figure 13, below, show the Inkerman Street and Raglan Street Intersection (collision location) and the traffic control methods (Raglan Street is stop controlled, while Inkerman Street is free flow).

Figure 12: Inkerman Street at Raglan Street (Along Inkerman, Looking North)



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Due to the severity of the recent collision, and the concerns expressed in the public survey undertaken as part of this Study, this location has been selected to be included in the detailed review. Additionally, this Study recommends that this location be selected as one of the candidates for speed monitoring. Further detailed review of this location has been provided in a subsequent section of this Study.

Highway 10 (Toronto Street) and Grey Road 12 (Main Street) Intersection

Local emergency services responded to a collision at 2:33 p.m., that occurred at the intersection of Highway 10 (Toronto Street) and Grey Road 12 (Main Street) in Markdale on November 22, 2019. The collision involved one pedestrian and one pickup truck. The pedestrian was taken to hospital with life-threatening injuries after being struck by the pickup truck that was attempting to make a left turn onto the southbound lane of Highway 10 (Toronto Street) from Grey Road 12 (Main Street).

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The intersection of Highway 10 and Grey Road 12 is the main intersection located in the centre of Markdale. The intersection is a meeting point for the different routes into the community (i.e., traffic entering/passing through from the North, South, East and West) and is controlled by traffic signals for all directions. Figure 14 illustrates the existing conditions of this intersection, while Figure 15 shows the crosswalk that the collision occurred in.

Figure 14: Toronto Street and Main Street Intersection



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Figure 15: Crosswalk Parallel to Main Street (Collision Location)



Local industrial activity in Markdale results in significant turning movements by trucks at the Toronto Street / Main Street intersection. To facilitate these movements the stop blocks are set well back from the intersection. The location of the stop blocks may result in increased speed for turning vehicles, as well as compromised sight distances for such movements.

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6.0 Resident Feedback and Selection of Locations for Further Review

6.1 Origin/Destination Points of Interest

This Study completed a desktop review of the Municipal Road network, active transportation facilities and major trip generators including schools, trailheads, and commercial areas. The primary trip generators and cycle routes are shown in the figures in Appendix B, along with posted speeds on the road networks in the identified areas. This information has been assessed to confirm the conflict potential in the Study area, to identify areas for more detailed review in this Study.

6.2 Online Active Transportation Safety Survey

In addition to network specific information, this Study includes a public resident feedback survey that asked residents for their input on what routes they commonly use, frequent method of active transportation, current infrastructure and possible infrastructure improvements.

To identify the active transportation demand and the gaps of active transportation infrastructure, an online survey consisting of 21 questions was developed. The survey was designed to collect key information regarding active transportation activities for residents in the Municipality of Grey Highlands including:

- · Community that the responding residents reside in.
- Modes, frequency and purpose of active transportation activities.
- Time period and duration of active transportation activities.
- Frequently utilized routes of active transportation activities.
- Available and missing active transportation infrastructure along the frequently utilized routes.
- Traffic conditions along the frequently utilized routes for active transportation activities.
- Other concerns regarding traffic operation and on-street parking.

6.2.1 Community Profile

The online survey was published on the Municipality's website, as well as advertised on the Municipality's social media platforms. A total of 199 valid responses were received from the community. The responses are summarized in Table 7 and Table 8, categorized for each community.

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Table 7: Active Transportation Activities by Communities

Community	Total Responses	Walk	Cycle	Walk and cycle	l do not walk or cycle
Markdale	52	33	0	14	5
Eugenia	43	21	0	19	3
Flesherton	40	19	0	20	1
Kimberley	22	9	0	12	1
Priceville	9	5	0	2	2
Feversham	4	1	0	2	1
Ceylon	2	0	0	2	0
Maxwell	2	0	1	0	1
Singhampton	2	1	0	1	0
Badjeros	2	0	0	2	0
Rocklyn	2	1	0	0	1
Proton Station	0	0	0	0	0
Other	19	12	0	4	3
Total	199	102	1	78	18

Table 8: Active Transportation Frequency by Communities

Community	Total Responses	Everyday	4-6 days a week	1-3 days a week	Occasionally (less than 1 day a week)
Markdale	52	24	13	7	2
Eugenia	43	17	9	9	5
Flesherton	40	20	12	4	3
Kimberley	22	8	7	5	1
Priceville	9	2	5	0	0
Feversham	4	3	0	0	0
Ceylon	2	2	0	0	0
Maxwell	2	0	0	0	0
Singhampton	2	2	0	0	0
Badjeros	2	0	1	0	0
Rocklyn	2	0	0	0	1
Proton Station	0	0	0	0	0
Other	19	0	0	0	0
Total	199	78	47	25	12

It should be noted that about 65% of the survey responses indicate that they regularly (more than three days per week) walk or cycle within the communities, suggesting that there is a demand to accommodate active transportation needs.

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6.2.2 Markdale

The survey responses from Markdale residents show that evening (after 6 p.m.) is the most popular time for active transportation activities. About 23% of the responses indicate that they would spend 15 to 30 minutes walking or cycling, while 47% would spend 30 minutes to one hour walking or cycling.

The most utilized roads in Markdale mentioned in the responses are shown in Table 9.

Table 9: Highly Utilized Streets in Markdale

Road Name	Nur	Number of Responses		
Roau Name	Walk	Cycle	Total	
Main Street (Grey Road 12)	20	4	24	
Toronto Street (Highway 10)	15	2	17	
George Street	2	0	2	
Grayview Drive	3	0	3	
Edith Avenue	3	0	3	
Queen Street	3	0	3	

The majority of the concerns noted by Markdale residents are the condition of the existing infrastructure, e.g., missing signage, cracked pavement (18 responses) and lack of active transportation infrastructure (six responses). Other concerns include the operating vehicle speed on the road and safety for school children crossing the highway.

Based on the survey data, the most utilized roads for active transportation activities in Markdale are Main Street and Toronto Street, and the major concerns are conditions of existing infrastructure and lack of active transportation infrastructure.

Main Street

Main Street (Grey Road 12) is an east-west county road consisting of a two-lane cross section with a posted speed limit of 50 km/h. Sidewalks are provided on both sides of the road between Edith Avenue and Wellington Avenue with a physical buffer of approximately 2.0 m on each side between the sidewalk and the travel lane. However, there is no cycling facilities or pavement markings indicating that this is a cycling route.

Toronto Street

Toronto Street (Highway 10) is a is a north-south provincial highway with a posted speed limit of 50 km/h crossing the community. Toronto Street (Highway 10) from the southern limit of the community to the northern limit of the community is considered to be "Connecting Link". An on-street parking lane is provided on the west side of the road for about 300 m north of Cavan Street West, while on-street parking lanes are provided on both sides of the road between Cavan Street West and Mark Street. Sidewalks are

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provided on both sides of the road with approximately 0.5 m of buffer on the west side and no buffer on the east side. There are no cycling facilities or pavement markings to indicate that this is a cycling route.

As one of the largest communities in the Municipality of Grey Highlands, it is anticipated that the number of active transportation trips would be high based on the land use and the results of the online survey. In addition, considering the proximity of the Beavercrest Community School, this Study has identified Main Street and Toronto Street as potential location for ongoing speed monitoring and future detailed review of pedestrian and cyclist safety along these corridors.

6.2.3 Eugenia

The survey responses from Eugenia residents show that afternoon (3 p.m. - 6 p.m.) is the most popular time for active transportation activities, although activity in the morning (5 a.m. - 11 a.m.) is also significant in Eugenia. About 25% of the responses indicate that they would spend 15 to 30 minutes walking or cycling, while 51% would spend 30 minutes to one hour, and 20% would spend more than one hour.

The most utilized roads in Eugenia mentioned in the responses are shown in Table 10.

Table 10: Highly Utilized Streets in Eugenia

Road Name	Number of Responses		
Roau Name	Walk	Cycle	Total
Inkerman Street	22	7	29
Canrobert Street	21	5	26
Pellisier Street	13	3	16
Napoleon Street	10	3	13
Beaver Valley Road (Grey Road 13)	9	3	12
Evans Street	4	3	7
Kinburn Street	2	0	2

The majority of the concerns noted by Eugenia residents are speeding (36 responses) and unsafe road crossings (11 responses). Other concerns include heavy trucks and traffic congestion.

Based on the survey data, the most utilized roads for active transportation activities in Eugenia are Inkerman Street and Canrobert Street. In addition, the utilization of Napoleon Street, Pellisier Street and Grey Road 13 is also high. The Municipality also provided detailed information of 18 service requests received from Eugenia residents. The major concerns are speeding for both passenger vehicles and ATVs.

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As discussed in Section 5.2, Inkerman Street will be included in the detailed analysis in this Study, due to the recent fatal collision.

Canrobert Street

Canrobert Street is an east-west local street consisting of a two-lane cross section with a posted speed limit of 50 km/h. It provides connectivity through the community by connecting to Beaver Valley Road, Inkerman Street, the Lake Eugenia Public Beach, as well as the South Shores Road. It is anticipated that the traffic volume is high compared with other roads in Eugenia. Minimal streetlighting is provided along Canrobert Street (i.e., 10 streetlights on a 1.2km stretch of road). Additionally, there is no sidewalk or paved shoulder on either side of the road.

Pellisier Street

Pellisier Street is an east-west local street consisting of a two-lane cross section with a posted speed limit of 50 km/h. It connects local businesses including two farmers' shops, a gift shop, a restaurant, and an inn. It is anticipated that the traffic volume is moderate to high compared with other roads in Eugenia. There is a deteriorated, overgrown asphalt path along this road, that was recommended for removal in the Municipality's 2018 Road Needs Study, considering that roadside shoulders were available to accommodate pedestrian movements in this area.

Napoleon Street

Napoleon Street is an east-west local street with a posted speed limit of 50 km/h consisting of a two-lane cross section. Napoleon Street does not connect to Beaver Valley Road (Grey Road 13) and therefore is used primarily for local access. Due to being used as a local access road, it is anticipated that the traffic is low on Napoleon Street.

Beaver Valley Road (Grey Road 13)

Beaver Valley Road is a north-south county road consisting of a two-lane cross section with a posted speed limit of 40 km/h through the community, with signage for a Community Safety Zone. The signed Community Safety Zone is between approximately 120 m north of St. Arnaud Street, and Green Acres Street. There are unpaved shoulders north of Purdy Street and paved shoulders south of Purdy Street. It is anticipated that the through traffic volume on Beaver Valley Road is high through the community.

Based on the connectivity and utilization, it is our recommendation to include Inkerman Street, Canrobert Street and Pellisier Street as examples of local streets within semi-urban areas and as potential locations for speed monitoring. It is our recommendation to

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included Beaver Valley Road and the local streets within Eugenia as potential locations for speed monitoring.

6.2.4 Flesherton

The survey responses from Flesherton residents show that morning (5 a.m. – 11 a.m.) is the most popular time for active transportation activities. About 43% of the responses indicate that they would spend 30 minutes to one hour walking or cycling.

The most utilized roads in Flesherton mentioned in the responses are shown in Table 11.

Table 11: Highly Utilized Streets in Flesherton

Road Name	Number of Responses			
Road Name	Walk	Cycle	Total	
Collingwood Street / Durham Street (Grey Road 4)	17	2	19	
Toronto Road (Highway 10)	15	2	17	
Alice Street	5	1	6	
Campbell Street	4	0	4	

The majority of the concerns noted by Flesherton residents are speeding (26 responses) too much traffic (14 responses), heavy trucks (14 responses) and unsafe road crossings (13 responses). Other concerns include drivers ignoring stop signs, as well as insufficient clearance distance between traffic and pedestrians/cyclists.

Based on the survey data, the most utilized roads for active transportation activities in Flesherton are Collingwood Street / Durham Street (Grey Road 4) and Toronto Road (Highway 10). In addition, some residents responded that they would use Alice Street and Campbell Street for active transportation activities. The major concerns are speeding, traffic congestion, heavy trucks, and unsafe road crossings.

As a significant community in the Municipality of Grey Highlands, it is anticipated that the number of active transportation trips would be high based on the land use and the results of the online survey. Based on the connectivity and utilization, it is our recommendation to include the arterial roads through Flesherton (i.e., Grey Road 4 and Highway 10) as examples of arterial connecting links through settlement areas, for future detailed review and as potential locations for speed monitoring.

6.2.5 Kimberley

The survey responses from Kimberley residents show that mid-day (11 a.m. - 3 p.m.) is the most popular time for active transportation activities. About 39% of the responses

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indicate that residents would spend 30 minutes to one hour walking or cycling while about 32% would spend more than one hour.

The most utilized roads in Kimberley mentioned in the responses are shown in Table 12.

Table 12: Highly Utilized Streets in Kimberley

Street	Number of Responses			
Street	Walk	Cycle	Total	
Beaver Valley Road (Grey Road 13)	17	6	23	
Side Road 7A	8	1	9	
Grey Road 7	6	2	8	
Lower Valley Road	3	4	7	

The majority of the concerns noted by Kimberley residents are speeding (17 responses), heavy trucks (11 responses) and too much traffic (eight responses). Other concerns include unsafe road crossings, insufficient clearance distance between traffic and pedestrians/cyclists, and illegal on-street parking.

Based on the survey data, the most utilized roads for active transportation activities in Kimberley are Beaver Valley Road (Grey Road 13), Sideroad 7A and Grey Road 7. The major concerns expressed are speeding and too much traffic.

Beaver Valley Road (Grey Road 13)

Beaver Valley Road is a north-south county road consisting of a two-lane cross section with a posted speed limit of 40 km/h through the community, with signage for Community Safety Zone. The signed Community Safety Zone is between approximately 380 m north of Centre Road and approximately 350 m south of Creamery Road. Sidewalks are provided on both sides of the road between approximately 250 m north of Centre Road and approximately 150 m south of Creamery Road. It should also be noted that this is a signed bike route. Speed radar signs are installed for both directions, after the 40 km/h speed signs.

Sideroad 7A

Sideroad 7A is an east-west local road consisting of a two-lane cross section with a posted speed limit of 50 km/h. There is no shoulder, sidewalk or streetlighting present. There is a significant horizontal curvature at approximately 1.7 km west of Grey Road 7.

Grey Road 7

Grey Road 7 is a north-south county road consisting of a two-lane cross section with a posted speed limit of 80 km/h and unpaved shoulders on both sides of the road.

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Based on the connectivity and utilization, it is our recommendation to include Beaver Valley Road in the detailed safety review in this Study and in the list for potential speed monitoring locations. It is our recommendation to included Grey Road 7 and Sideroad 7A as potential locations for speed monitoring.

6.2.6 Other Communities

In addition to the communities mentioned above, Table 13 shows the number of responses from residents in other communities.

Table 13: Responses from other Communities

Community	Responses
Priceville	9
Feversham	4
Ceylon	2
Maxwell	2
Singhampton	2
Badjeros	2
Rocklyn	2
Proton Station	0
Outside of the listed communities	19

For smaller communities, the most used routes are usually the county road or highway connector across the communities. It is noticed that the Community Safety Zones on Grey Road 4 in Priceville and Ceylon have a posted speed limit of 50 km/h. It is our recommendation to include Ceylon in the safety study due to the CP Rail Trail Crossing and include both locations for speed monitoring.

It is noted that the on-line survey did not identify pedestrian issues related to rural road within the municipality (i.e., outside of build-up areas). Typically, rural areas would be expected to experience very little pedestrian traffic, with the exception of areas that may be associated with trail heads. However, rural roads in the municipality do experience cyclist traffic and therefore it is recommended that the Municipality consider such demands in future safety studies to consider overall active transportation needs.

6.3 Schools

School catchment areas represent one of the areas in the Municipality where pedestrian safety is of particular importance. Details of the school operations are provided below and detailed review of crossing guard requirements are provided in a subsequent section of this report.

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6.3.1 Grey Highlands Secondary School (Highway 10)

Grey Highlands Secondary School is located along Highway 10 on the edge of the community of Flesherton. The high school is located approximately 720 m southeast of the Highway 10 and Collingwood Street/Durham Street intersection. According to the school website, there are approximately 950 students enrolled at this school. The posted speed limit on Highway 10 changes from 60 km/h to 50 km/h at the south access of the school parking lot.

The school has a dedicated area for pick-up and drop-off activities and there are existing sidewalks along Highway 10 on both sides of the road. It is anticipated that pedestrians would be able to travel to the residential areas and commercial areas of Flesherton via these sidewalks.

The arena and public library is located on Highlands Drive, which is located on the north side of Highway 10, about 180 metres from the high school. Some student travel is therefore generated between these facilities and the school.

6.3.2 Macphail Memorial Elementary School

Macphail Memorial Elementary School is located at the west end of Campbell Street, approximately 300 m west of the Campbell Street and Highway 10 intersection. According to the school website, there are about 500 students enrolled at this school.

Considering the vulnerable road users of the elementary school, it is our recommendation to include Macphail Memorial Elementary School for more detailed review of pedestrian safety and of pedestrian infrastructure in the school catchment area.

6.3.3 Beavercrest Community School (Grey Road 12)

Beavercrest Community School is located in Markdale, on the south side of Grey Road 12 approximately 270 m east of the Grey Road 12 and Highway 10 (Toronto Street North/South) intersection in the Community. The posted speed limit on Grey Road 12 is 50 km/h, with signage and flashing lights reducing the speed to 40 km/h during school operations. There is currently an existing pedestrian crossover at the west end of the school, also providing access to King Edward Park and the Grey Highlands Public Library on the north side of Grey Road 12.

As noted previously, concerns have been expressed regarding the safety for students crossing Grey Road 12 in the area of the school.

The existing Beavercrest school is scheduled to be relocated to the east on its existing site in 2024, with the primary access to the school being relocated to the subdivision road that is being constructed across the back of the site. This relocation is not expected

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to have significant impacts on the student crossing volumes on Grey Road 12, however may reduce vehicular volumes along this road.

Markdale is one of the larger and more urbanized communities in the Municipality of Grey Highlands. Considering the potential high traffic volume, as well as the nature of Beavercrest Community School as an elementary school, it is our recommendation that this area be prioritized for pedestrian and vehicular traffic counts in the future, as part of ongoing monitoring of traffic operations.

6.3.4 Osprey Central Elementary School (Grey Road 4)

Osprey Central Elementary School is located in Maxwell, on the north side of Grey Road 4, approximately 520 metres to the east of the intersection of Grey Road 4 / Grey Road 2. Considering the location of this school, most students are bussed, however a small amount of residential development within the hamlet may generate some student pedestrian travel, along the shoulders of Grey Road 2 or Grey Road 4. As previously noted the Road Safety Community Partnership Committee is currently considering the following request and also making the following recommendation:

- Extension of the 50 km/h speed limit on Grey Road 2 to the south to beyond the Maxwell Garden Center.
- Recommending that the existing school zone sign with flashing lights be relocated
 further to the south that it meets the spacing requirements to the school entrace
 under the Highway Traffic Act, RSO 1990, S H.8, and that the school zone ahead
 signage be placed in all directions approaching Maxwell (i.e., on Grey Road 2, Grey
 Road 4 and Road 45).

Partially paved shoulders (approximately 0.6 m width) exist on each side of Grey Road 2 and fully paved shoulders (approximately 3.3 m width) exist on each side of Grey Road 4 in the study area. The shoulders on Grey Road 4 are used by parked cars as well as to facilitate students walking to/from school.

6.3.5 Hundred Acre Wood Forest Preschool / Blue Mountain Wild School

Hundred Acre Wood Forest Preschool and Blue Mountain Wild School share the same address at 316362 Third Line. The school provides outdoor programs for children from toddlers to Grade 8. The school is located on Third Line C, approximately 170 m south of the Sideroad 22 C intersection. The driveway connecting the Third Line C access and the parking lot is approximately 100 m long. The speed limit is assumed to be 50 km/h (unposted) on Third Line C and the road has a gravel surface. The Siegerman Side Trail Loop (part of Bruce Trail) is located at the Third Line C and Sideroad 22 C intersection. There is no other destination close to the school area.

The traffic count provided by the Town shows that the annual average daily traffic on Sideroad 22 C between Third Line C and Grey Road 13 is 122 vehicles per day (vpd).

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Considering the location of the school and the low traffic volume, and that no particular pedestrian safety issues were identified in this Study, no further review of pedestrian safety is recommended at this time for this school.

6.4 Parks and Conservation Areas

The locations of trailheads to parks and conservation areas have been reviewed to determine if pedestrian safety issues should be addressed in this current Study. Based on the review, it is our recommendation to not include parks or conservation areas with dedicated parking facilities in this current Study. However, it is our recommendation that the Municipality monitor the parking condition at the parks regularly, and conduct additional studies, if concerns are reported or identified at specific locations. The locations identified for future monitoring are identified in the following sections.

6.4.1 Eugenia Falls Conservation Area

Eugenia Falls Conservation Area is one of the most popular conservation and trail destinations in Grey Highlands. The trailhead is located at the west end of Pellisier Street and provides parking for trail users.

The parking lot utilization is unknown during the peak season and there might be overflow parking on adjacent streets. However, considering the location of the trailhead, low to no through traffic is anticipated. It is recommended that the Municipality monitor traffic operations in this area to confirm that safe routes for pedestrians are provided to access the trailhead.

6.4.2 Hoggs Falls

Hoggs Fall is located northeast of Flesherton on Lower Valley Road. There is a parking lot at the trailhead with a capacity of about 20 cars. The parking lot utilization is unknown during the peak season. It is anticipated that minimum crossing activities would occur at the trailhead. It is recommended that the Municipality monitor traffic operations in this area to confirm that safe routes for pedestrians are provided to access the trailhead.

6.4.3 Webwood Falls Nature Reserve

Webwood Falls Nature Reserve is located on Sideroad 25, about 1,400 m east of Grey Road 7. There is no dedicated parking lot shown on the map. It is recommended that the Municipality monitor traffic operations in this area in the future to confirm that safe routes for pedestrians are provided to access the trailhead.

6.5 Recommended Locations for Safety Review

Based on the analysis, the recommended locations for more detailed safety review are summarized in Table 14 below.

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Pedestrian Safety Study October 2023 (Revised December 2023)

Table 14: Locations for Safety Review or Future Monitoring

Community	Point of Interest	Road	Comment				
Markdale	Commercial Area	Main Street and Toronto	Major destinations, high demand of active				
		Street	transportation.				
			High utilization reported.				
			Safety concerns identified at signalized intersection.				
	Local Roads	Various Local Roads	Sidewalks are provided throughout the community,				
			however sidewalk gaps are present in the network.				
			Safety concerns reported due to operating speeds in				
			areas where school kids are crossing.				
	CP Rail Trail	Main Street West and	CP Rail Trail Crossing.				
		Isla Street	Lack of crossing treatment.				
	Beavercrest	Main Street East	Major destination, vulnerable road users.				
	Community School		High demand of crossing activities.				
Eugenia	Local connector	Inkerman Street	Collision history.				
			High utilization reported.				
			Safety concerns reported.				
	Local connector	Canrobert Street and	Major destinations, high demand of active				
		Pellisier Street	transportation.				
			High utilization reported.				
			Safety concerns reported.				
Flesherton	Macphail Memorial	Campbell Street, Alice	Major destination, vulnerable road users				
	Elementary School	Street and Hill Street	High utilization reported.				
			Safety concerns reported.				
Kimberley	County Road	Beaver Valley Road	High utilization reported.				
-	Connector	(Grey Road 13)	Limited options for active transportation route.				
			Safety concerns reported (speeding).				

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Community	Point of Interest	Road	Comment		
			Existing community safety zone.		
Ceylon	County Road	Grey Road 4	CP Rail Trail Crossing.		
	Connector		Limited options for active transportation route.		
			Community safety zone with 50 km/h posted speed limit.		
Priceville	County Road	Grey Road 4	Limited options for active transportation route.		
	Connector		Community safety zone with 50 km/h posted speed limit.		
N/A	Eugenia Falls	Pellisier Street	Some parking for trailhead.		
	Conservation Area		Recommend that traffic operations be monitored in the		
			future.		
N/A	Hoggs Falls	Lower Valley Road	Some parking for trailhead.		
			Recommend that traffic operations be monitored in the		
			future.		
N/A	Webwood Falls	Sideroad 25	No parking lot for the trail.		
	Nature Reserve		 Recommend that traffic operations be monitored in the 		
1			future.		

6.6 Location for Speed Monitoring

In addition to the safety review, the historical speed and volume data has also been reviewed to identify additional locations for potential speed monitoring programs by the Municipality with speed radar signs. Locations that have AADTs above 500 vehicles per day and/or 85th percentile operating speeds over 90km/h are included as key locations for speed monitoring. In addition, speed monitoring should be considered in locations where residents have submitted speed concerns and in rural areas where trail access is an issue.

The recommended potential locations for speed monitoring are shown in Table 15.

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Pedestrian Safety Study October 2023 (Revised December 2023)

Table 15: Locations for Speed Monitoring

Road (community)	From	То	AADT	85th Percentile Speed (km/h)	Note	
Inkerman Street (Eugenia)	Pellisier Street	8th Concession	-	-	Collision history.High utilization reported.High number of speeding complaints.	
Napoleon Street (Eugenia)	West end	Beau Lane	-	-	 High utilization reported. High number of speeding complaints. 	
Pellisier Street (Eugenia)	Beaver Valley Road	East end	-	-		
Canrobert Street (Eugenia)	Beaver Valley Road	South Shore Road	-	-		
Campbell Street (Flesherton)	West end	Toronto Street	-	-	Elementary school. High utilization reported.	
Alice Street (Flesherton)	Durham Street	Campbell Street	-	-		
Sideroad 25	4th Line	500 m east of Webwood Falls	-	-	Trailhead without a parking lot requires users to park on the side of the road where visibility could be low and/or operating speeds could be high.	
Euphrasia-Holland Townline	East Back Line	Sideroad 13A	490	101.3	Complaints regarding high operating speeds along the	
West Back Line	Old Highway 4	Road 140	779	100.9	Townline have been raised.	
12th Concession	Road 41B	Road 45	563	96.9		

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Road (community)	From	То	AADT	85th Percentile Speed (km/h)	Note
East Back Line	Centre Line A	35 Sideroad	565	95.9	
35 Sideroad	Grey Road 4	4th Concession B	426	94.9	
Euphrasia-Holland	Artemesia-Euphrasia	Sideroad 4A	585	94.9	
Townline	Townline				
8th Concession A	Osprey-Artemesia	35 Sideroad	435	92.9	
	Townline				
Sideroad 22B	Grey Road 7	7th Line	410	91.6	
12th Concession B	Osprey-Artemesia	35 Sideroad	480	90.9	
	Townline				

7.0 Pedestrian Safety Investigation of Selected Locations

This Study has identified a number of locations for more detailed review of mitigation options, following the principles outlined in the Safe System approach and Vision Zero goals, as outlined previously in this report. The suggested countermeasures / implementation is categorized based on the 5 E's – Engineering, Education, Enforcement, Engagement and Evaluation.

7.1 Markdale

7.1.1 Main Street and Toronto Street

As noted previously a serious collision occurred at the intersection of Main Street and Toronto Street in Markdale in November 2019. The collision involved a pedestrian that sustained life threatening injuries and a left turning vehicle.

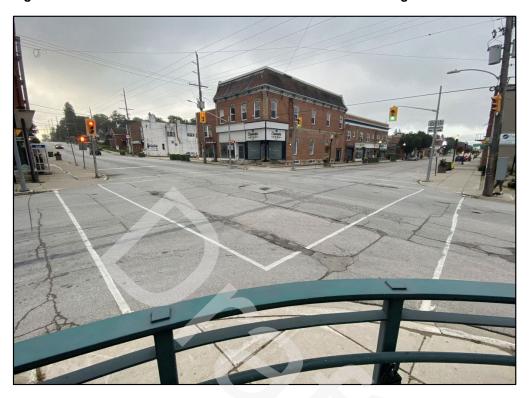
Existing Conditions

The intersection of Main Street and Toronto Street is the major 4-way signalized intersection in the commercial centre of Markdale. Main Street consists of a 2-lane urban cross-section with on-street parking permitted on the east side of the road, north of the intersection, and on-street parking permitted on both sides of the road, south of the intersection. Figure 16 illustrates the existing conditions at this intersection. Toronto Street is a 2-lane urban cross-section with on-street parking permitted on both sides of the road. The intersection has one streetlight provided at two corners (Northeast and Southwest) with a streetlight provided slightly south of the intersection in the southeast corner.

The subject intersection is known to accommodate a significant number of turning movements by large trucks (e.g., truck traffic from the Chapman's ice cream factory). The physical constraints at this intersection to accommodate such movements have necessitated the vehicular stop blocks to be set well back from the crosswalks, as shown in Figure 17 and Figure 18. This configuration has an increased risk of vehicles turning at higher speeds, as compared to the standard configuration where there is a minimal setback of the stop blocks from the crosswalks. Considering the high turning speeds, high truck volumes and high pedestrian volumes there is a higher risk of vehicular / pedestrian conflicts resulting in serious, or fatal, injuries to pedestrians.

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Figure 16: Toronto Street and Main Street W Intersection Existing Conditions



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Figure 17: Westbound Stop Block on Main Street (Grey Road 12)



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Figure 18: Westbound Crosswalk on Main Street (Grey Road 12)



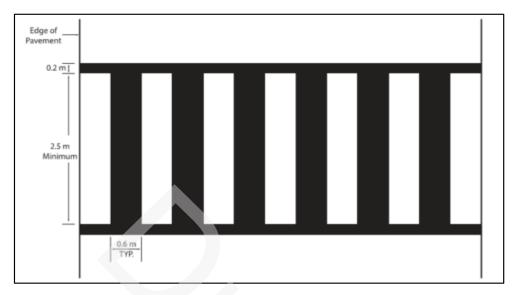
The following improvements are suggested for further consideration by the Municipality to improve pedestrian safety at the intersection of Main Street and Toronto Street:

Engineering

Crosswalk Enhancements – Implement "Ladder" pavement markings to the existing crosswalks, to enhance visibility of the crosswalk and pedestrians crossing. (See Figure 19 for an example). According to studies completed by the US Department of Transportation Federal Highway Administration (FHWA), crosswalk enhancements have been proven to reduce vehicle/pedestrian conflicts at intersections by 40%.

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Figure 19: "Ladder" Crosswalk Example



Source: Ontario Traffic Manual Book 15 - Pedestrian Crossing Treatments.

Review of Truck Turning Movements – The location of the stop blocks should be reviewed, together with the swept path for truck turning, to confirm if any adjustments are possible. In addition, the Municipality may work with industries in Markdale to assess whether alternate haul routes are possible, to minimize truck turning movements at this intersection.

Street Light Enhancements – Confirm the adequacy of streetlights at this intersection to meet acceptable illumination levels and recommend improvements, if required. According to studies completed by the US Department of Transportation FHWA, intersection lighting enhancements have been proven to reduce vehicle/pedestrian conflicts at intersections by 42%.

Modification of Signal Timing – The signal timing plan at this intersection should be reviewed to confirm if improvements are possible to better respond to operating conditions and reduce the conflict potential, particularly between trucks turning and pedestrians crossing.

Leading Pedestrian Intervals (LPIs) can be considered in the signal timing plan to provide the opportunity for pedestrians to start crossing (approximately three to seven seconds earlier) and establish themselves in the crosswalk prior to turning traffic being provided the green indication. According to studies completed by the US Department of Transportation Federal Highway Administration (FHWA), LPIs have proven to reduce vehicle/pedestrian conflicts at intersections by 13%.

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Education

Launch Education Programs – Promote alternative modes of transportation and the perks/benefits. Reducing the number of vehicles utilizing the intersection can help to prevent vehicle/pedestrian conflicts.

Enforcement

Monitor Driver Behaviour – Monitor traffic operations at this intersection and have increased levels of enforcement for vehicles not following traffic signals/control devices and/or pedestrians crossing against the signal.

Engagement

Engage the public in the improvements completed at this intersection through social media posts, website posts, advertisements, etc. and promote the benefits of the improvements so that residents can provide feedback, both positive and negative.

Evaluation

Continue to monitor and evaluate the success of implemented countermeasures. Success can be monitored through quantitative measures such as collision numbers (if available), number of complaints, etc.

Relevance to Pedestrian Safety on Broader Transportation Network

It is recommended that the Municipality and/or County continue to monitor traffic operations and collision rates at the signalized intersections in the overall road network in Grey Highlands, to ensure that safe pedestrian movements are being adequately accommodated.

7.1.2 Grey County CP Rail Trail Crossing at Grey Road 12

Grey County Rail Trail (approximately 77 km in length) and Dufferin County Rail Trail (approximately 38 km in length) provide a continuous trail connection between Orangeville and Owen Sound. The trail crosses Grey Road 12, west of Markdale, at approximately 600 m southwest of Toronto Street North/South (Highway 10).

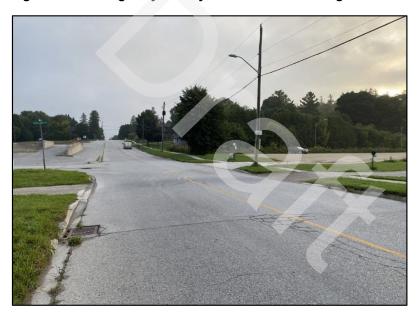
The Grey County Rail Trail also provides connectivity between Grey Road 12 and the sports fields located to the north of Isla Street.

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Existing Conditions

Grey Road 12 is a county road consisting of a 2-lane urban cross-section with a posted speed limit of 50 km/h at the crossing location. According to the Grey County Transportation Master Plan the vehicular volumes on Grey Road 12 are in the order of 1500 AADT on weekends and 2100 AADT on weekdays. There is an existing sidewalk provided on the south side of Grey Road 12, with a buffer of about 2.5 m between the sidewalk and the travel lanes, starting approximately 39 m west of the crossing and continuing into the community of Markdale. The sidewalk continues for about 80 m to the west from this point, however there is no buffer provided. The sidewalk switches sides at this point. As shown in Figure 20, there are no existing crossing facilities at the Rail Trail crossing location.

Figure 20: Existing Grey County CP Rail Trail Crossing at Main Street W



7.1.2.1 Suggested Improvements

Engineering

Implement a Controlled Crossing – Based on the guidelines in Ontario Traffic Manual Book 15 – Pedestrian Crossing Facilities, it is our recommendation that this location be further considered for a Pedestrian Crossover (PXO). Since this is a major trail crossing it is considered to be along pedestrian/cyclist desire lines. As a minimum, a Level 2, Type D Pedestrian Crossover (crosswalk with side-mounted signs, seeFigure 21) may be considered, to improve the safety of the crossing for trail users. However, traffic

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volumes and pedestrian volumes should be monitored to confirm the type of PXO that best meets the needs of this location. Coordination and approvals should be made with the County of Grey for such considerations and implementation.

Figure 21: Suggested Crossing Treatment at Grey Road 12



Figure 39: Pedestrian Crossover Level 2 Type D - Mid-block (2-lane, 2-way)

Sidewalk Upgrades – Considering that the sidewalks on Grey Road 12 switch sides at Glasgow Street, installing a sidewalk on Glasgow Street would also improve the active transportation connectivity between the County Road and the sports fields in this area.

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Education

Provide educational programs/resources for road users and trail users about the dangers of uncontrolled crossings, as well as aggressive travel behaviour, and how to mitigate vehicle/pedestrian conflict. In addition to educational resources for the benefits of this crossing, also provide information regarding the impacts of not stopping for pedestrians as well as any fines and violations.

Enforcement

Enhance enforcement at the new pedestrian crossover to ensure that all traffic laws in connection to these types of crossings are being followed.

Engagement

Similar to the education category, engage the public and residents regarding the benefits of implementing these types of controlled crossings as well as what types of conflict this can reduce. Trail users can be further engaged to report operational experiences via social media and websites through organizations such as the Ontario Trails Council.

Evaluation

Complete a survey/collection of the number of trail users before and after implementation of additional crossing controls, as well as review collision numbers before and after implementation, to determine the net benefit that has been achieved, as a result of the pedestrian crossover.

Relevance to Safety on Broader Transportation Network

It is recommended that the Municipality and/or County continue to monitor traffic operations and collision rates at trail crossings in the overall road network in Grey Highlands, to ensure that safe pedestrian movements are being adequately accommodated.

7.2 Eugenia

Eugenia is a small secondary settlement and is home to multiple tourist type attractions, such as Hawthorn Cottages and Camping, Eugenia Lake and Cedars of Lake Eugenia Cottage Resort.

Existing Conditions

The posted speed limit on Grey Road 13 is 40 km/h (Community Safety Zone), while the majority of the local roads in Eugenia have posted or unposted (i.e., no speed signage) designated speeds of 50 km/h. Numerous safety service requests were received in the

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past for safety improvements, particularly in response to a fatal pedestrian collision, which occurred in July 2022.

7.2.1 Suggested Improvements

Engineering

Reduce Posted Speed Limits – The Municipality should consider reducing the speed limit on all local roads in the community to 40 km/h to match the posted speed of Grey Road 13. Considering the lack of active transportation infrastructure serving this community, a target speed of 40 km/h is more consistent with the desirable target operating speed.

Speed Display Signs and Pedestrian Signage – Installing radar speed display signs, after reducing the speed limit, can alert drivers of their travelling speed and reinforce the new speed limit, to ensure that drivers are aware of the speed they are travelling, as well as the need to moderate speeds to respond to the increased conflict potential. Pedestrian warning signs should also be placed throughout Eugenia to increase motorist awareness of the potential for pedestrian conflict.

Upgraded Active Transportation Facilities – Given the lack of active transportation infrastructure (e.g., sidewalks, streetlights, crosswalks, traffic controls, traffic calming measures) and other road design issues (e.g., sightline obstructions) in the secondary settlement areas, a simple adjustment of the posted speeds may be insufficient to adequately address the pedestrian safety issues in these areas. The effectiveness of such measures is highly dependent on enforcement. Therefore, it is recommended that a strategy be developed to implement improved active transportation infrastructure in these areas.

Education

Partner with local authorities to provide educational and informative resources regarding the negative impacts of speeding as well as speeding penalties/fines.

Enforcement

Partner with local authorities to increase the amount of speeding enforcement in the community, both on local roads and through the community safety zone on Grey Road 13.

Engagement

Similar to the education category, develop engaging ways of promoting safe driving and ways of encouraging a reduction in aggressive driving behaviour.

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Evaluation

Collect speed data, before and after the implementation of speed limit reductions or other mitigation measures, to evaluate the net benefit in speed reduction that results from any of the measures implemented. Additionally, after the speed reduction has been completed, the Municipality could host a resident survey and ask the public to provide their thoughts on whether the implemented measures have worked at reducing the speeds.

In addition, some feedback provided in the public survey in this pedestrian safety study mentioned the abuse of ATVs on local streets within the community. Municipal By-law No. 2016-037, as amended, currently allows ATVs to travel on all roadways within the settlement areas in the Municipality. It is recommended that the pedestrian infrastructure be reviewed in Eugenia to identify if further restrictions to ATV use should be applied in this area, to reduce the potential of conflicts between ATVs and pedestrians.

Relevance to Pedestrian Safety on Broader Transportation Network

The conditions in Eugenia are representative of conditions in other secondary settlement areas in the Municipality. It is recommended that the strategies suggested for Eugenia should be reviewed for all secondary settlement areas, where applicable.

7.2.2 Inkerman Street

Inkerman Street is a north-south, asphalt, local road consisting of a 2-lane semi-urban cross section with open ditches on either side of the road and no pavement markings. There are no existing shoulders or sidewalks provided along Inkerman Street for pedestrians and cyclists to use. There is no obvious sightline issue caused by alignment or overgrown vegetation along Inkerman Street, although some of the limited streetlights that do exist are obscured by foliage in some areas. In addition, "PLAYGROUND AHEAD" (Wc-3) Signs are installed at Pellisier Street, and a 50 km/h speed limit is posted at 8th Concession. The intersection of Inkerman Street and Raglan Street was the location of a fatal collision with a pedestrian, as noted previously. The existing conditions on Inkerman Street require pedestrians to walk along the edge of the road as shown in Figure 22, Figure 23 and Figure 24.

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Figure 22: Inkerman Street North of 8th Concession



Figure 23: Inkerman Street at St. Arnaud Street Intersection



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Figure 24: Inkerman Street (South of Canrobert Street)



Traffic count information for Inkerman Street, provided by the Municipality, is summarized in Table 16 below.

Table 16: Traffic Data on Inkerman Street

Date	From	То	AADT	Average Speed (km/h)	85th Percentile Speed (km/h)
March 26 to March 31, 2019 (Pre-COVID reference)	8th Concession Road	St. Arnaud Street	433	36	56
March 25 to April 2, 2020 (COVID)	Canrobert Street	Raglan Street	30	44	52
Jan 29 to Feb. 5, 2021	Raglan Street	Napoleon Street	243	36.7	51.9

Based on the traffic data, the 85th percentile operating speed is close to the posted speed limit; however, the survey responses show that residents still have concerns regarding speeding.

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A previous request was made to Council, by the Seniors Advisory Committee, recommending that Inkerman Street become a community safety zone from Concession Road 8 to Pellisier Street with a 30 km per hour speed limit. This request was referred to the newly formed Road Safety Community Partnership Committee (RSCPC).

Considering the active transportation activities and the existing road conditions in this area, the following improvements could be considered to improve the safety for pedestrian movements along Inkerman Street.

7.2.2.1 Suggested Improvements

Engineering

Implement All-Way Stop Intersections – It is recommended that the Municipality consider all-way stop controlled intersections at the cross streets along Inkerman Street. Currently, Inkerman Street extends for 1.2 km before traffic is required to stop at stop signs. The placement of stop signs on Inkerman Street will reduce the traffic speeds around the subject intersections, although the impact to moderate speed mid-block should be monitored after the installation of these signs. If speeds are not adequately moderated mid-block it is recommended that further traffic calming (e.g., speed humps) may be considered in mid-block areas to further mitigate speeds.

Reduce Posted Speed Limits – as stated above, the Municipality should consider reducing the speed limit on all local roads in the community to 40 km/h, to match the posted speed of Grey Road 13 (i.e., which is 40 km/h due to the community safety zone) and in recognition of the lack of pedestrian infrastructure along these roads.

Speed Display Signs and Pedestrian Signage – Installing speed display signs, after reducing the speed limit. can alert drivers of their travelling speed and reinforce the new speed limit, to ensure that drivers are aware of the speed they are travelling, as well as the need to moderate speeds to respond to the increased conflict potential. Pedestrian warning signs should also be placed throughout Eugenia to increase motorist awareness of the potential for pedestrian conflict.

Install Signs Indicating "Walk on Left Facing Traffic" – The Municipality should consider installing "WALK ON LEFT FACING TRAFFIC" (Rc-1, see Figure 25) signs along Inkerman Street. Ontario Traffic Manual (OTM) Book 15 indicates that this type of sign is to be used on roads where no sidewalks are provided, and pedestrians are safer to walk on the left edge of the road facing oncoming traffic. Ideal locations for this sign are roads with no sidewalks that experience narrow shoulders or collision history involving pedestrians. This sign is intended to be mounted along the farthest outside edge on the right side of the road to address any pedestrians that are not already walking on the left side of the road.

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Figure 25: Walk on Left Facing Traffic (Rc-1) Sign



Implement Active Transportation Facilities – To promote other modes of transportation, while keeping pedestrians and cyclists safe, the Municipality should further investigate ways to implement active transportation facilities as part of any future rehabilitation work on Inkerman Street. Some possible active transportation facilities for Inkerman Street include shared bike lanes, sidewalks and / or multi-use paths.

Implement Street Lighting – To enhance pedestrian safety, additional street lighting should be implemented along Inkerman Street to create better visibility of pedestrians walking in less-than-ideal conditions (i.e., fog, dark and/or dusk/dawn).

Education

Partner with local authorities to provide educational and informative resources regarding the negative impacts of speeding as well as pedestrian safety. Additionally, the Municipality should consider providing educational resources regarding the benefits of walking on the left side of the road where sidewalks are not provided.

Enforcement

Partner with local authorities to increase the amount of speeding enforcement in the community, both on local roads and the community safety zone on Grey Road 13.

Engagement

Similar to the education category, develop engaging ways of promoting safe driving and ways of encouraging reduction in aggressive driving behaviour (i.e., safe driving campaigns).

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Evaluation

As noted above it is recommended that traffic operations be monitored to assess the effectiveness of mitigation measures to moderate speeds and attract increased pedestrian or cyclist travel along Inkerman Street. If speeds are not adequately moderated mid-block it is recommended that further traffic calming (e.g., speed humps) may be considered in mid-block areas to further mitigate speeds. Data should be collected before and after implementation of mitigation improvements. Additionally, after implementation, the Municipality could host a resident survey and ask the public to provide their thoughts on whether the implemented measures have sufficiently improved conditions for safe active transportation on this street.

7.2.3 Canrobert Street and Pellisier Street

Canrobert Street and Pellisier Street are both east-west, asphalt, local roads consisting of a 2-lane semi-urban cross section with no pavement markings. Canrobert Street has a posted speed of 50 km/h, except for the section between Inkerman Street and South Shores Road, which is posted at 40 km/h. Pellisier Street has a posted speed of 50 km/h throughout the whole road. There are no existing shoulders or sidewalks provided along Canrobert Street or Pellisier Street for pedestrians and cyclists to use. Figure 26 and Figure 27 show the existing conditions along Canrobert Street, while Figure 28 and Figure 29 show the existing conditions along Pellisier Street. There is no obvious sightline issue caused by alignment or overgrown vegetation along Canrobert Street or Pellisier Street.

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Figure 26: Canrobert Street (East of Inkerman Street)



Figure 27: Canrobert Street (West of Inkerman Street)



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Figure 28: Pellisier Street at Inkerman Street Intersection



Figure 29: Pellisier Street (West of Inkerman Street)



Traffic count information for Canrobert Street and Pellisier Street, provided by the Municipality, is summarized in Table 17 and Table 18, respectively.

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Table 17: Traffic Data for Canrobert Street

Date	From	То	AADT	Posted Speed (km/h)	85th Percentile Speed (km/h)
July 31	Evans	Inkerman	266	40	45.9
to August	Street	Street			
6, 2020					
(COVID)					
January	Inkerman	Kinburn	56	50	40
15 –	Street	Street			
January					
22, 2019					

Table 18: Traffic Data for Pellisier Street

Date	From	То	AADT	Posted Speed (km/h)	85th Percentile Speed (km/h)
March 19 to	Grey	Evans	351	50	40
March 26,	Road 13	Street			
2021					
July 31 to	Evans	Inkerman	97	50	40
August 6,	Street	Street			
2020					
(COVID)					

Based on the traffic data, the 85th percentile operating speed is below the posted speed on the sections with a 50 km/h posted speed limit, and over the speed limit for the section with a 40 km/h posted speed. This would suggest that reposting of the speeds to 40 km/h on these roads may have little impact on operating speeds, particularly if not complemented by increased enforcement or other traffic calming measures.

Considering the active transportation activities in this area and the existing road conditions, the following improvements could be considered to improve the safety for active transportation users along Canrobert Street and Pellisier Street.

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7.2.3.1 Suggested Improvements

Engineering

Reduce Posted Speed Limits – as stated above, the Municipality should consider reducing the speed limit on all local roads in the community to 40 km/h, to match the posted speed of Grey Road 13 (40 km/h due to the community safety zone) and in recognition of the lack of pedestrian infrastructure along these roads.

Implement Active Transportation Facilities – To promote other modes of transportation, while keeping pedestrians and cyclists safe, the Municipality should further investigate ways to implement active transportation facilities as part of any future rehabilitation work on Canrobert Street and Pellisier Street. Some possible active transportation facilities for Inkerman Street include shared bike lanes, sidewalks and / or multi-use paths.

Implement Street Lighting – To enhance pedestrian safety, street lighting should be implemented along Canrobert Street and Pellisier Street, to create better visibility of pedestrians walking in less-than-ideal conditions (i.e., fog, dark and/or dusk/dawn)

Education

Partner with local authorities to provide educational and informative resources regarding the negative impacts of speeding as well as pedestrian safety.

Enforcement

Partner with local authorities to increase the amount of speeding enforcement in the community, both on the local roads and through the community safety zone on Grey Road 13.

Engagement

Similar to the education category, develop engaging ways of promoting safe driving and ways of encouraging reduction in aggressive driving behaviour (i.e., safe driving campaigns).

Evaluation

As noted above it is recommended that traffic operations be monitored to assess their effectiveness of mitigation measures to moderate speeds and to attract increased pedestrian or cyclist travel along Canrobert Street and Pellisier Street. Data should be collected before and after implementation of mitigation improvements. Additionally, after implementation, the Municipality could host a resident survey and ask the public to

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provide their thoughts on whether the implemented measures have sufficiently improved conditions for safe active transportation on this street.

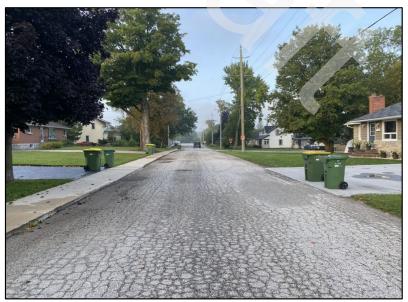
7.3 Flesherton

7.3.1 Macphail Memorial Elementary School

Macphail Memorial Elementary School is located at the west end of Campbell Street, with Alice Street and Hill Street also providing north-south connectivity in the school catchment area.

Campbell Street is a local road consisting of a 2-lane cross section with an assumed (unposted) speed limit of 50 km/h. One "SCHOOL CROSSING" (Wc-2) Sign is installed about 50 m west of Toronto Road, although no crosswalks exist at that location. There is an existing sidewalk provided on the south side of Campbell Street connecting the school and Toronto Street. Although a sidewalk is provided on the south side, no buffer between vehicles and pedestrians is present (as shown in Figure 30 Campbell Street (East of Hill Street)). Street lighting is provided on the north side of the road. The intersection of Campbell Street / Hill Street operates under all-way stop control. Figure 30 below illustrates the existing conditions of Campbell Street between Toronto Road (Highway 10) and Hill Street. Figure 31 and Figure 32 illustrate the existing conditions on Campbell Street from Hill Street to Macphail Memorial Elementary School.

Figure 30: Campbell Street (East of Hill Street)



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Figure 31: Campbell Street (West of Hill Street - Looking West)



Figure 32: Campbell Street (West of Hill Street - Looking East)



Alice Street is a local road consisting of a 2-lane cross section with an assumed (unposted) speed limit of 50 km/h. One "SCHOOL AREA" (Wc-1) Sign is installed about 70 m north of Campbell Street, although no crosswalk exists at this location. There is an

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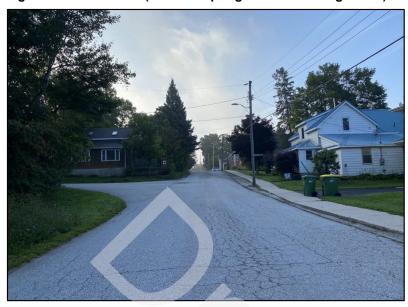
existing sidewalk on the west side of Alice Street between Campbell Street and about 40 m south of Durham Street. Although a sidewalk is provided on the west side of the road, no buffer between pedestrians and vehicles is present. Street lighting is provided on the west side of the road, over the sidewalk. Figure 33 and Figure 34 illustrate the existing conditions of Alice Street between Campbell Street and Durham Street.

Figure 33: Alice Street (North of Campbell Street)



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Figure 34: Alice Street (North of Spring Street - Looking South)



Hill Street is a local road consisting of a 2-lane cross section with an assumed (unposted) speed limit of 50 km/h. One "SCHOOL CROSSING" (Wc-2) Sign is installed about 40 m north of Campbell Street, although no crosswalk exists at this location. There is an existing sidewalk on the west side of Hill Street between Campbell Street and Spring Street. Although the sidewalk is provided on the west side of the street, no buffer between pedestrians and vehicles is present. Street lighting is provided on the west side of the road, over the sidewalk.

It is also noted that there is a vertical curve On Hill Street, between Spring Street and Durham Street that may cause sightline issues for pedestrians and/or cyclists utilizing the edge of the road, as no sidewalk is provided on Hill Street between Durham Street and Spring Street. Figure 35 and Figure 36 illustrate the existing conditions along Hill Street.

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Figure 35: Hill Street at Campbell Street



Figure 36: Hill Street (South of Durham Street)



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Considering the proximity to the elementary school, the potential for vulnerable road users in the community, as well as the vertical curvature on Hill Street, the following improvements should be considered in this area.

7.3.1.1 Suggested Improvements

Engineering

Establish a School Zone – The Municipality should consider establishing a designated "School Zone" through this area and reduce and posted speed limits along Campbell Street, Alice Street and Hill Street to 40 km/h.

Install School Area Signs – The Municipality should replace the Wc-2 (Pedestrian Crossing) signs with Wc-1 (School Area) sign to be in accordance with OTM Book 6 (Warning Signs).

Install Sidewalks with Buffers – The Municipality should consider improving the existing sidewalks along Campbell Street, Alice Street and Hill Street, and construct sidewalks along the remainder of Hill Street, to meet current standards for Accessibility for Ontarians with Disabilities Act (AODA), as well as provide a buffer between pedestrians and vehicles. AODA indicates that the minimum requirements for exterior paths and sidewalks is 1.5 m. Given the possibility that vulnerable road users will be utilizing the sidewalks in this area, buffer zones between traffic and pedestrians should be provided. Students walking to/from school may be travelling in groups, increasing the need to provide an adequate buffer between the sidewalk and the travel lane. However, if sidewalks are constructed without a buffer to the roadway, it is recommended that a minimum width of 1.8 m be provided.

Education

Partner with local authorities to provide educational and informative resources regarding the negative impacts of speeding as well as pedestrian safety and crossing safety.

Enforcement

Partner with local authorities to increase the amount of speeding enforcement in the community during school drop off and pickup times.

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Engagement

Similar to the education category, develop engaging ways of promoting safe driving and promote pedestrian safety (i.e., safe walking practices for children, safe crossing practices, etc.). Encourage the local school board to implement an "Active and Safe Routes to School" (ASRTS) program. ASRTS programs are a partnership among organizations to encourage students to use active transportation to get to school. It also promotes safe, walkable neighbourhoods and communities.

The Municipality should contact the school administration to confirm if issues exist for pedestrian and cyclist safety along the travel routes to the school.

Evaluation

Traffic data should be collected, and traffic observations made before and after implementation of mitigation improvements, to assess the overall safety of pedestrian and cyclist travel to and from the school. The Municipality should contact the school administration to confirm if there are any issues that remain for pedestrian and cyclist safety along the travel routes to the school.

Relevance to Pedestrian Safety on Broader Transportation Network

The conditions related to maintaining safe pedestrian travel to and from MacPhail School can inform requirements for access to other schools in the Municipality. It is recommended that the Municipality take a proactive approach to confirming that safe access is provided to all schools within their jurisdiction, through a review of pedestrian infrastructure, signage and policies that pertain to these school areas.

7.4 Kimberley

Kimberley is a secondary settlement area located in the heart of the Beaver Valley and in proximity to the Bruce Trail. Kimberley is known for attracting significant numbers of visitors in the summer months as people travel to the area to visit various destinations for leisure activities.

7.4.1 Existing Conditions

Beaver Valley Road (County Road 13) is the main road which runs through the village. Grey Road 13 is a 2-lane urban cross-section with a mountable curb on either side of the road. The posted speed is 40 km/h, with a Community Safety Zone (CSZ) through the built-up area of the village, as shown in Figure 37. Radar speed signs and pavement markings (horizontal bars) also exist at each end of the CSZ zone as also shown in Figure 37.

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Through the built-up area, an asphalt parking lane shoulder is provided on Grey Road 13 on both sides of the road, as shown in Figure 38. This asphalt shoulder facilitates parking for the adjacent commercial establishments, as well as some accommodation for pedestrian travel along the road (i.e., when travel is not obstructed by parked vehicles). A sidewalk also exists adjacent to part of this paved shoulder, along the west side of the corridor. The sidewalk narrows in the area of a creek crossing of Grey Road 13, to the north of Centre Road, as shown in Figure 39 and Figure 40. The sidewalk is relatively new to the south of Centre Road, however, is in a deteriorated condition to the north of Centre Road. Signage is in place for the sidewalk noting that it is not maintained in the winter.

Concerns regarding traffic speeds and traffic volumes were expressed by Kimberley residents in the public survey, along with concerns over the condition of infrastructure and the lack of active transportation facilities.





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Figure 38: Asphalt Parking Lane on the East side of Grey Road 13



Figure 39: Grey Road 13 (North of Centre Road)



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Figure 40: Bridge on Grey Road 13 (North of Centre Road)



7.4.1.1 Suggested Improvements

Engineering:

Active Transportation Infrastructure Upgrades – Along much of the segment of Grey Road 13, the existing asphalt shoulder functions as a shared parking/pedestrian path. This arrangement is likely adequate for the areas, or time periods, when parking demand is low. Ideally, separate sidewalks should be provided in areas where the shared arrangements do not provide a sufficient level of service, as already provided along a segment of the corridor. Also, the condition of the existing sidewalk should be improved, where required, to provide for safe pedestrian travel. Consideration should also be given to providing full year maintenance on sidewalks in Kimberley, or to ensure that the asphalt shoulders are adequately maintained for safe pedestrian movements.

Education

Partner with local authorities to provide educational and informative resources regarding the negative impacts of speeding through built-up areas as well as ways that pedestrians can be aware of the risks associated with the traffic volumes on county roads and/or walking in proximity to major roads.

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Enforcement

Partner with local authorities to increase the amount of speeding enforcement in the built-up area, given that the village is currently a Community Safety Zone.

Engagement

Similar to the education category, the Municipality should develop engaging ways of promoting safe driving and pedestrian safety. The Municipality should also consider implementing some resident feedback while making improvements in the built-up areas. Local knowledge of the built-up area and the traffic conditions (both vehicles and pedestrians/cyclists) can be a benefit during the design/implementation stage.

Evaluation

It is recommended that traffic operations be monitored to assess the effectiveness of improvements that are implemented to improve pedestrian safety in Kimberley. Data should be collected before and after implementation of mitigation improvements. Additionally, after implementation, the Municipality could host a resident survey and/or ask commercial operators to provide their thoughts on whether the implemented measures have sufficiently improved conditions for safe active transportation along this corridor.

Relevance to Pedestrian Safety on the Broader Transportation Network

A number of the Municipality's settlements are served by county roads that both accommodate through traffic and facilitate access to abutting commercial and/or residential development. The higher speeds of the county roads must transition to a lower speed environment, given the higher potential for conflict with pedestrians in the built-up environment. Significant mitigation measures have been taken in Kimberley to slow traffic speeds. It is recommended that the Municipality complete reviews of pedestrian movements in all of their settlement areas where similar conditions exist, with a view to improving pedestrian safety based on lessons learned from ongoing monitoring of the existing and proposed safety mitigation measures in Kimberley.

7.5 Other Communities

7.5.1 **Ceylon**

Ceylon is a small secondary settlement area located southwest of the community of Flesherton. Grey Road 4 provides east-west connectivity across the community for both vehicular traffic and active transportation. The section passing through the community is identified as a community safety zone, with a posted speed limit of 50 km/h. Grey Road 4 consists of a 2-lane rural cross-section. Vertical curves on Grey Road 4, near the north and south entries to the settlement, provide some visibility restrictions along the corridor.

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The Grey County CP Rail Trail crossing is located approximately 100 m east of Bell Street, with no existing signage or crossing facilities, as shown in Figure 41.

Grey Road 4 is a paved road with gravel shoulders west of Ceylon (shown in Figure 42) with paved shoulders and mountable curb on both sides beginning west of Jane Street and continuing through the hamlet to west of Old Highway 4. The paved shoulders have widths of about 1.0 m to 1.5 m between Jane Street and Old Highway 4. The remnants of an old sidewalk exist along the west side of Grey Road 4 through the settlement, although based on its condition it does not provide a safe route for pedestrian travel. There is street lighting provided on both sides of Grey Road 4.

Figure 41: Grey County CP Rail Trail Grey Road 4 Crossing



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Figure 42: Gravel Shoulders Along Grey Road 4 (West of the Village)



7.5.1.1 Suggested Improvements

Engineering

Implement a Controlled Crossing – Based on the guidelines in Ontario Traffic Manual Book 15 – Pedestrian Crossing Facilities, it is our recommendation that the trail crossing location be further considered for a Pedestrian Crossover (PXO). Since this is a major trail crossing it is considered to be along pedestrian/cyclist desire lines. As a minimum, a Level 2, Type D Pedestrian Crossover (crosswalk with side-mounted signs, see Figure 43) may be considered, to improve the safety of the crossing for trail users. However, traffic volumes and pedestrian volumes should be monitored to confirm the type of PXO that best meets the needs of this location. Coordination and approvals should be made with the County of Grey for such considerations and implementation.

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Figure 43: Suggested Crossing Treatment at Grey Road 12



Figure 39: Pedestrian Crossover Level 2 Type D – Mid-block (2-lane, 2-way)

Implement Active Transportation Facilities – Considering the existence of the Ceylon General Store on Grey Road 4 in Ceylon, as well as residential development adjacent to this road and in an adjacent subdivision, there is expected to be some demand for pedestrian travel along the corridor. As noted in the Municipality's 2018 Road Needs Study there is an overgrown asphalt path along part of the corridor in this area. To provide for safer pedestrian travel, the Municipality should consider repairing or removing existing sidewalks and/or providing paved shoulders with a minimum width of 2.0 m, to allow some buffer between pedestrians and vehicular travel. Year-round maintenance should be provided on sidewalks and on paved shoulders to facilitate safe pedestrian movements.

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Speed Limit Reduction – It is our recommendation that the Municipality monitor the speeds through the CSZ, and if required, reduce the posted speed limit through the hamlet from 50 km/h to 40 km/h to enhance pedestrian safety given that it is a Community Safey Zone. Implementing this speed reduction through the Community Safety Zone would make the speed through the CSZ consistent with other CSZs in the Municipality.

Education

Partner with local authorities to provide educational and informative resources regarding the negative impacts of speeding through built-up areas as well as ways that pedestrians can be aware of the risks associated with the traffic volumes on County roads and/or walking in proximity to major roads.

Enforcement

Partner with local authorities to increase the amount of speeding enforcement in the built-up area given that the village is currently a Community Safety Zone.

Engagement

Similar to the education category, the Municipality should develop engaging ways of promoting safe driving and pedestrian safety. The Municipality should also consider implementing some resident feedback while making improvements in the built-up areas. Local knowledge of the built-up area and the traffic conditions (both vehicles and pedestrians/cyclists) can be a benefit during the design/implementation stage.

Evaluation

It is recommended that traffic operations be monitored to assess the effectiveness of improvements that are implemented to improve pedestrian safety in Ceylon. Data should be collected before and after implementation of mitigation improvements. Additionally, after implementation, the Municipality could host a resident survey and/or ask the commercial operator to provide their thoughts on whether the implemented measures have sufficiently improved conditions for safe active transportation along this corridor.

Relevance to Pedestrian Safety on the Broader Transportation Network

A number of the Municipality's settlements are served by county roads that both accommodate through traffic and facilitate access to abutting commercial and/or residential development. The higher speeds of the county roads must transition to a lower speed environment, given the higher potential for conflict with pedestrians in the built-up environment. The previously implemented mitigation measures (e.g., lower posted speeds and implementation of a community safety zone in the settlement) are intended to slow traffic speeds. It is recommended that the Municipality complete

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reviews of pedestrian movements in all of their settlement areas where similar conditions exist, with a view to improving pedestrian safety based on lessons learned from ongoing monitoring of the existing and proposed safety mitigation measures in Ceylon.

7.5.2 Priceville

Priceville is a small, secondary settlement area located along the Saugeen River. Grey Road 4 provides a main east-west connection through the village and provides connection to many other rural routes, that guide residents and visitors to points of interest. The primary development in Priceville is residential land use, primarily occurring in subdivisions with local road connections from both sides of Grey Road 4. The type of development immediately adjacent to Grey Road 4 does not generate significant demand for pedestrian travel along the corridor, however there may be some demand for pedestrians crossing the County Road between the subdivisions. There are sidewalks in some part of the residential subdivisions, however they are signed for no winter maintenance.

Grey Road 4 consists of a 2-lane rural cross-section with gravel shoulders, which transitions into an urban cross-section through part of the village. The vertical and horizontal alignment of Grey Road 4 through Priceville provides some sight distance limitations. Mountable curbs are present along Grey Road 4 starting east of Artemesia Glenelg Townline to Kincardine Street, with a paved shoulder on both sides beginning at Queen Street A. From Kincardine Street to the east limits of the village, the shoulders are fully paved and the cross section is rural. In addition to the paved shoulders, Grey Road 4 has a concrete sidewalk present on the north side of the road from Kincardine Street to 42.0 m east of Queen Street A and on the south side from 42.0 m east of Queen Street A to Queen Street A.

Priceville is a Community Safety Zone with a posted speed limit of 50 km/h.

Of the concerns presented during the public survey, speeding and lack of sidewalks/pedestrian facilities was the most reported concern. Some residents also reported in the survey that some of the sidewalks in the village have been removed and not replaced. It is acknowledged that the Municipality's 2018 Road Needs Study had recommended that the existing overgrown sidewalk on Prince Streeet, between Durham Road A and Elgin Street, be removed, considering the low speed, low traffic environment in this area. It is suggested that the Municipality monitor the pedestrian demands and speeds along this road to confirm if replacement of this sidewalk should be considered.

Figure 44, Figure 45 and Figure 46 show the various active transportation conditions present. It can be concluded from these photos, that one consistent type of active transportation facility is not available.

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Figure 44: Grey Road 4 (East of Artemesia Street)



Figure 45: Grey Road 4 (West of Kincardine Street)



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Figure 46: Saugeen River Bridge (West of River Street)



7.5.2.1 Suggested Improvements

Engineering:

Improve Active Transportation Infrastructure – It is recommended that the Municipality work with the County to improve the existing active transportation infrastructure along Grey Road 4 in Priceville, to be consistent and more suitable for pedestrians and cyclists. Consideration could be made to implementing minimum 2.0 m wide paved shoulders, together with mountable curbs along the full length of Grey Road 4 in Priceville.

Speed Limit Reduction – It is our recommendation that the Municipality consider working with the County to monitor the speeds through the CSZ, and if required, reduce the posted speed limit through the hamlet from 50 km/h to 40 km/h, to enhance pedestrian safety given that it is a Community Safey Zone. Implementing this speed reduction through the Community Safety Zone will make the speed through the CSZ consistent with other CSZs in the Municipality.

Implement Sidewalks within the Village – It is recommended that the Municipality complete further investigation and consultation to inform a strategy for installing

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sidewalks (concrete or asphalt) along the local roads in Priceville, to provide suitable safe facilities for pedestrians.

Education

Partner with local authorities to provide educational and informative resources regarding the negative impacts of speeding through built-up areas as well as ways that pedestrians can be aware of the risks associated with the traffic volumes on county roads and/or walking in proximity to major roads.

Enforcement

Partner with local authorities to increase the amount of speeding enforcement on Grey Road 4 in the built-up area, given that the village is currently a Community Safety Zone.

Engagement

Similar to the education category, the Municipality should develop engaging ways of promoting safe driving and pedestrian safety. The Municipality should also consider implementing some resident feedback while making improvements in the built-up areas. Local knowledge of the built-up area and the traffic conditions (both vehicles and pedestrians/cyclists) can be a benefit during the design/implementation stage.

Evaluation

It is recommended that traffic operations be monitored to assess the effectiveness of improvements that are implemented to improve pedestrian safety in Priceville. Data should be collected before and after implementation of mitigation improvements. Additionally, after implementation, the Municipality could host a resident survey to provide their thoughts on whether the implemented measures have sufficiently improved conditions for safe active transportation along this corridor.

Relevance to Pedestrian Safety on the Broader Transportation Network

A number of the Municipality's settlements are served by county roads that both accommodate through traffic and facilitate access to residential development in those areas. The higher speeds of the county roads must transition to a lower speed environment, given the higher potential for conflict with pedestrians in the built-up environment. The previously implemented mitigation measures (e.g., lower posted speeds and implementation of a community safety zone in the settlement) are intended to slow traffic speeds. It is recommended that the Municipality complete reviews of pedestrian movements in all of their settlement areas where similar conditions exist, with a view to improving pedestrian safety based on lessons learned from ongoing monitoring of the existing and proposed safety mitigation measures in Priceville.

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7.6 Summary of Location-Specific Recommendations

The issues and recommendations for the eight locations, where more detailed pedestrian safety assessment has been completed in the previous sections, are summarized in Table 19:

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Table 19: Summary of Location-Specific Issues and Mitigation Recommendations

Location	Community	Existing Conditions / Concerns	Recommended Improvements
Main Street at Toronto Road Intersection	Markdale	 Main connecting point for major routes into the village. Required to accommodate large volumes or heavy vehicles. Stop blocks setback considerable distance from corner. Limited street lighting available. 	 Engineering Crosswalk visibility enhancements (i.e., ladder crossing). Modification/review of stop block locations and truck turning requirements. Streetlight enhancements/upgrades Review, modify the signal timing plan, if possible, to improve pedestrian safety (e.g., consider implementing a leading pedestrian interval). Education Launch educational programs about alternative modes of transportation as well as the perks/benefits and any safety risks that need mitigation. Enforcement Increase targeted enforcement and monitor driver behaviour. Engagement Engage the public in the detail design/implementation stage of any intersection improvements. Evaluation Continuously monitor the success of implemented countermeasures (i.e., reduction in aggressive driving, reduction in complaints/requests, reduction in collisions, etc.). Relevance to Pedestrian Safety in Broader Transportation Network Continuously monitor traffic operations and collision rates at all signalized intersections in the overall road network; adjust signal timing where required.

Location	Community	Existing Conditions / Concerns	Recommended Improvements
Grey County CP Rail Trail (Main Street Crossing)	Markdale	 County road used for access to Markdale. Sidewalk buffer width is not consistent (in some areas no buffer is present). Sidewalk switches side and is not consistent. No control devices are present at the crossing. 	 Monitor traffic and pedestrian volumes; Install a Pedestrian Crossover (PXO) (possible Level 2, Type D PXO Install Sidewalks on Glasgow Street. Education Launch educational programs for road/trail users about the potential for conflicts at uncontrolled or controlled trail crossings. Enforcement Increase enforcement for the crossing after the PXO has been implemented to ensure traffic laws are being followed. Engagement Engage the public in the detailed design/implementation stage for this new controlled crossing. Evaluation Complete a survey and/or collect observational data of the trail crossing, before and after implementation of a PXO, to determine if implementing a controlled crossing promotes safer operations. Relevance to Pedestrian Safety in Broader Transportation Network Municipality and/or County to continue to monitor traffic operations and collision rates at trail crossings in the overall network.

Location	Community	Existing Conditions / Concerns	Recommended Improvements
Inkerman Street	Eugenia	 Recent fatal pedestrian collision. Rural cross section in a semi-urban environment. No pavement marking/centreline. No sidewalk available and/or paved shoulder. Survey responses indicate that speeding is an issue. Road continues straight, uninterrupted for 1.2 km. 	 Implement all-way stop intersections at cross streets. Reduce posted speed limits. Install digital speed display signs. Install pedestrian indication signs. Develop a strategy to implement active transportation facilities (i.e., shared bike lanes, sidewalks or multi-use paths). Implement streetlighting. Education Partner with local authorities to provide educational resources regarding the negative/societal impacts of speeding. Enforcement Partner with local authorities to increase the amount of speeding enforcement in the community. Engagement Engage the public in safe driving campaigns. Evaluation Collect speed/collision data and resident input before and after countermeasure implementation. Review whether ATV restrictions should be implemented. Relevance to Pedestrian Safety in Broader Transportation Network Implement similar strategies in other secondary settlements.

Location	Community	Existing Conditions / Concerns	Recommended Improvements
Canrobert and	Eugenia	No pavement	Engineering
Pellisier Street		marking/centreline.	Reduce posted speed limits.
		No sidewalk	Develop a strategy to implement active transportation facilities (i.e.,
		available and/or	shared bike lanes, sidewalks or multi-use paths).
		paved shoulder.	Implement streetlighting.
		Survey responses	Education
		indicate that	Partner with local authorities to provide educational resources
		speeding is an	regarding the negative/societal impacts of speeding.
		issue.	Enforcement
			Partner with local authorities to increase the amount of speeding enforcement in the community.
			Engagement
			Engage the public in safe driving campaigns.
			Evaluation
			Collect speed/collision data and resident input before and after countermeasure implementation.
			Relevance to Pedestrian Safety in Broader Transportation Network
			Implement similar strategies in other secondary settlements.

Location	Community	Existing Conditions / Concerns	Recommended Improvements
Macphail Memorial Elementary School	Flesherton	 Existing speed limits are not posted. Sidewalks are provided on at least one side of most local roads in the area (no buffer zone). Some streetlighting is provided. There is a vertical curve present on Hill Street (no sidewalk where the hill is). 	 Establish a designated school zone. Replace school crossing signs with school area signs. Consider improving the existing sidewalk network (increased sidewalk widths or provide buffers). Education Partner with local authorities to provide educational resources regarding the negative impacts of speeding in school areas as well as crossing safety. Enforcement Partner with local authorities to increase the amount of speeding enforcement in the community during school pick-up and drop-off times. Engagement Engage the public to participate in safe driving campaigns as well as encourage the local school board to implement an Active and Safe Routes to School Program Evaluation Collect speed and pedestrian volume data and resident/school input before and after any improvements are implemented. Relevance to Pedestrian Safety in Broader Transportation Network Review pedestrian infrastructure, signage and policies pertaining to all schools within Grey Highlands.

Location	Community	Existing Conditions / Concerns	Recommended Improvements
Grey Road 13 Built up Area	Kimberley	 Significant volume of visitors in the summer months. Existing Community Safety Zone is present in the built-up area. Asphalt shoulder/parking lane is provided on both sides of the road. Sidewalk is provided on the west side of the road. Survey results indicate that speeding and high traffic volumes are a concern. 	 Engineering Consider adding additional sidewalks, if required, to facilitate safe pedestrian movements during periods of high parking demand. Consider maintaining sidewalks and paved shoulders in the winter. Education Partner with local authorities to provide educational resources regarding the negative impacts of speeding in the built-up areas that attract visitors. Enforcement Partner with local authorities to increase the amount of speeding enforcement in the built-up area, given that it is an existing Community Safety Zone. Engagement Engage the public and business owners to participate in safe driving campaigns and to provide feedback on pedestrian operations. Evaluation Collect speed and volume data and resident/business feedback before and after countermeasures have been implemented. Relevance to Pedestrian Safety in Broader Transportation Network Implement similar strategies in other secondary settlements with similar conditions.

Location	Community	Existing Conditions / Concerns	Recommended Improvements
Grey Road 4 Built up Area	Ceylon	 Increased volume of visitors in the summer months, using the trail crossing and frequenting the general store. Existing Community Safety Zone is present in the built-up area. Asphalt shoulder/parking lane is provided on both sides of the road. Sidewalk is provided on the west side of the road. Survey results indicate that speeding and high traffic volumes are a concern. 	 Implement a Level 2, Type D Pedestrian Crossover (PXO). Implement active transportation facilities on the county road with appropriate buffer zones. Develop a strategy to implement active transportation facilities (i.e., shared bike lanes, sidewalks or multi-use paths Speed limit reduction to match other Community Safety Zones. Education Partner with local authorities to provide educational resources regarding the negative impacts of speeding in the built-up areas as well as information regarding the risks of pedestrians walking along major/county roads. Enforcement Partner with local authorities to increase the amount of speeding enforcement in the built-up area, given that it is an existing Community Safety Zone. Engagement Engage the public to participate in safe driving campaigns. Evaluation Collect speed and volume data and resident input before and after countermeasures have been implemented. Relevance to Pedestrian Safety in Broader Transportation Network Review pedestrian movements in settlement areas with similar conditions, applying any lessons learned from the implementation of safety mitigation measures in Ceylon.

Location	Community	Existing Conditions / Concerns	Recommended Improvements
Grey Road 4 Built up Area	Priceville	 Primary land use is residential, which will result in pedestrian activity. Paved shoulders are available through the village on both sides of the county road. Concrete sidewalk is available between Kincardine Street and Queen Street A Existing Community Safety Zone. Survey results indicated that some sidewalks have been removed and not reinstated. 	 Engineering Work with the County to improve Implement consistent active transportation facilities on the county road, with appropriate buffer zones. Develop a strategy to implement active transportation facilities (i.e., shared bike lanes, sidewalks or multi-use paths) on local roads. Speed limit reduction to match other Community Safety Zones. Education Partner with local authorities to provide educational resources regarding the negative impacts of speeding in the built-up areas as well as information regarding the risks of pedestrians walking along major/county roads. Enforcement Partner with local authorities to increase the amount of speeding enforcement in the built-up area, given that it is an existing Community Safety Zone. Engagement Engage the public to participate in safe driving campaigns. Evaluation Collect speed and volume data and resident input, before and after countermeasures have been implemented. Relevance to Pedestrian Safety in Broader Transportation Network Review pedestrian movements in settlement areas with similar conditions, applying any lessons learned from the implementation of safety mitigation measures in Priceville.

8.0 School Crossing Guard Review

A detailed review has been completed of the warrants for crossing guards, or other crossing improvements, in the school areas within the Municipality, including the following:

- Beavercrest Community School on Main Street East (Grey Road 12) in Markdale –
 consideration of crossing operations at the existing pedestrian crossover (PXO) and
 at the intersection of Edith Avenue / Main Street East (Grey Road 12).
- MacPhail Memorial Elementary School on Campbell Street in Flesherton –
 consideration of crossing requirements at the intersection of Campbell Street / Hill
 Street and Campbell Street / Alice Street. Ongoing construction on Toronto Road
 (Highway 10) prevented reviews of crossing operations at the intersections at
 Campbell Street / Toronto Road (Highway 10) and Elizabeth Street / Toronto Road
 (Highway 10).
- Grey Highlands Secondary School on Highway 10 in Flesherton consideration of
 crossing requirements at the intersection of Highland Drive / Toronto Road (Highway
 10). It is acknowledged that the students crossing in this area will be senior students
 and therefore warrants for crossing guards do not apply. Crossing operations at this
 location have been reviewed to inform potential PXO requirements, given
 origin/destination considerations between the school and the arena/library.
- Osprey Central Elementary School on Grey Road 4 in Maxwell consideration of crossing requirements at the intersection of Grey Road 4 / Grey Road 2 / Sideroad 45, as well as to comment on pedestrian operations along Grey Road 4.

Field surveys were conducted within the catchment areas of each school to assess the crossing requirements (i.e., crossing guard warrants and/or pedestrian crossover (PXO) warrants), as discussed further in the following sections. The criteria applied to assess the warrants include the following;

Crossing Guard Warrants (OTC Crossing Guard Guide):

- Gap Study, where applicable Providing safe gaps of less than 50% of the peak school crossing periods.
- Exposure Index Study, where applicable Calculate the exposure index, based on
 the conflict potential equated to the summation of the number of vehicles crossing
 the crosswalk x the number of pedestrians using the crosswalk. The exposure index
 is compared to minimum thresholds established for the control type being analyzed.
 The Municipality has not established reference exposure indices since there is no
 existing crossing guard program. Therefore, this study has used typical exposure
 indices based on a review of monitoring/prioritizing crossing guard locations under
 various controls in other representative municipalities.;

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 Minimum Number of Students Crossing - Accommodating a minimum of 30 elementary student crossings during the AM or PM period to warrant a crossing guard.

Pedestrian Crossover (PXO) Warrants (Ontario Traffic Manual, Book 15)

- Minimum volume warrants: minimum 8-hour pedestrian volume of 100 and minimum eight hour vehicular volume of 750; or minimum four hour pedestrian volume of 65 and minimum four hour vehicular volume of 395.
- If minimum volume warrants are not met, also assess pedestrian desire lines and proximity to nearest controlled crossing.

8.1 Beavercrest Community School

The field investigation of the catchment area for the Beavercrest Community School noted the following:

Existing PXO Crossing

- Sixteen students (13 elementary, three senior) were observed to cross at the PXO in a.m. peak period (45 minutes) and 37 students (23 elementary and 14 senior) were observed to cross at the PXO in the p.m. peak period (45 minutes). 63% of the students crossing in the AM were accompanied by an adult and 35% of the students crossing in the PM were accompanied by an adult.
- Vehicular traffic on Grey Road 12: 245 vehicles in a.m. peak period (45 minutes),
 246 vehicles in p.m. peak period (45 minutes).
- Exposure Index: a.m. peak period 3185, p.m. peak period 5658.
- Peak Hour Traffic: a.m. 290 vph, PM 318 vph.
- Off Peak Traffic: Average 238 vph.

Conclusion: The volumes of pedestrian and vehicular traffic justify the PXO at this location, as well as increasing the controls to include the implementation of a crossing guard. The high number of students that are accompanied by an adult also suggest that a crossing guard would be beneficial.

Recommendation: Consider implementing a crossing guard at the existing PXO.

Potential Crossing of Main Street East (Grey Road 12) At the Intersection of Edith Avenue (Gap Study)

 Four students (two elementary, two senior) were observed to cross Grey Road 12 in the a.m. peak period (30 minutes) and nine students (eight elementary and one senior) were observed to cross in the p.m. peak period (45 minutes). One of the students crossing was accompanied by an adult.

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- Vehicular traffic on Grey Road 12: 99 vehicles in the a.m. peak period (30 minutes),
 135 vehicles in the p.m. peak period (30 minutes).
- Safe gaps were available 100% of the a.m. peak period and 100% of the p.m. peak period, based on the criteria of providing at least four safe gaps in a five minute period. However, a number of 5-minute periods only have four safe gaps. If the periods with four gaps are considered to be deficient, the percentage of safe gaps would be reduced to only 50% in the a.m. peak period and 83% in the p.m. peak period.
- The traffic volumes on Grey Road 12 were observed to be 199 vph in the a.m. peak hour, 270 vph in the p.m. peak hour and average of 238 vph in the off-peak hours.

Conclusion: A crossing guard is not warranted at this crossing. A PXO is not warranted at this crossing, based on crossing volumes and available safe gaps. However, it should be noted that the availability of safe gaps is nearing the warrant criteria. Considering that this is a demonstrated desire line for crossing by at least some elementary school students crossing, the Municipality may consider implementing a PXO at this location to enhance safety, subject to the results of future monitoring of crossing activity at this location.

Recommendation: Continue to provide an enhanced level of speed enforcement. Consider implementing a Community Safety Zone in this area to reinforce compliance with the posted speeds. Monitor adherence to posted speeds and install radar speed signs, if required, to further calm traffic entering the School zone. Continue to monitor the crossing operations at this intersection and consider implementing a PXO crossing in the future, if the number of safe gaps decrease to meet the minimum threshold set by the crossing guard criteria.

8.2 Grey Highlands Secondary School

The field investigation in the area of Highlands Drive / Toronto Road (Highway 10) noted the following:

- Ongoing construction operations on Highway 10, with long queues and delays in the study area, precluded completing a gap analysis to assess crossing gaps on this road.
- Students cross Highway 10 in front of the school to travel between the school and the library / arena. Twenty-four students were observed to cross Highlands Drive between 11:30 AM to 12:30 PM. It is assumed that this volume would have crossed Highway 10 in front of the school.
- Vehicular traffic on Highlands Drive a.m. peak 40 vph, p.m. peak 22 vph.
- Vehicular traffic on Highway 10: a.m. peak 343 vph, p.m. peak 337 vph, Off-peak average of 290 vph.
- Sixteen students were observed to use the sidewalk along the south side of Highway 10 during the a.m. peak period (35 minutes). Sixty-seven students were

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observed to use this sidewalk during the off-peak period. It is assumed that these students would also have travelled through the Campbell Street / Toronto Road (Highway 10) intersection.

Conclusion: A crossing guard is not required to serve the high school due to the age of the students. The minimum PXO volume requirement may be met in front of the high school, although this will require verification once construction work is completed in this area.

Recommendation: Further study should be completed, once construction has been completed, to confirm whether a PXO is warranted in front of the high school.

8.3 MacPhail Memorial Elementary School

The field investigation of the catchment area for the MacPhail Memorial Elementary School noted the following:

Intersection of Campbell Street / Hill Street (All-Way Stop Control)

- Twenty-four students using the north sidewalk adjacent to the intersection during the a.m. peak period (45 minutes), 36 students using the north sidewalk adjacent to the intersection during the p.m. peak period (45 minutes).
- Eleven students crossing Campbell Street and 73 vehicles travelling on Campbell Street during the a.m. peak period (45 minutes), exposure index = 803.
- Fifteen students crossing Campbell Street and 72 vehicles travelling on Campbell Street during the p.m. peak period (45 minutes), exposure index = 780.

Conclusion: A crossing guard is not warranted at this intersection, based on the exposure index.

Recommendation: Continue to monitor crossing operations at this intersection to confirm that stop controls and yielding of ROW to pedestrians are being adhered to.

Intersection of Campbell Street / Alice Street (Proposed All-Way Stop Control)

- Twenty-four students the north sidewalk adjacent to the intersection during the a.m. peak period (35 minutes), 47 students using the north sidewalk adjacent to the intersection during the p.m. peak period (40 minutes).
- Nine students crossing Campbell Street and 136 vehicles travelling on Campbell Street during the a.m. peak period (35 minutes), exposure index 1224.
- Twenty buses arriving during the a.m. peak period (35 minutes).

Conclusion: A crossing guard is not warranted at this intersection, based on the exposure index. However, there a significant number of buses that travel through this intersection, which may increase the conflict potential.

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Recommendation: Continue to monitor crossing operations at this intersection after implementation of all-way stop control, to confirm any potential conflict.

Intersections of Spring Street / Elizabeth Street / Toronto Road (Highway 10) and Campbell Street / Toronto Road (Highway 10)

Due to active construction work being completed on Toronto Road (Highway 10), field surveys could not be completed at the intersection of Spring Street / Elizabeth Street / Toronto Road (Highway 10) and Campbell Street / Toronto Road (Highway 10). Data collected at the intersection of Campbell Street / Hill Street and at the intersection of Highland Drive / Toronto Road (Highway 10) suggest the following traffic travelling through these external intersections to the MacPhail Memorial Elementary School:

 Over 100 vehicles and about 25 students in the a.m. peak period (45 minutes) and over 60 vehicles and about 35 students in the p.m. peak period (45 minutes). There may also be a number of students that move through these intersections travelling to the Grey Highlands Secondary School (i.e., about 19 students in the a.m. peak period and about 6 students in the PM peak period).

Based on the potential activity levels in the areas of these external intersections it is recommended that detailed field reviews be completed in the spring, once roadwork construction has been completed.

8.4 Osprey Central Elementary School

The field investigation of the catchment area for the Osprey Central Elementary School noted the following:

- Students were observed to walk along the road shoulder on Grey Road 4 and cross in front of the school.
- Posted speed on Grey Road 4 is 40 km/h when warning flashers are activated during school and 50 km/h otherwise, however typical operating speeds were noted to be 65 km/h.
- There are existing school warning signs along Grey Road 4.
- Semi trucks were observed to be using the intersection of Grey Road 4 / Grey Road 2.

A gap study was completed to assess the crossing opportunities for Grey Road 4 in the study area, with the following results:

- Six students crossing in the AM period and Six students crossing in the PM period.
- Safe gaps were available for 92% of a.m. peak hour and 100% of the p.m. peak hour period.
- The traffic volumes on Grey Road 4 were observed to be 287 vph in the a.m. peak hour, 298 vph in the p.m. peak hour and average of 256 vph in the off-peak hours.

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A exposure index study was completed to assess the conflict potential for crossings at the stop sign on Sideroad 45, with the following results:

• The volume of vehicles on Sideroad 45 was recorded to be ten vph in the a.m. peak hour and 22 vph in the p.m. peak hour. Only one adult pedestrian was observed to cross this road at the intersection in the a.m. peak hour and zero pedestrians in the p.m. peak hour.

Conclusion: A crossing guard is not warranted in the study area. A PXO is not warranted in the study area due to the low pedestrian crossing volumes.

Recommendation: Continue to enforce the posted speeds in the Community Safety Zone on Grey Road 4 in the study area. Monitor adherence to posted speeds and install radar speed signs, if required, to further calm traffic entering the community.

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9.0 General Recommendations

It is recommended that the Municipality and/or County continue to monitor traffic operations and collision rates at the signalized intersections and trail crossings in the overall road network in Grey Highlands, to ensure that safe pedestrian movements are being adequately accommodated.

Any areas that are designated as a Community Safety Zone should have the speed limit reduced to 40 km/h, where feasible. Consistent speed limits through Community Safety Zones can help to increase the amount of road users following the designation by reducing their operating speed.

Where no sufficient active transportation facility is available, the Municipality should investigate the various ways to implement a satisfactory active transportation facility, with appropriate buffer zones.

Where street illumination may be an issue and development and/or pedestrian activity is expected, the Municipality should investigate ways to upgrade and/or install streetlights.

9.1.1 Intersection treatment:

Where possible, crosswalks at intersections (Signalized or Unsignalized), that experience significant pedestrian crossings, should have their pavement markings converted to ladder crosswalks, rather than the standard markings.

If high pedestrian activity is present at signalized intersections, and pedestrian visibility is low near the curb/edge of road or there are other pedestrian safety issues, the Municipality should investigate the possibility to implement leading pedestrian intervals in the signal timing plan.

The location of stop blocks should be reviewed at signalized intersections, to reduce the conflict potential of turning movements with pedestrian crossings, while still maintaining any minimum specifications and accommodating swept paths for design vehicles.

9.1.2 Pedestrian crossing location selection

The Municipality should consider using the OTM Book 15 and TAC PCCG guidelines for PXO warrants. Some locations will not meet the minimum volume warrant; however, the land use of the surrounding properties, as well as pedestrian desire lines, should also be considered when evaluating a location for PXO warrant/compatibility.

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9.1.3 School treatment

Where a school zone is present, any and/or all crossing locations should be reviewed for PXO warrants and/or crossing guard warrants.

Where a school is present, but a formal school zone is not implemented, the Municipality should consider implementing a school zone with uniform speed limits.

All school zone areas should have sidewalks provided on at least one side of the road, with sidewalk provided on both sides, if possible.

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10.0 Development of Pedestrian Safety Policies

10.1 Complete Street Policies

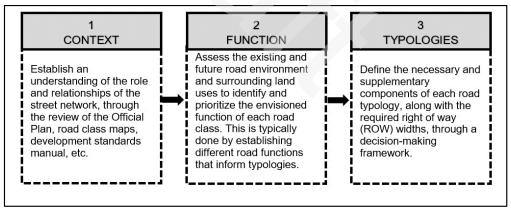
The primary objective of complete streets practices is to effectively integrate the various functions of streets through a design process. Complete streets guidelines serve as a holistic decision-making tool in ensuring that the transportation network can be equitably and safely shared between all road users (e.g., auto drivers, transit riders, cyclists, pedestrians, persons with disabilities, etc.). This approach is becoming increasingly important, given the need to accommodate a wider range of modes in support of a more sustainable and multimodal transportation network.

The Provincial Policy Statement (PPS) provides overall direction for planning and development in the Province of Ontario. The PPS provides support for a context-sensitive approach to road design, stating "transportation and land use considerations shall be integrated at all stages of the planning process".

"Complete Streets are streets that are safe for all users, regardless of age, ability, income, race, ethnicity, or mode of travel. By using a Complete Streets approach to designing road networks, we can create spaces that allow all users to thrive — not only motorists."

- The Centre for Active Transportation (TCAT)

There is an opportunity for the Municipality to re-define the street network using a complete streets approach, to assure effective integration with, and consideration for, active transportation within road right-of-way widths. A typical high-level process is shown below:



It is recommended that future updates of the Municipality's Official Plan and Development Standards reflect Complete Streets typologies and cross-sections. The goal is to achieve context sensitive approaches to ensure that transportation works are compatible with their surroundings (i.e., the environment and communities that they serve). Complete Streets' designs should ensure that safety of any road user is not compromised, or that any potential safety concerns are mitigated, where possible. The

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placement of design elements should also consider roadside safety and clear zone requirements as defined in roadside safety design references, including the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads, Ontario Ministry of Transportation Roadside Safety Manual and PIARC Road Safety Manual.

In addition, it should be noted that cross-sections do not reflect all the needs at an intersection. Intersections are shared spaces and should be designed to ensure that users are aware of one another and move predictably, to promote mobility and safety goals.

10.2 Speed Policy Review and Vision Zero

To address pedestrian safety on the road network within the Municipality, it is recommended that a Posted Speed Limit Policy be developed. The policy should identify the process to undertake a review of posted speeds and the methodology and criteria to be employed in such a review.

As noted previously, speed is one of the major factors that contributes to the severity of injuries and fatalities resulting from collisions. To move to Vision Zero, many municipalities in Ontario have moved towards the following adjustments of posted speeds:

- Reduction from 50 km/h to 40 km/h on local residential roads.
- Reduction from 40 km/h to 30 km/h in school zones and in Community Safety Zones.

It is recommended that the Municipality consider adopting Vision Zero to improve the safety of all road users. Vision Zero requires a municipality to commit to the following nine components:

- Political commitment which requires the official and public commitment of a high-ranking official, such as mayor or municipal council, to Vision Zero Goals.
- Establish a multi-disciplinary leadership team to plan the efforts for Vision Zero.
- Develop an action plan with clear targets and timeline.
- Establish inclusive and representative process and define equitable outcomes by ensuring measurable benchmarks.
- Encourage meaningful cooperation and collaboration between relevant governmental agencies and stakeholders.
- Prioritize system based approach to Vision Zero.
- Collect, analyze, utilize and share reliable data to understand the traffic safety issues.
- Promote meaningful community engagement.
- Establish a transparent process to report on the progress of action plan and performance measures.

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10.3 Transportation Association of Canada (TAC) Speed Limit Guidelines Criteria

The Transportation Association of Canada (TAC) Speed Limit Guidelines provide recommendations for setting speed limits on Canadian roads, based on factors such as road type, traffic flow, and roadside development. The guidelines aim to promote safety, efficiency and consistency in speed limit setting across the country. The TAC analysis applies weighting factors and risk scores to the following physical and operational characteristics in assessing the recommended posted speed requirements:

- · Road Classification (Local, Collector, Arterial).
- Location (Urban vs Rural).
- Type of Median (Divided vs Undivided).
- Road Type (Major vs Minor).
- Number of Lanes.
- Road geometry (horizontal).
- Road geometry (vertical).
- Average lane width.
- Roadside hazards.
- Pedestrian exposure.
- Cyclist exposure.
- · Pavement surface condition.
- Number of intersections with private driveways.
- Number of interchanges.
- On-street parking considerations.

The TAC methodology for posted speed assessment is intended to identify roads where an adjustment of posted speed may be warranted as one of the mitigation measures to improve safety along these corridors, based on the risk factors included in this methodology. It is, however, recommended that any of the roads identified for potential posted speed adjustment should be further reviewed to identify factors that may not be captured by the TAC assessment, prior to implementing the adjustment to the posted speeds in these areas. TAC recommends that a review of traffic operations and safety be conducted 6 to 12 months after the implementation of new speed limits.

In addition to the physical / operational characteristics of the road, the TAC methodology also takes into consideration the design speed of the road, in making a recommendation for the posted speed. The intent is to enhance road safety through posted speed limited that match the expectation of drivers for a given roadway and its surrounding area. It is an objective assessment based on measurable criteria.

The TAC Speed Limit Guidelines criteria should be taken into consideration in the development of a Posted Speed Limit Policy for the Municipality.

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It is recommended that the Municipality review all locations where posted speed adjustments are proposed before the implementation of such changes.

10.4 Traffic Calming Policies

10.4.1 Posted Speed, Operating Speed, Target Speed and Design Speed

Road design speeds have typically been set at 10 km/h over the posted speed in urban areas and 20 km/h over the posted speed in rural areas, with the intent that these exceedances will accommodate the operating speeds (i.e., assumed to be the 85th percentile speed, which is the speed at which 85% of the total traffic volume will not exceed). Therefore, the posted speed is aspirational and does not typically have any significant impact on modifying operating speeds (i.e., unless accompanied by enforcement). In most cases, the actual operating speed is a reflection of the speed that the motorist feels comfortable at travelling, which is informed by the physical environment (e.g., urban vs rural, road width, road alignment, etc.), environmental conditions (e.g., weather, lighting, etc.) and motorist perception of risks (e.g., pedestrian or cyclist exposure, adjacent parking, etc.). Therefore, it is important that a target speed be established for any particular road segment that not only recognizes these various factors but also attempts to achieve some level of congruity, to achieve better design / operational consistency and therefore the safest possible conditions.

10.4.2 Typical Traffic Calming Policies (TCP)

Many municipalities have established Traffic Calming Policies (TCP) to assist their responses to traffic issues that arise within their road networks. Typical TCPs are intended to meet the following primary objectives:

- Reduce the volume and speeds of motor vehicle travel, to improve safety and livability of neighbourhoods, considering the needs of all residents (i.e., pedestrians, cyclists, and motorists).
- Maintain the primary function for local roads to provide access and for collector roads to provide a balance between providing access and mobility for connections of traffic within the overall road network.
- Maintain access routes for emergency services, public transit and maintenance services.

The TCP should outline the advantages and disadvantages of the following traffic calming measures to control speeds or traffic volumes:

 Physical Speed Control Measures – speed humps, speed tables, raised intersections, traffic circles, roundabouts, chokers, realignment of intersections, curb extensions and narrowing of traffic lanes.

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- Non-Physical Speed Control Measures pavement marking to narrow lanes or as warning signs, police enforcement, radar speed signs, community safety zones and school zones.
- Volume Control Measures full or partial closure of streets, diagonal diverters at intersections and median barriers.

The TCP should also outline a systematic process to follow for studying traffic calming requirements that have been initiated by the public. The TCP may establish criteria (i.e., point ratings) that are used in the assessments to confirm the need for traffic calming. Common steps within the TCP process are: Initiation; Screening; Evaluation and Prioritization; Implementation and Monitoring. These steps are described as follows:

- Residents with traffic-related concerns are to submit a written request to the Municipality to investigate the concerns.
- It must be satisfied that all reasonable efforts have been made to address the concerns utilizing means including engineering, education and enforcement tools.
- The road must have a minimum length of 150 m and be primarily residential.
- Traffic calming on roads with restricted horizontal and / or vertical alignment (i.e., restricted sight lines) should have traffic calming measures considered in conjunction with reduced speed limits and adequate warning signs.
- Subject to the above considerations being met, the Municipality may undertake a
 speed study to further review the issue, including a review of the operating speed
 (i.e., 85th percentile speed) and the available stopping sight distance. Areas with
 operating speeds that exceed the posted speed limit by 10 km/hr., or more, are given
 further consideration.
- A weighted point system is assigned to the road based on the severity of certain road attributes, for comparison against a minimum point threshold value.
- Subject to the points threshold being met, a support petition is required by the residents in the neighbourhood affected, prior to moving forward with any remedial work
- Subject to the above being met, the selection of traffic calming measures is finalized, with additional consultation with the public and affected agencies.
- The proposed traffic calming work is subject to approval and budget allocation by Council prior to implementation of the measures.

Traffic calming measures should be context-sensitive, recognizing that each road will have its unique operational and public safety needs, which require specific mitigation measures. It is important to adequately identify the causative factors that have resulted in the speeding issues, so that the most appropriate strategy can be developed to address the real problems, with consideration to engineering design issues of the road and road network, operational issues, enforcement, education and traffic calming measures. Consideration should recognize the implications of implementing traffic

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calming measures, such as its potential to divert traffic and related issues to other travel routes, impact on emergency services and impacts on services (e.g., snow plowing).

The design of new road networks and subdivisions should include features that maintain operating speeds below target thresholds, thus minimizing future expenditures of the Municipality's resources to reactively address speed issues. Standardizing a proactive approach for a new development design should be specific, yet easy to understand and apply. Using a standardized set of design principles, new subdivisions may have built-in speed reducing features that will ensure vehicle speeds remain below acceptable speeding thresholds and reduce, or even eliminate, the need for expensive retrofits.

It is recommended that the Municipality formulate a Traffic Calming Policy for roads under its jurisdiction.

10.5 Cycling Safety Considerations

This Pedestrian Safety Study has its main focus on the improvement of the safety for pedestrian travel within the Municipality. However, cyclist safety should also be a consideration in establishing appropriate traffic operations and infrastructure within road corridors.as well as for crossing such corridors.

The Grey County Cycling and Trails Master Plan (October 2020) identifies a preferred Cycling and Trails Network within the County. The Municipality should ensure that the designs for trail crossings of municipal roads have adequate traffic controls, and that adequate cycling infrastructure is available on local roads to connect to the Grey County trail network. Cycling infrastructure should be identified on the Municipality's local road network to connect to points of interest (e.g., schools, community centres etc.). All Cycling infrastructure should be designed to meet to meet the guidelines in Book 18 (Cycling Facilities) of the Ontario Traffic Manual. An overall Active Transportation Strategy should be developed to identify the needs and opportunities, including:

- · Road user categories and needs and facility types.
- Identification of missing links to address continuity gaps.
- Network development considerations.
- Policies for new development and infrastructure.

While projected traffic and posted speed limits provide guidance, it is the actual volumes and operating speeds along the corridor that affect safety and comfort for cyclists. As such, traffic counts and surveyed 85th percentile operating speeds better inform the design condition and are typically used instead of posted speeds to assess cycling facilities, especially in rural areas.

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10.6 Active Transportation Development Policies

Opportunities will exist for the planning and implementation of active transportation infrastructure through the development review process. As such, guiding policies will assist in establishing effective pedestrian and cycling connections. The following policies are proposed:

- The construction and reconstruction of new streets will apply complete streets design
 principles to support the integration of pedestrian and bicycle users, and enhanced
 streetscaping.
- Provisioning for safe and convenient active transportation facilities such as sidewalks, cycling infrastructure trails, and bicycle parking for all development applications.
- Establishing site plan control requirements to improve pedestrian and cycling connectivity at, and between, development sites.
- Building safe active transportation facilities within, and that connect between, settlement areas and rural settlement areas.
- Designing sidewalks and cycling facilities to remain consistent with Accessibility for Ontarians with Disabilities Act standards to achieve a barrier-free network accessible for all ages and abilities.
- Providing a degree of separation for bicycle facilities, where applicable.
- Provisioning for active transportation facilities as part of development applications, and when designing and constructing/reconstructing roads, bridges, intersections, etc., while also considering the impact to the character of the community and surrounding land uses and design.
- Adopting requirements for minimum bicycle parking spaces, bicycle storage facilities and other active transportation amenities.
- Ensuring that active transportation facilities meet or exceed industry safety standards, and are supported through appropriate design, signage and consistent safety enforcement.

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11.0 Conclusion and Recommendations

It is our recommendation that the Municipality take the location-specific recommendations into consideration and find ways to implement such improvements, to enhance pedestrian safety in other areas with similar pedestrian conditions. To align the Municipality's current practice as well as their standards with industry best practices, it is our recommendation that the Municipality develop a speed limit policy, traffic calming policy and active transportation policy, with the goal of providing for safe pedestrian operations and moving towards a Complete Streets system that supports Vision Zero principles.

The resulting conclusions and recommendations of the crossing guard / PXO study work includes:

- Beavercrest Community School Consider implementing a crossing guard at the
 existing PXO on Grey Road 12; Implement a Community Safety Zone on Grey Road
 12 in the area of the school; Monitor and enforce speeds on Grey Road 12; Monitor
 the number of safe gaps for crossing at Edith Avenue / Grey Road 12 and consider
 implementing a PXO at the intersection, if the number of safe gaps meet the
 minimum threshold established by the crossing guard criteria.
- Grey Highlands Secondary School Undertake additional study to confirm the need for a PXO crossing of Highway 10, once road construction is completed in this area.
- MacPhail Memorial Elementary School: Monitor traffic operations at the all-way stop control intersections on Campbell Street at Hill Street and Alice Street; Undertake additional study to confirm crossing guard/PXO requirements at the intersections of Campbell Street / Toronto Road (Highway 10) and Elizabeth Street / Spring Street / Toronto Road (Highway 10), once road construction is completed in this area.
- Osprey Central Elementary School: Monitor and enforce posted speeds; Install radar speed signs, if required.

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The primary conclusions and recommendations of this Pedestrian Safety Study are as follows:

- Traffic speed is one of the most significant parameters affecting whether pedestrian
 collisions result in serious injury or death and therefore the Municipality is
 encouraged to adopt policies and standards that are consistent with Vision Zero
 criteria and Complete Streets design.
- It is recommended that the Municipality review the posted speeds within its road network, with a view to adjusting posted speeds, where required, to meet target speeds based on operational requirements. It is recommended that a Posted Speed Limit Policy be developed by the Municipality that outlines the process, methodology and criteria for considering adjustments to requests for adjustments to posted speeds.
- It is recommended that future comprehensive update of the Official Plan, and/or the Municipality's standards, include policies and strategies to enhance pedestrian safety, such as provision of sufficient pedestrian/cyclist infrastructure and traffic calming measures.
- It is recommended that the Municipality update its policies and standards to develop
 a prioritization strategy to remove gaps in the sidewalk network and to increase the
 sidewalks that are maintained in the winter, taking into consideration the costs and
 risks associated with current policies and strategies.
- Maintenance of active transportation facilities should meet the requirements set out in the Provincial Minimum Maintenance Standards (MMS) (Ontario Regulation 239/02, as amended by Ontario Regulation 47/13).
- It is recommended that the Municipality develop pedestrian policies within an Active Transportation and Trails Master Plan.
- It is recommended that the Municipality work with schools to assess safe routes to school and to implement the required infrastructure and controls for such routes.
- It is recommended that the Municipality implement the crossing guard / PXO
 recommendations outlined in this study, including the completion of additional study
 work, where required, once road construction affecting the Flesherton area has been
 completed.
- It is recommended that the Municipality and/or County proactively monitor traffic
 operations (i.e., vehicular, pedestrian and cyclist) and collision rates at the signalized
 intersections and trail crossings in the overall road network in Grey Highlands, to
 ensure that safe pedestrian movements are being adequately accommodated.
- It is recommended that the Municipality implement a regular traffic monitoring program (i.e., traffic volumes and speeds) to proactively identify areas where pedestrian safety may be a concern. A number of areas have been identified in this Study for traffic monitoring.

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- Any areas that are designated as a Community Safety Zone (CSZ) in urban areas should have the speed limit reduced to 40 km/h, since this is a reasonable target speed in such areas CSZ in rural hamlets may have 40 km/h or 50 km/h posted speeds, depending on the sensitivity of the adjacent development and availability of appropriate active transportation facilities. The speed limits through CSZs should be consistent, respond to a need that is recognizable by motorists, and be regularly enforced, to improve speed compliance in these areas. Where CSZs have been established in areas where the motorist does not recognize the need for such controls (e.g., in rural areas or through isolated settlements that have a streetscape that is rural in appearance) their impact on reducing speeds or increasing motorist vigilance may be very limited, and result in an impractical level of enforcement being required to be effective. It is recommended that the Municipality monitor the effectiveness of existing, or new, CSZ zones to moderate traffic speeds and/or improve safety. The implementation of Automatic Speed Enforcement (ASE) in the future may increase the effectiveness of CSZ controls.
- In areas where sufficient active transportation facilities are not currently available, the Municipality should further investigate and budget to implement satisfactory active transportation facilities in such areas, where possible.
- Where street illumination may be an issue, and development and/or pedestrian
 activity is expected, the Municipality should further investigate and budget to
 implement satisfactory streetlights.
- Where required, crosswalks at intersections (signalized or unsignalized) should be converted to ladder crosswalk markings, rather than using the standard markings.
- If pedestrian activity is present at signalized intersections, and pedestrian safety issues have been identified as a concern, the Municipality should investigate the possibility of implementing leading pedestrian intervals within the signal cycle.
- To minimize pedestrian crossing issues at signalized intersections, the Municipality should review visibility at the crossing and adjust the location of the stop bars, if possible, to minimize turning speeds, while still maintaining any required specifications to accommodate swept paths for design vehicles.
- Where uncontrolled crossings are considered for upgrading to pedestrian crossover (PXO) controls, it is recommended that the upgrades meet the guidelines set out in the Ontario Transportation Manual (OTM) Book 15 (Pedestrian Crossings) and the Pedestrian Crossing Control Guide, PCCG (Transportation Association of Canada. TAC).
- The pedestrian signage on all roads should be reviewed and replaced / upgraded, where required, to meet the most recent requirements set out in the Ontario Traffic Manual and related Acts and Regulations.
- Where a school is present, but a formal school zone is not implemented, the Municipality should implement a school zone with uniform speed limits within the catchment area.

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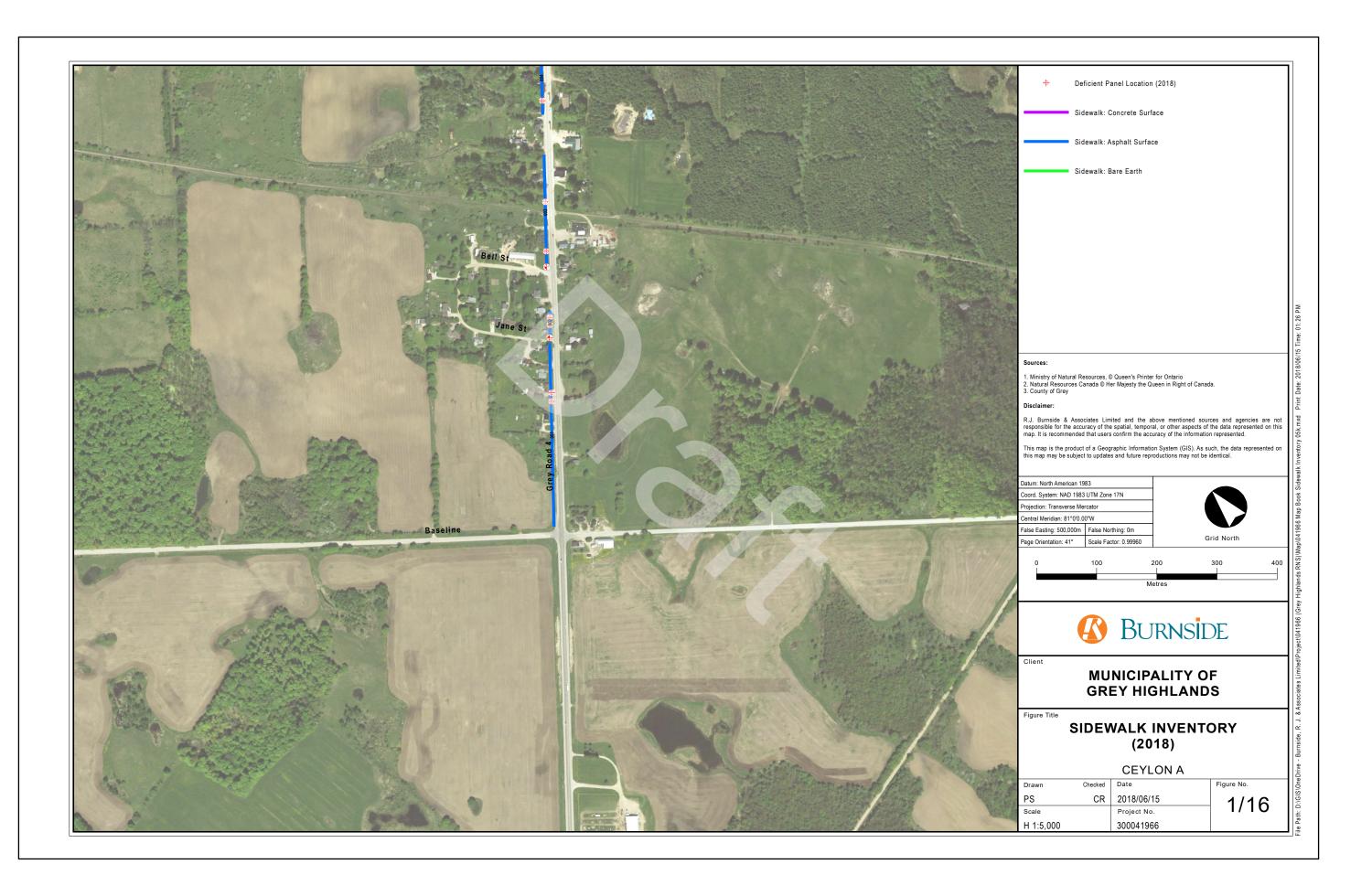
- All school zone areas should have sidewalks provided on at least one side of the road, with sidewalk provided on both sides if possible.
- Detailed review of pedestrian movements at trailhead parking areas has not been included in this Study, however, should be monitored regularly to confirm if there are pedestrian safety issues in those areas.
- The Municipality should complete a review of the available pedestrian infrastructure in the overall area and investigate ways to implement satisfactory active transportation facilities, where required and where feasible.
- Future plans for cycling facilities through the secondary settlements should be considered for integration with improvements to pedestrian facilities in those areas.
- Traffic signals should be reviewed, with signal timing and intersection designs upgraded to improve safety, where required.
- Pedestrian crossovers (PXOs) should be considered for trail crossings having significant pedestrian traffic, as well as in areas with significant school pedestrian traffic.
- To align the Municipality's current practice, as well as their municipal standards, with industry best practices, it is our recommendation that the Municipality develop a posted speed limit policy, traffic calming policy and active transportation policy, with the goal of providing for safe pedestrian operations and moving towards a Complete Streets system that supports Vision Zero principles.

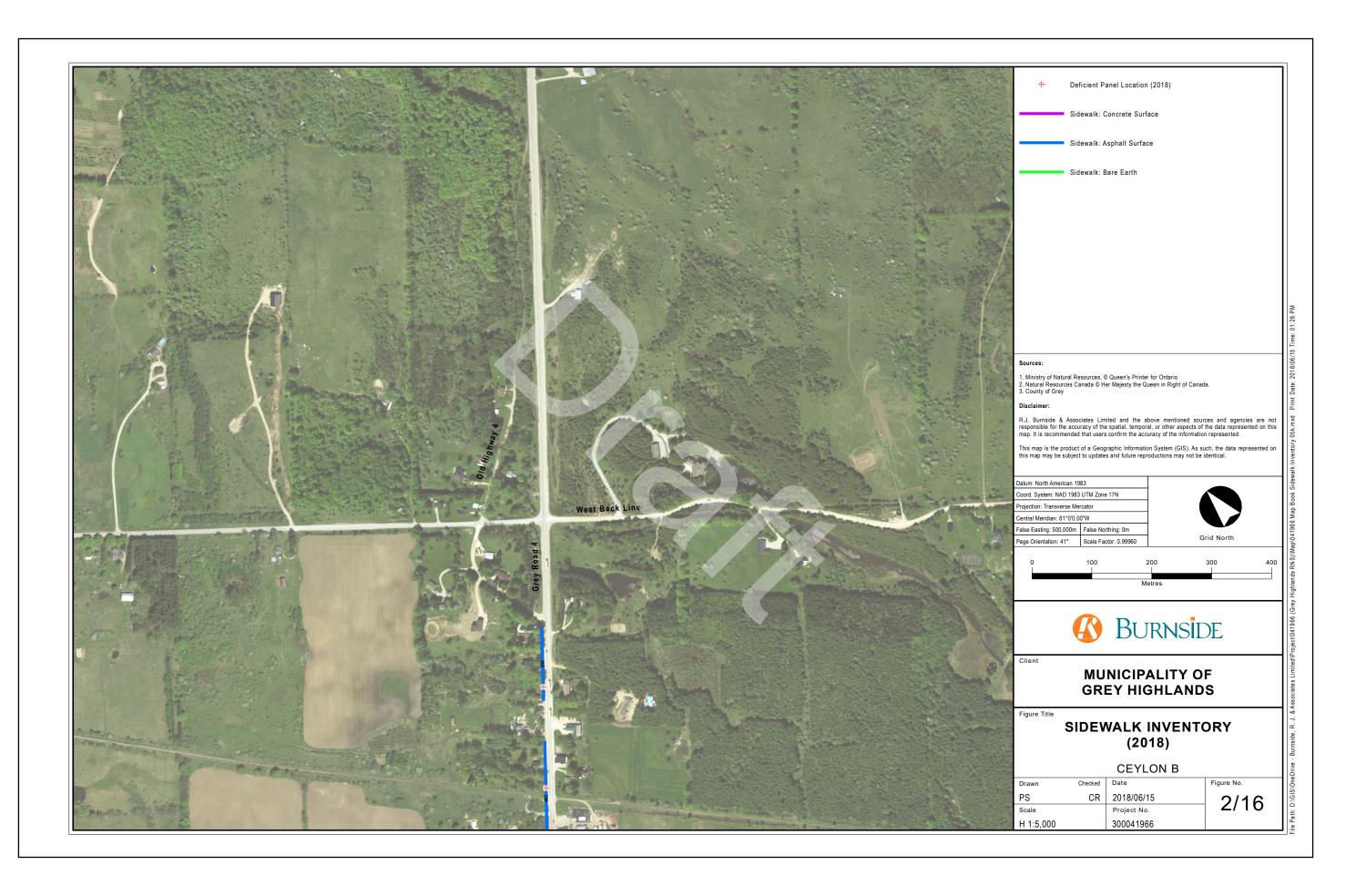
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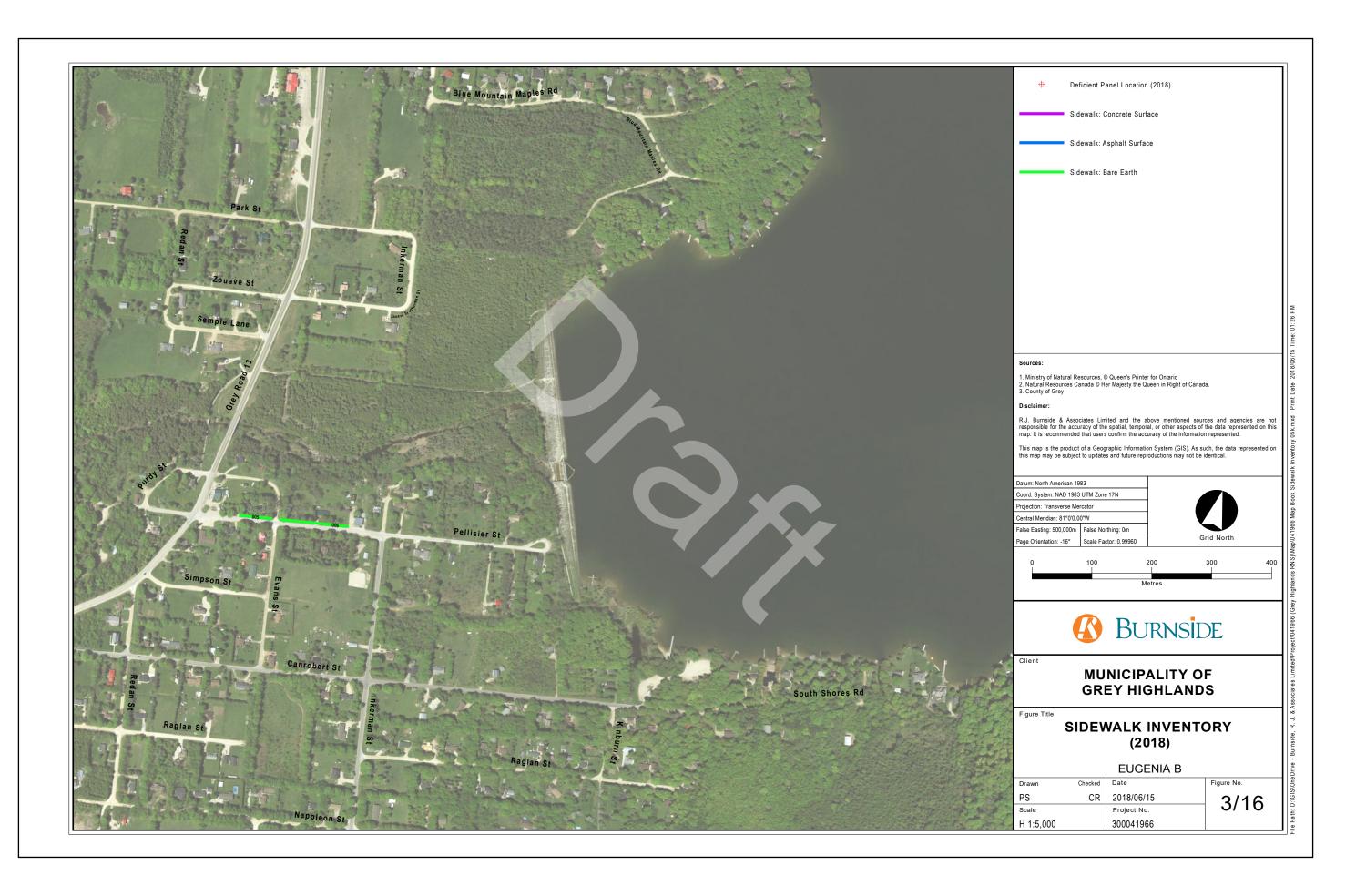


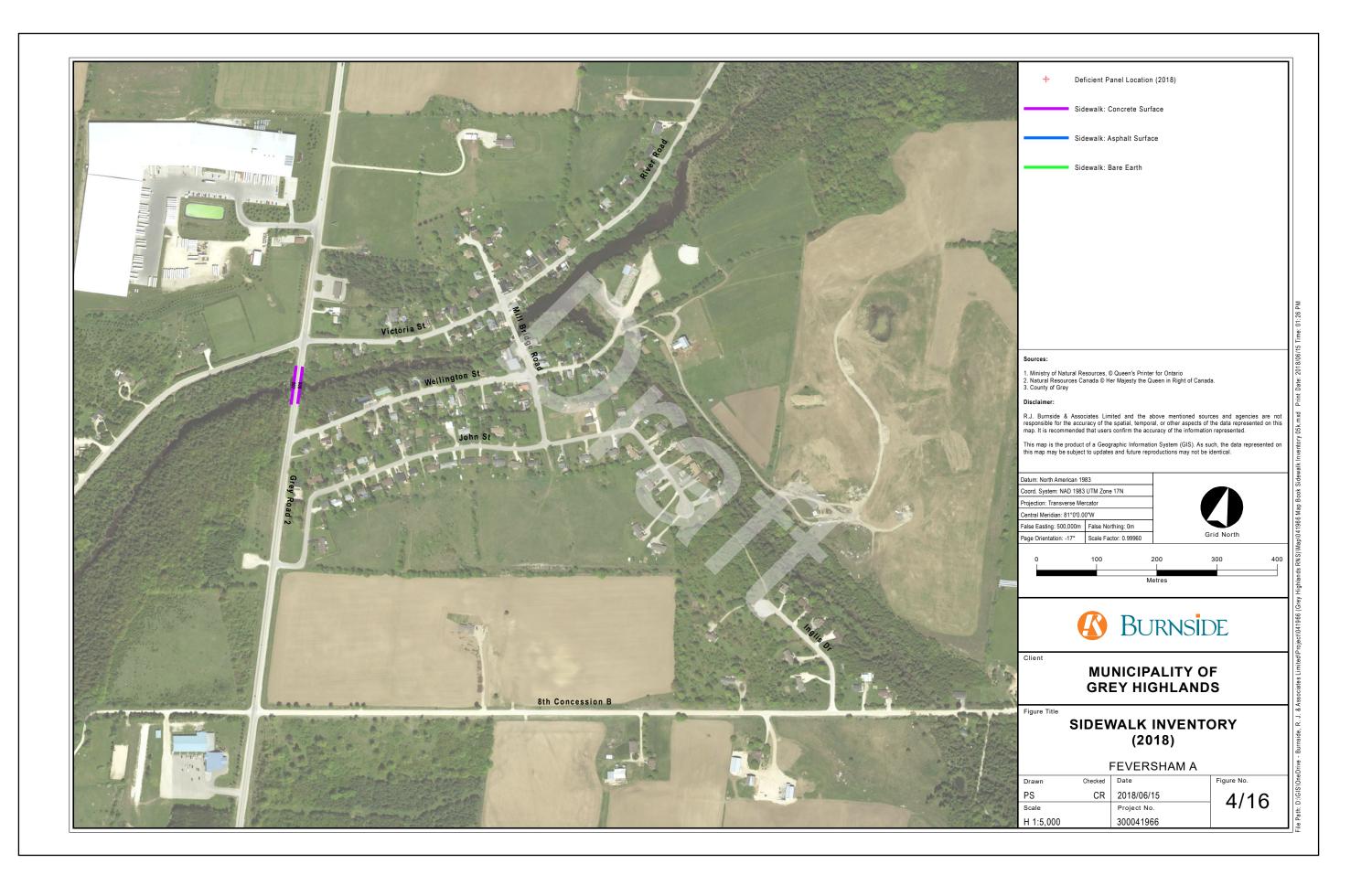
Appendix A

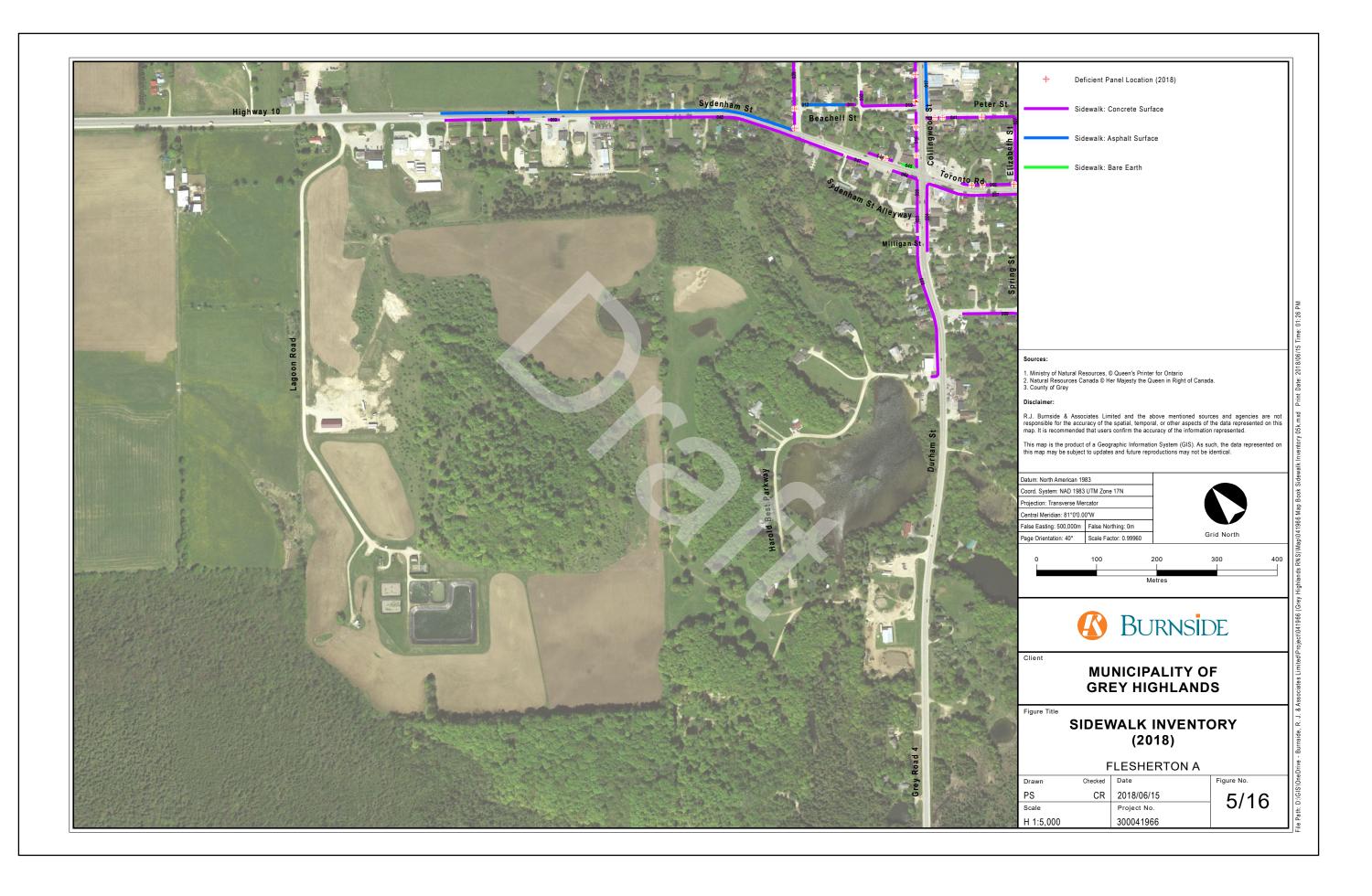
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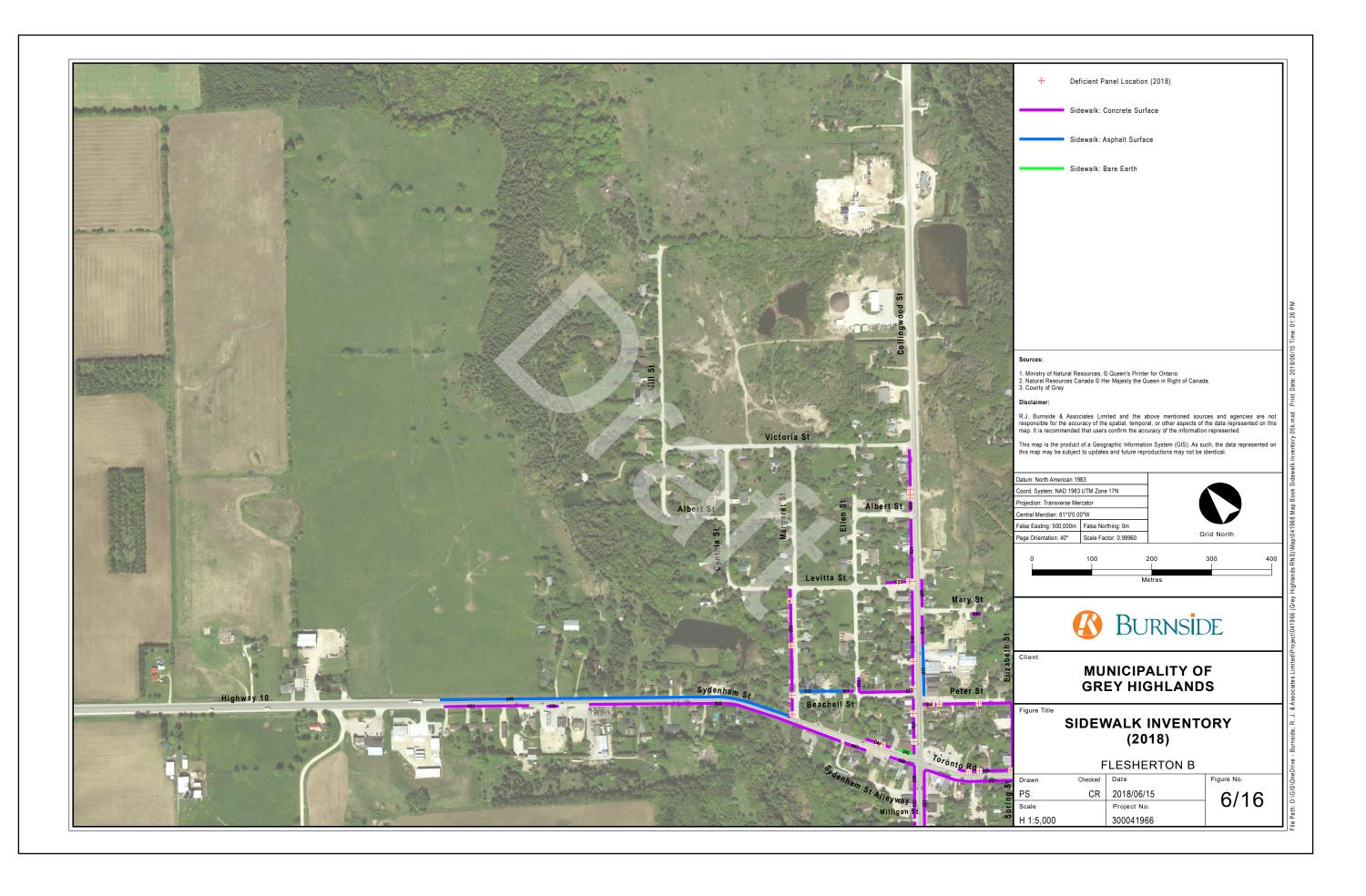


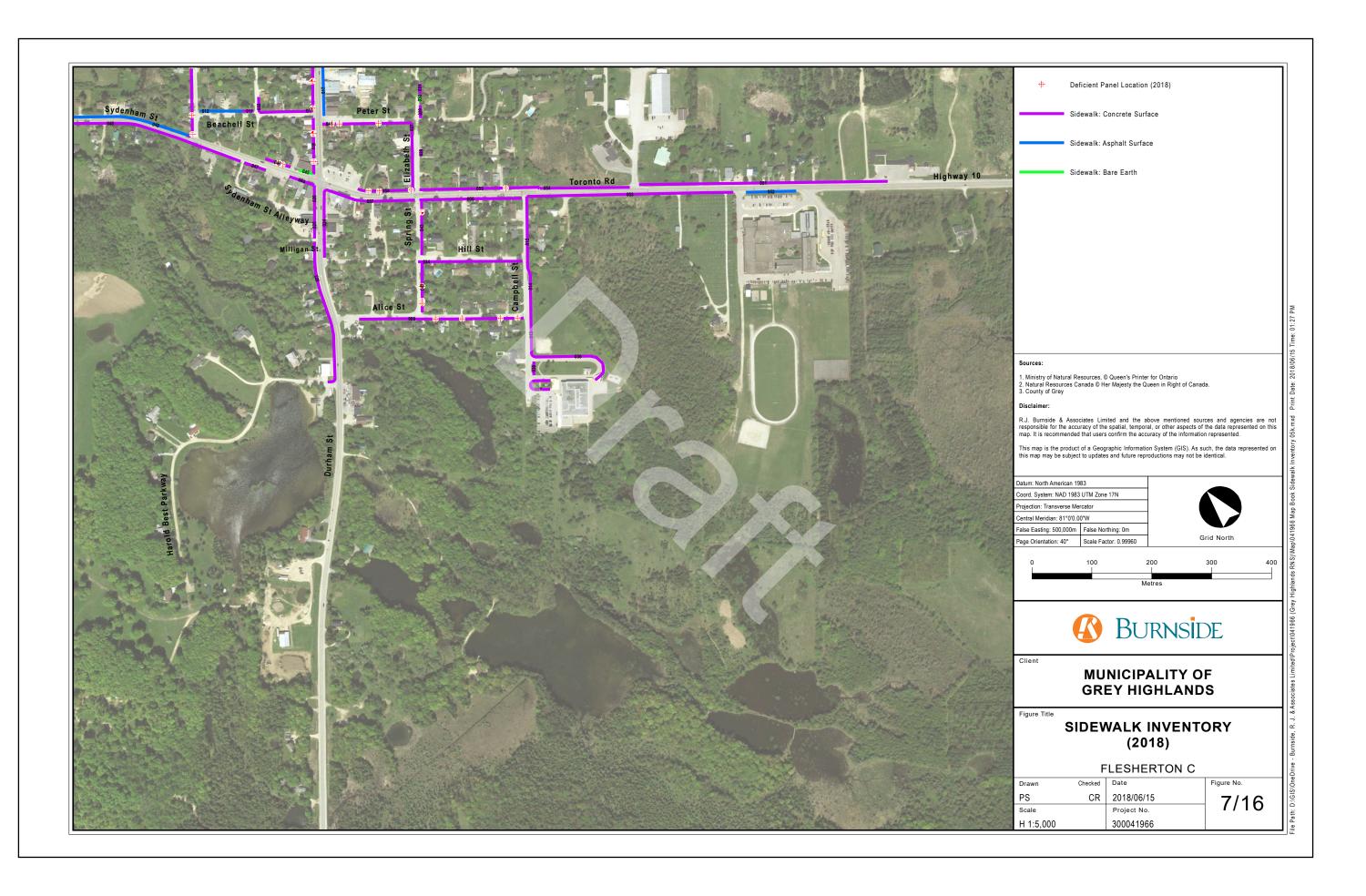


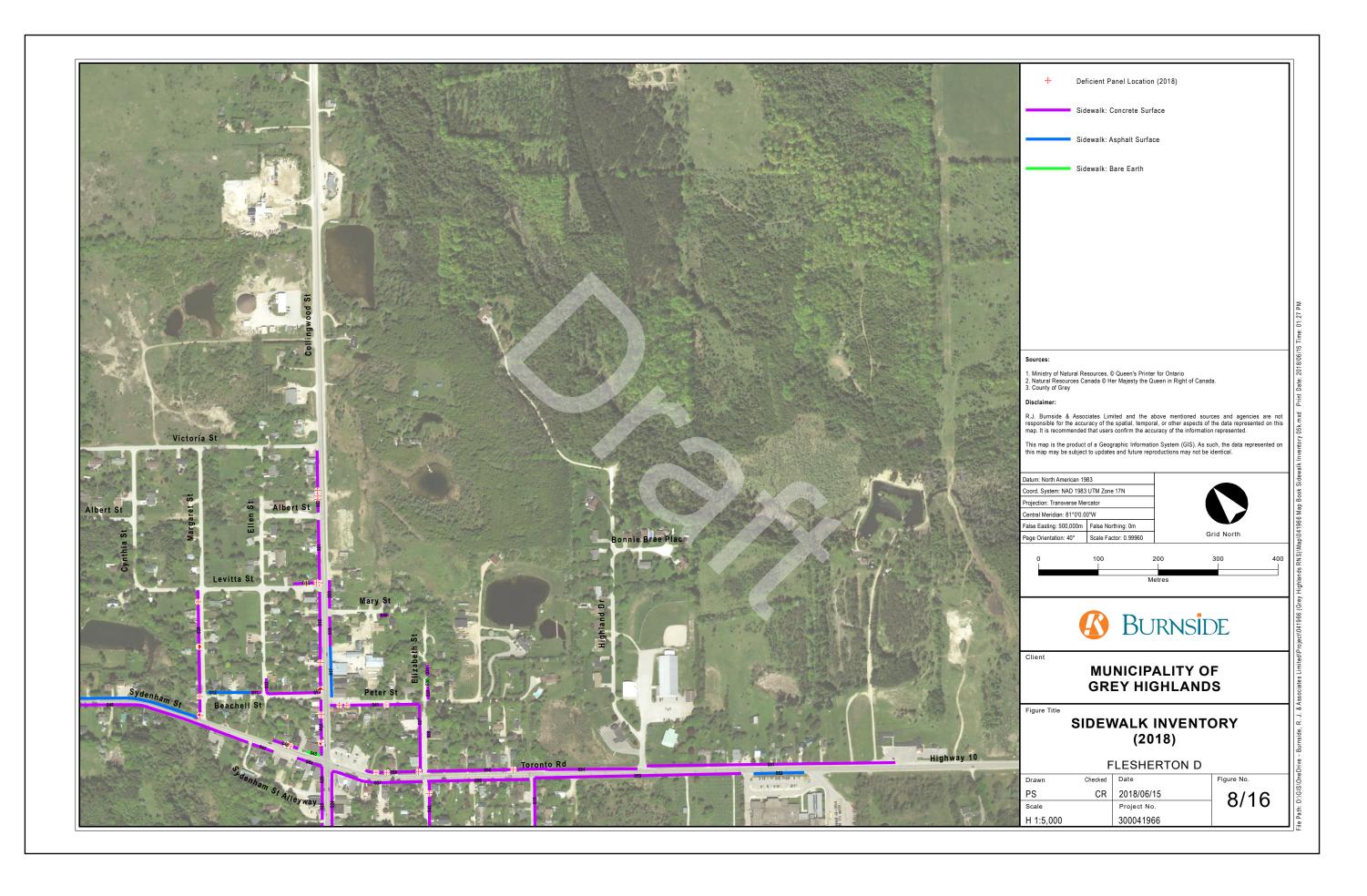


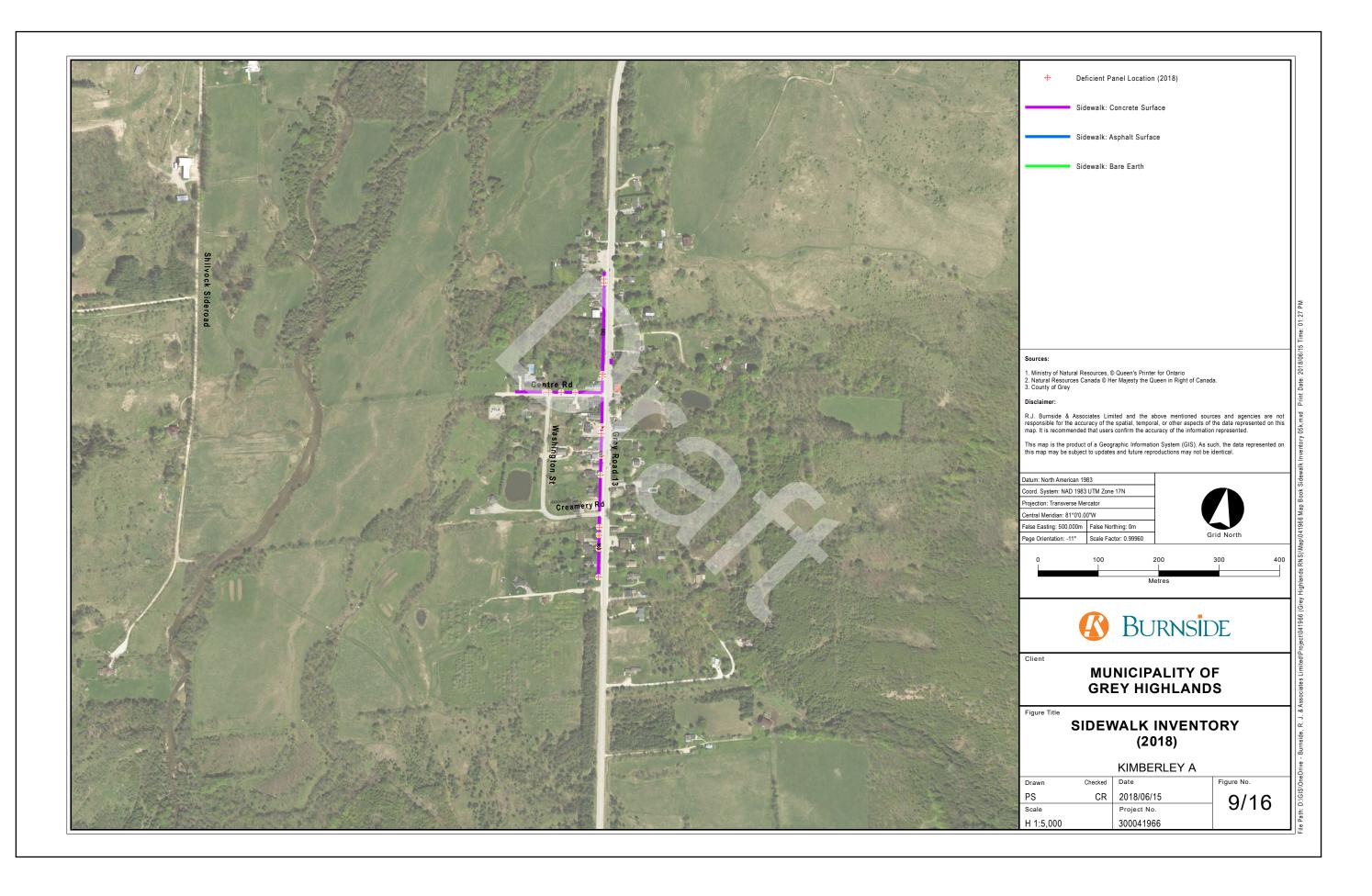


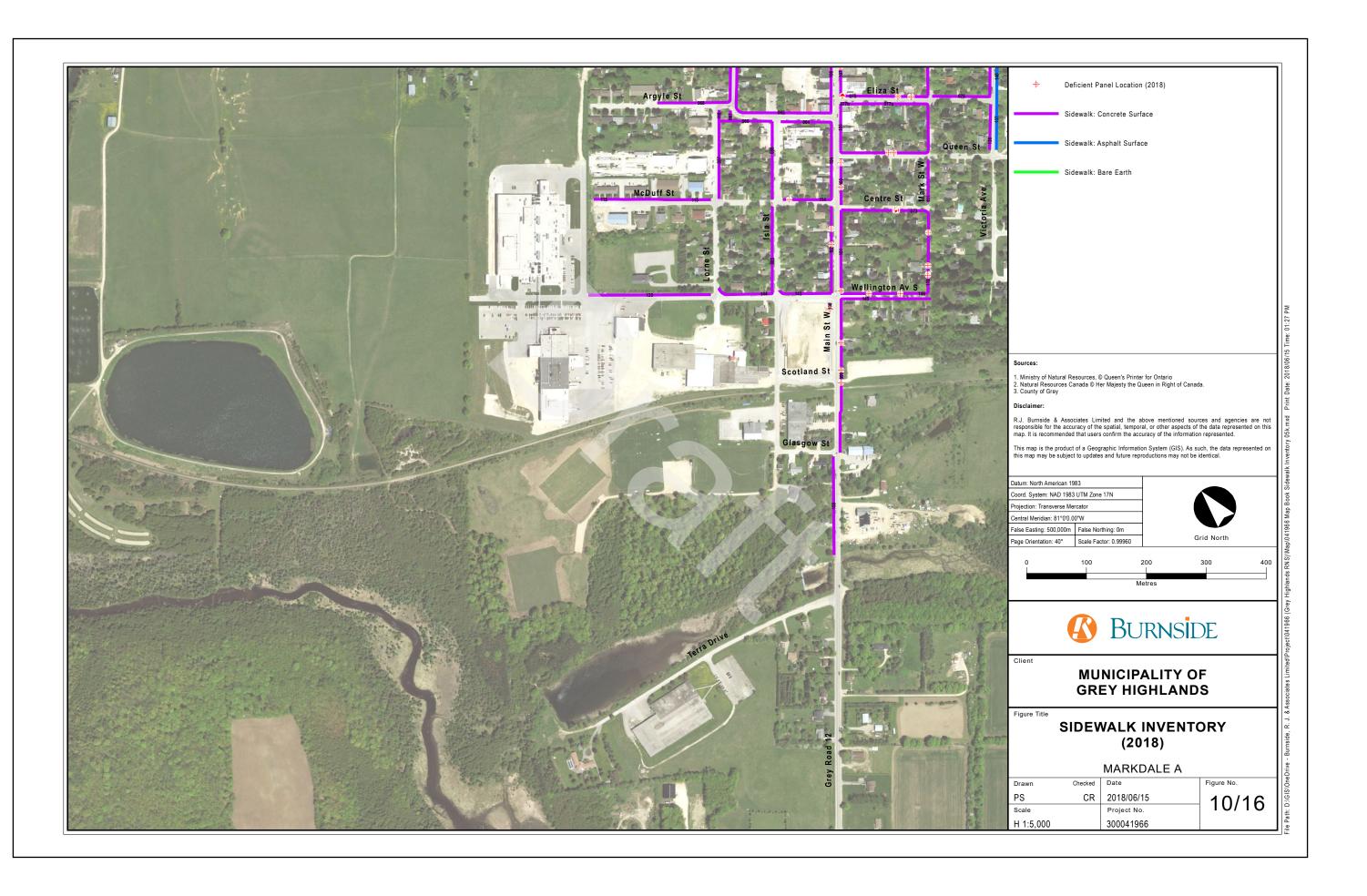


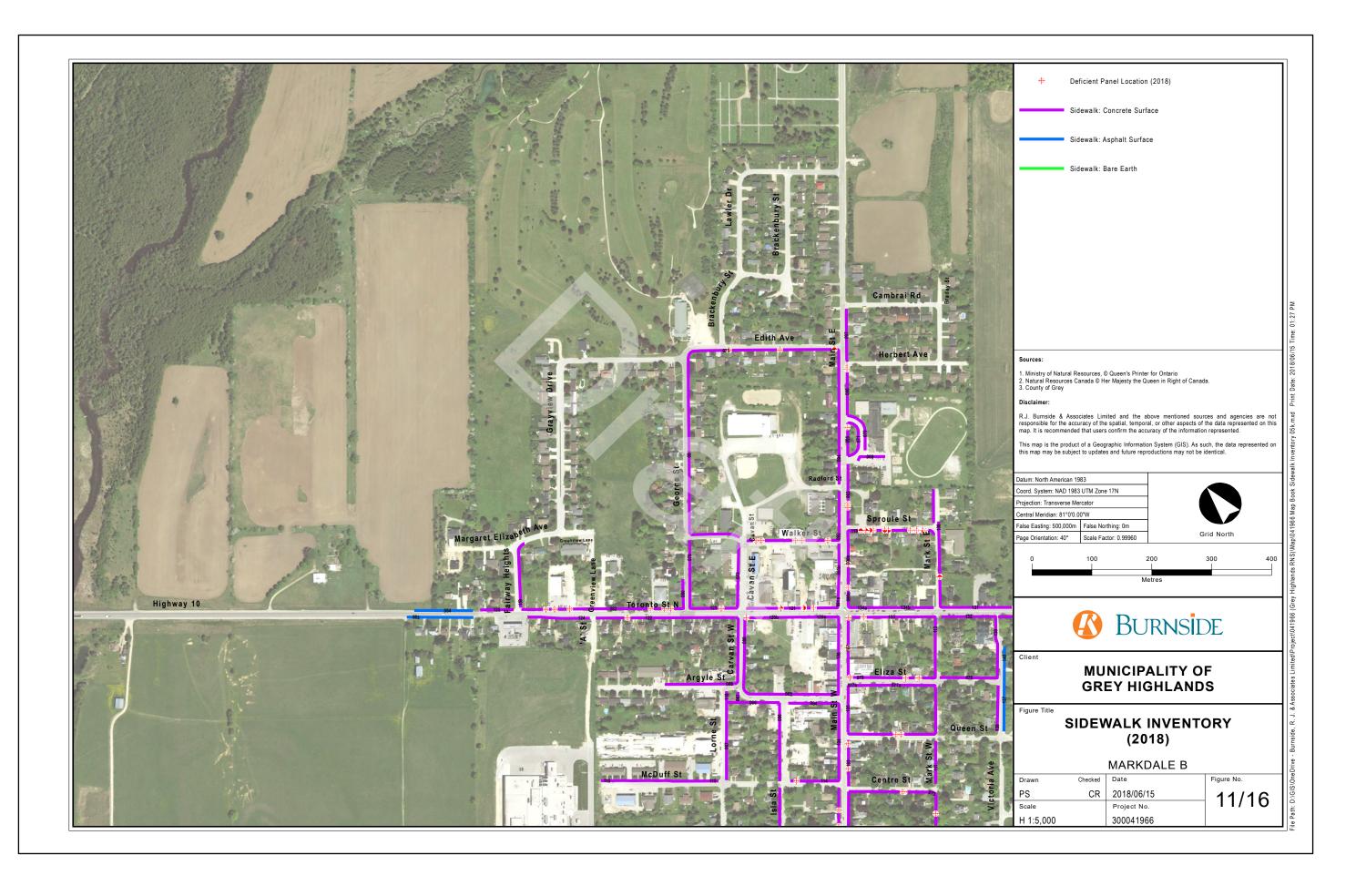


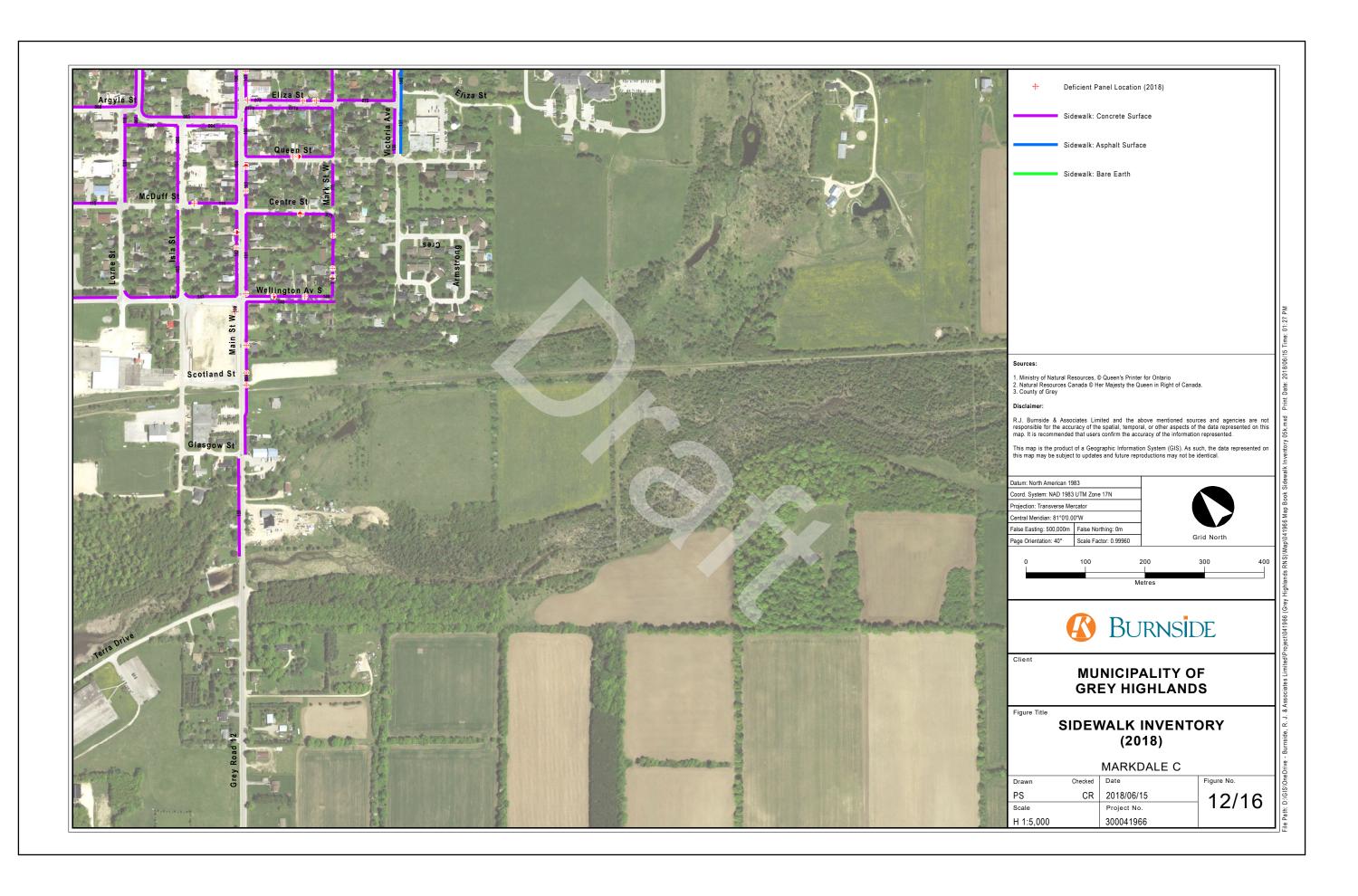


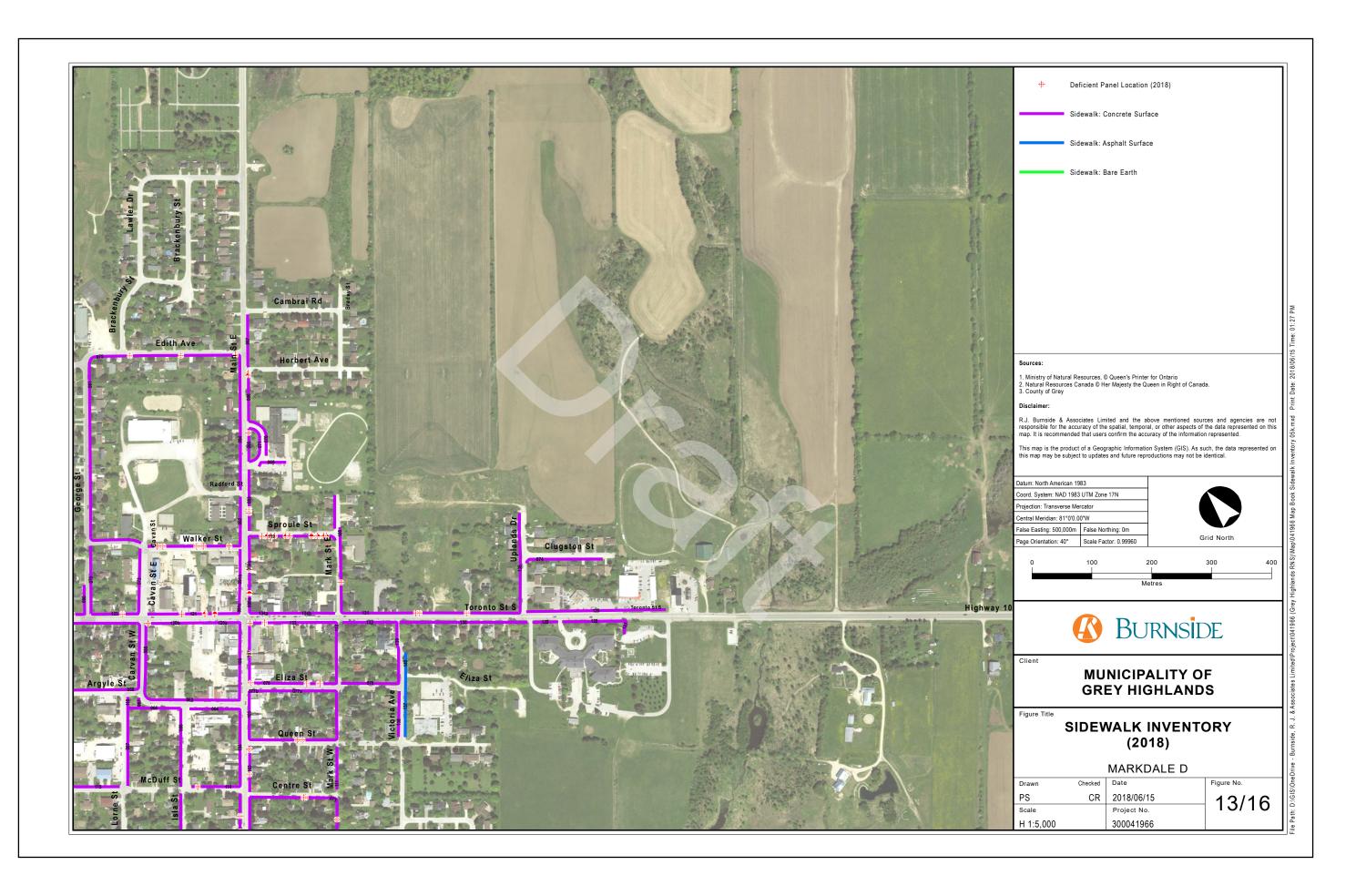


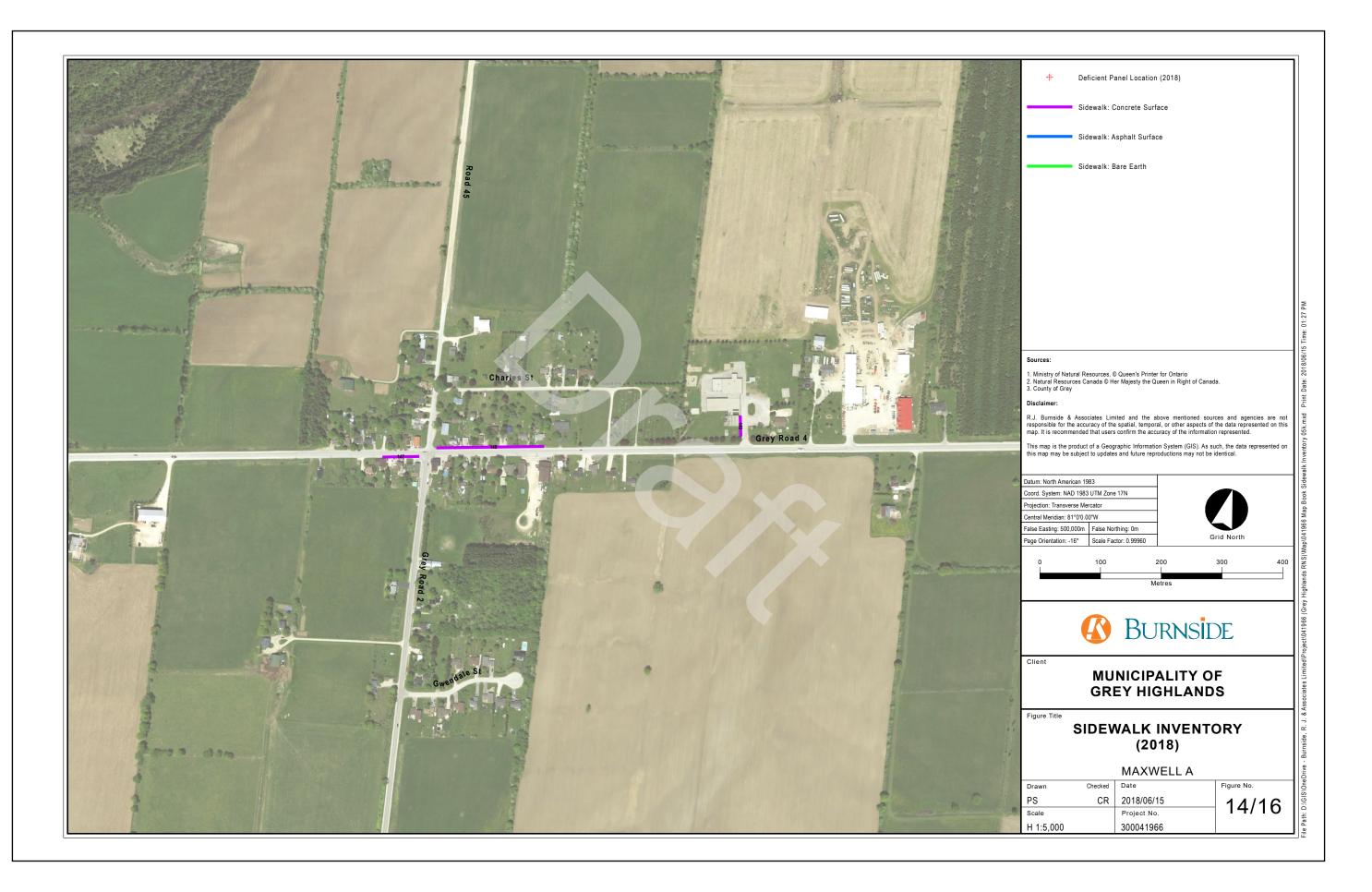


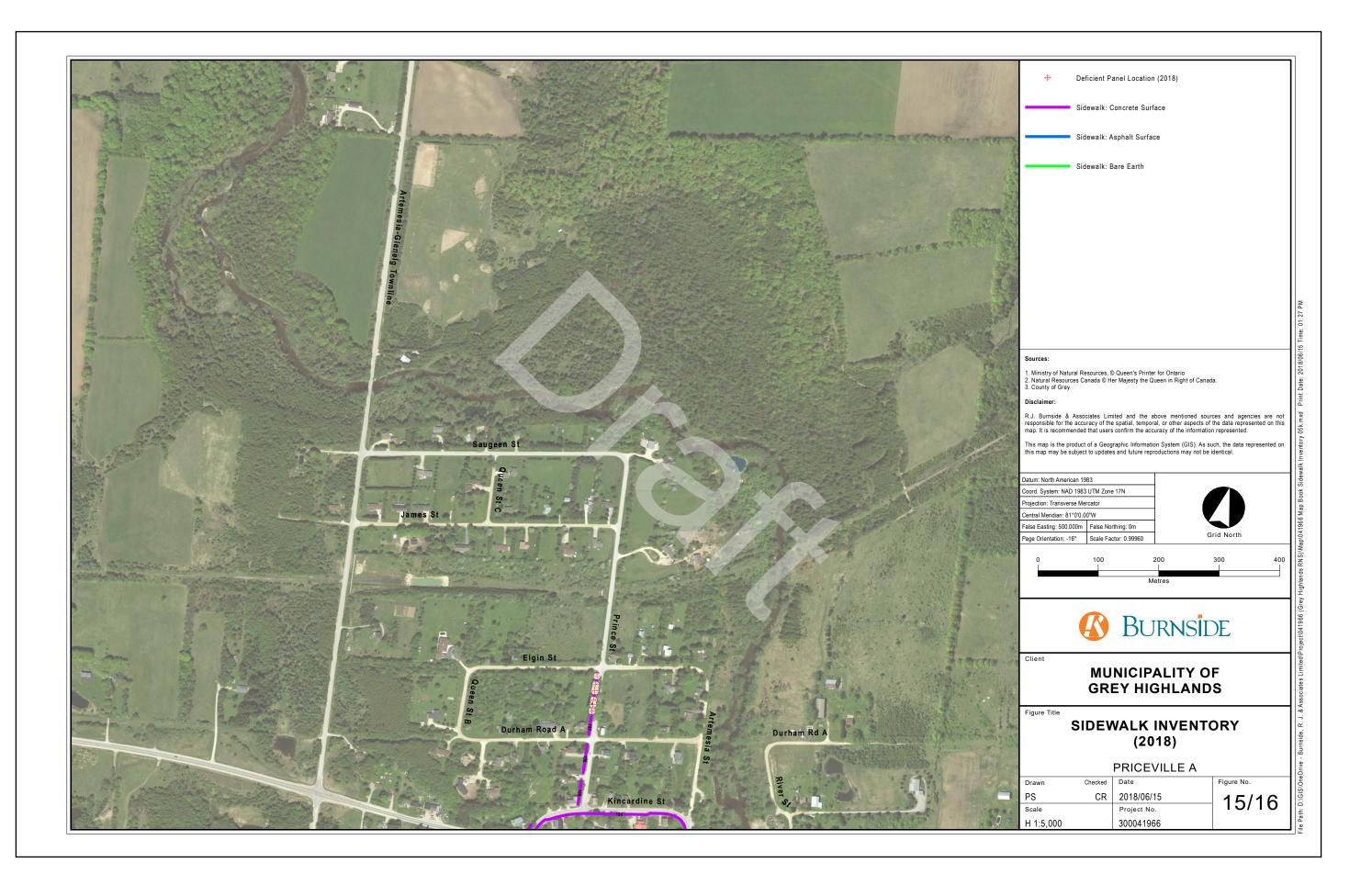


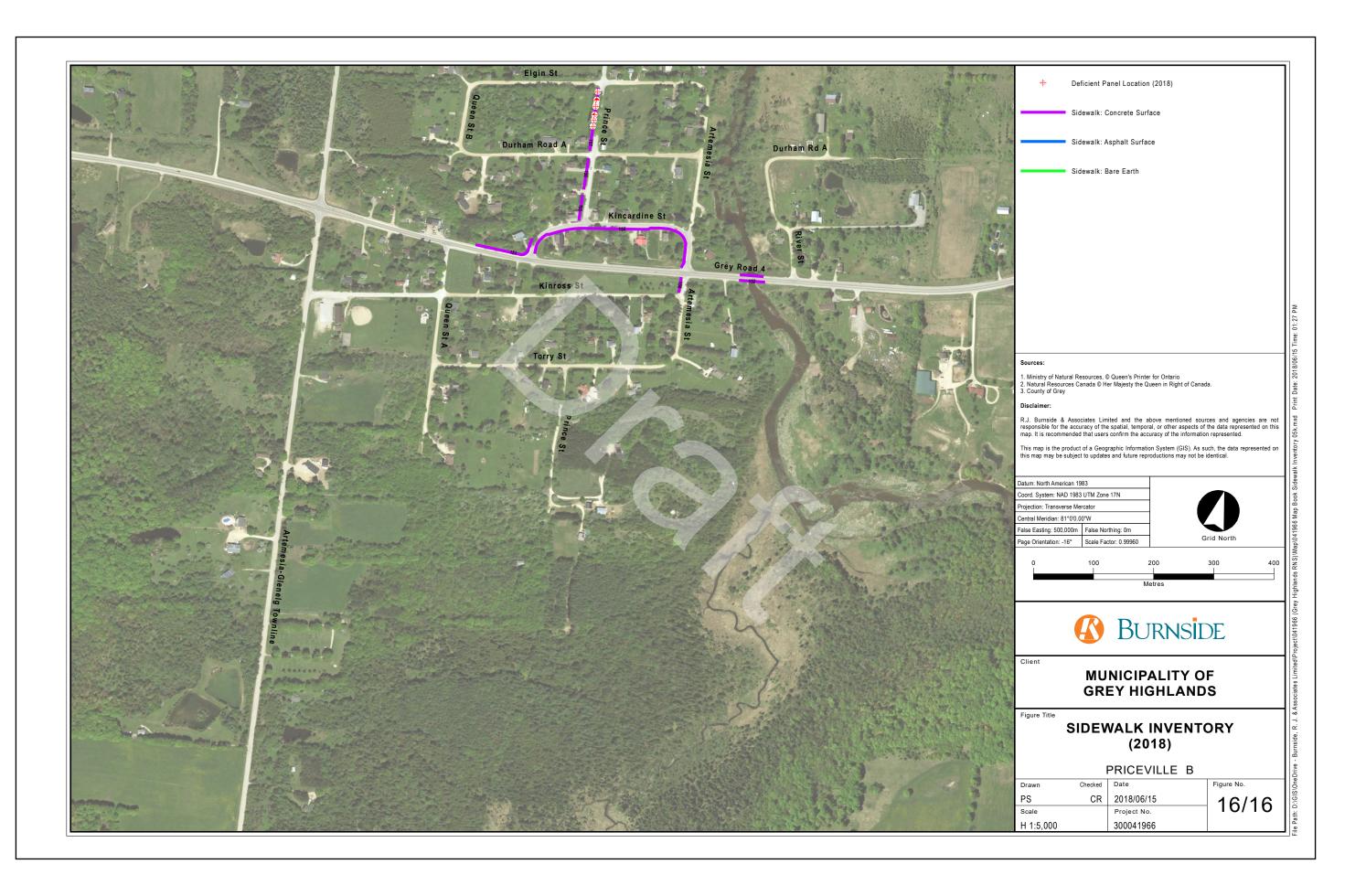














Appendix B

Mapping of Points of Interest Generating Pedestrian and Cyclist Traffic

