APPENDIX A
WATERSHED REPORT CARD

WHAT ARE WE DOING?

Grey Sauble Conservation (GSC) staff monitor the health of our watershed by collecting data on environmental indicators

- Surface water samples at 27 locations are collected 8 times each year.
- As part of the Biological Monitoring and Assessment Program (BioMAP), benthic samples from 30 long-term monitoring sites are collected.
- Over 5,000 stream crossings have important water quality and quantity information updated by staff and volunteers, which includes stream crossing type and size, flow, water clarity, and the presence of fish.
- Over 900 sites have been classified by water temperature during warm summer days in order to assess watershed health and classify the system as cold water, cool water, or warm water.

GSC's programs and services contribute to the protection and improvement of watershed health

- To date close to 4 million trees have been planted across our watershed.
- Supporting development in appropriate areas and reducing impacts through environmental planning.
- Landowners and partners have been engaged to help restore and protect natural features and water quality through GSC's stewardship efforts.

HOW CAN WE ENHANCE THE WATERSHED?

What Can You Do?

Be a Watershed Steward!

- Plant native species, particularly trees and shrubs along streams, lakes, rivers, and ponds.
- Learn about invasive species and how you can prevent them from spreading.
- Decommission unused wells, as they provide a direct pathway to our groundwater systems.
- Inspect and pump out your septic system every three to five years.
- Do not dump anything down roadside catch basins because they are connected directly to local waterbodies.
- Conserve water by using a rain barrel and low-flow household products.
- Keep livestock out of waterways, employ cover crops to reduce erosion.
- Reduce or eliminate the use of chemicals, pesticides, and fertilizers. Do not let them get into our waterways.
- Keep recreational activities clean! Have your boat motor checked for leaks.

What Can Your Community Do?

- Consider and promote low impact development in your municipality.
- Support local sub-watershed studies.
- Support local initiatives to monitor water quality and quantity.

*Do you have questions not answered by this summary document? Visit **greysauble.on.ca** for more information:*

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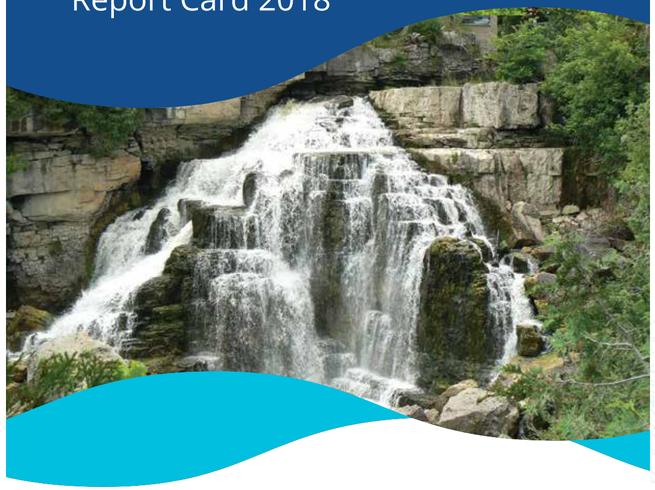
The Watershed Report Card is available online and in other formats upon request.

Grey Sauble

WATERSHED

Report Card 2018



Watershed Checkup

Grey Sauble Conservation has prepared this report card as a summary of the state of your forests, wetlands, and water resources.

Member of Conservation Ontario

WHERE ARE WE?

What is a Watershed?

A watershed is an area of land drained by a creek or stream. Similar to the branch of a tree, creeks empty into streams, which then empty into larger streams, eventually forming one main trunk. Within this system, everything is connected to everything else. In other words, actions which take place at the top of the system can and do affect results downstream.

Why Measure?

Measuring helps us better understand our watershed. It helps us to focus our efforts where they are needed most and track progress. It also helps us to identify healthy and ecologically important areas that require protection or enhancement. We measured:

- Surface Water Quality
- Forest Conditions
- Wetland Conditions

GRADING

A	Excellent
B	Good
C	Fair
D	Poor
F	Very Poor
	Insufficient Data

What is a watershed report card?

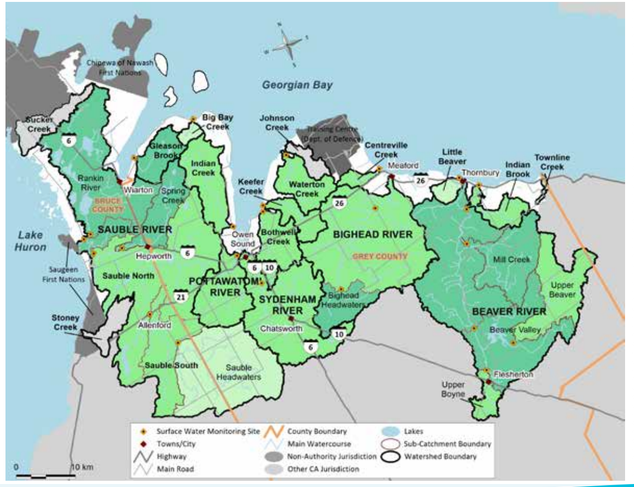
Ontario's Conservation Authorities report on watershed conditions every five years. The watershed report cards use Conservation Ontario guidelines and standards developed by Conservation Authorities and their partners.

SURFACE WATER QUALITY

Total phosphorus and Escherichia coli (bacteria) were measured. The type and number of Benthic invertebrates (small aquatic animals living in the sediment) were also identified. The results indicate pollution levels and stream health as measures of water quality. High surface water quality supports safe drinking water and provides social, economic and health benefits to people and animals.

What Did we Find?

- Watersheds score very well with most watersheds achieving a grade of Excellent or Good.
- Watersheds achieving a lower grade typically have poor forest cover grades as well, specifically poor treed riparian areas along watercourses.

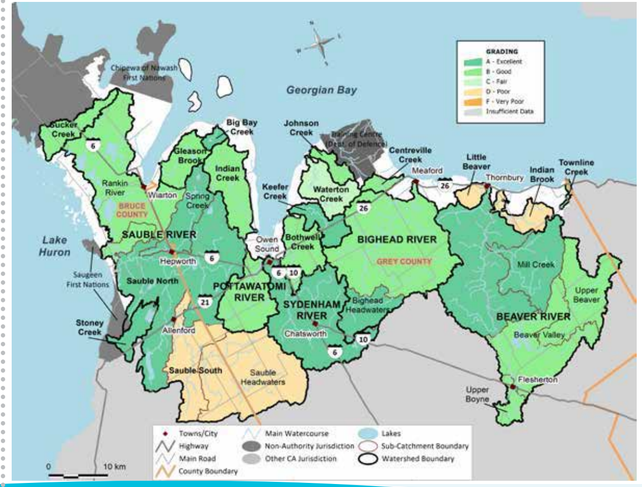


FOREST CONDITIONS

The percentages of forest cover, forest interior, and stream edges forested were measured. Forest interior provides habitat for many species that don't survive in smaller patches of trees. Forested stream edges cool water for native fish, prevent erosion and reduce contaminants entering streams.

What Did we Find?

- Grades were generally Good to Excellent.
- In areas with more intensive agriculture, grades were lower.
- Forest cover grades take time to improve since after trees are planted it may take years before they form a tree canopy.

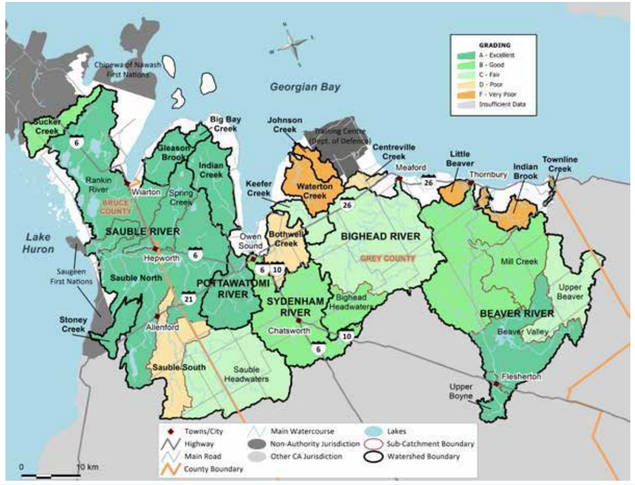


WETLAND CONDITIONS

The percentage of wetland cover was measured. Wetlands have large biodiversity and mitigate both flooding and droughts downstream.

What Did we Find?

- Most of the larger watersheds score very well.
- Some of the smaller and steeper watersheds had poor wetland coverage.
- Drainage improvements for agriculture likely has the greatest impact on wetland coverage.
- It is important to maintain our current wetlands as it is very difficult to increase wetland coverage.



For more details about the information found in these maps, visit greysauble.on.ca or contact us. You can find our contact information on the back panel.

Watershed Features

Grey Sauble Conservation consists of 5 major watersheds, and many smaller watersheds that outlet directly to Lake Huron and Georgian Bay. The topography includes sandy beaches like Sauble Beach, flat agricultural lands, the rocky outcrops of Niagara Escarpment, and rolling hills such as the Beaver Valley.

Watershed Report Cards are issued every 5 years

A five year cycle allows time to understand potential problems, to work with municipalities and others to measurably improve watershed health, and enough data to be a reliable summary of watershed conditions.

Watershed Grades Table

Watershed Name	Catchment Name	Sub Catchment	Forest Cover Grade	Wetland Grade	Surface Water Grade
Beaver River	Beaver River		A	B	A
	Beaver Valley	Upper Beaver	B	C	B
		Upper Beaver	B	A	B
		Upper Boyne	B	A	A
	Mill Creek		A	B	A
Big Bay Creek	Big Bay Creek		A	A	C
Bighead River	Bighead Headwaters		A	B	A
	Bighead River		B	C	B
Bothwell Creek	Bothwell Creek		B	D	B
Centreville Creek	Centreville Creek		B	D	B
Gleason Brook	Gleason Brook		B	A	A
Indian Brook	Indian Brook		D	F	B
Indian Creek	Indian Creek		B	A	B
Johnson Creek	Johnson Creek		B	F	Insufficient Data
Keefer Creek	Keefer Creek		A	C	B
Little Beaver River	Little Beaver		D	F	C
Pottawatomi River	Pottawatomi River		B	A	B
Sauble River	Rankin River		B	A	A
	Sauble Headwaters		D	C	C
	Sauble North		A	A	B
	Sauble River		B	A	A
	Sauble South		D	D	B
	Spring Creek		A	A	A
Stoney Creek	Stoney Creek		A	A	Insufficient Data
Sucker Creek	Sucker Creek		B	B	Insufficient Data
Sydenham River	Sydenham River		A	B	B
Townline Creek	Townline Creek		B	A	C
Waterton Creek	Waterton Creek		C	F	B

APPENDIX B

PLANNING DOCUMENTS

COUNTY OF BRUCE

OFFICIAL PLAN

Adopted By County Council
May 20, 1997

Approved by Minister of Municipal Affairs
September 15, 1998

Approved by the Ontario Municipal Board
November 16, 1999

Five Year Review Approved by MMAH
June 21, 2010

(Office Consolidation – Jan. 2006)
(Update – May, 2008)
(Consolidation - including OPA 99 – Feb. 2009)
(Consolidation - including Adopted OPA #116 – April, 2009)
(Consolidation - including MMAH Decision – August, 2010)
(Consolidated Copy – September 23, 2010)
(OMB Decision [PL091020] – June 30, 2011)
(Update – August 2011)
(OMB Oral Decision [PL091020] - January 18, 2012)
(Consolidation including OMB Decision of Mar 1, 2012 [PL091020] – March 22, 2012)
(Consolidation – June 2012) (Consolidation – January 2013) (Office Consolidation – April 2013)
(Consolidation – June 2013), (Consolidation – October 2013) (December 2013), (April 2014), (Nov. 2014) (February, 2015) (July 2015) (Sept 2015) (June 2016) (Nov. 2016) (Mar 2017) (July 2017) (Aug. 2017) (September 2017)

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LAND USE SCHEDULES

APPENDICES

.2 **Transportation**

i) Develop adequate and appropriate transportation systems and facilities that move people and goods in a safe, environmentally responsible and economically efficient manner within the County, and between the County and other areas.

.3 **Environmental**

i) Protect and preserve in their natural state, those areas within the County that are ecologically significant;
ii) Encourage the restoration to a natural state, lands that have been abandoned, neglected or degraded; and
iii) Protect and enhance air, land and water quality.

.4 **Social**

i) Maintain the small community environment and enhance the quality of life in Bruce County;
ii) Ensure the provision of educational, social, recreational, health and cultural facilities and services to meet the needs and resources of County residents;
iii) Provide affordable housing for all residents of Bruce County;
iv) Ensure an adequate supply of land is available to accommodate anticipated development to the year 2021 recognizing the future needs and resources of the Community.
v) Encourage a co-operative and mutual approach to social and land use planning issues with the first Nation Communities.

.5 **Economic**

i) Provide opportunities for the continued development of a diverse, sustainable and viable economic base within the County, which is compatible with the natural environment;
ii) Strengthen the industrial and commercial base of the County;
iii) Recognize the interest in and importance of economic growth of the County;
iv) Recognize, promote and strengthen tourism as a viable, vital component of the County economy; and, recognize, promote and strengthen the agricultural community as a viable and vital component of the County's economy;
v) Promote energy generation as a viable form of economic development including, but not limited to, nuclear, renewable alternative and green energy supply.

.6 **Mineral Resources**

i) Ensure the protection of mineral resources for future extraction to meet existing and future demands.

4.6 TRANSPORTATION

4.6.1 Objectives

i) Minimize the environmental and financial costs associated with the development of transportation systems and facilities in the County;
ii) Encourage all jurisdictions to consult with each other in transportation upgrading and maintenance programs;
iii) Encourage the continued existence and development of public and private airports, which serve the County;
iv) Encourage the development of public and private harbour facilities and recreational marine facilities, including marine transportation system, to serve the public and enhance the economic diversity of the County;
v) Maintain and enhance the carrying capacity of the existing and proposed County road system;
vi) Encourage a railway network for the movement of goods and people within the County, and between the County and other areas;
vii) Encourage the preservation of railway rights-of-way for possible future use as transportation, utility or recreation corridors; and,
viii) Recognize, promote and encourage recreational transportation routes including canoe routes, cross-country ski, snowmobile, hiking and bicycle trails.

4.6.2 General Policies

.1 County Council supports the planning, design and operation of a fully integrated County transportation network composed of Provincial highways, County roads, local roads, scenic roads, railways, recreational trails, airports and harbours.

.2 The transportation network is designed to facilitate the movement of people and goods within and through the County.

.3 The transportation network depicted on Schedule 'B' anticipates the future needs of the County, as well as future alterations to Provincial and County transportation systems to maintain an adequate transportation network. It is the policy of County Council to encourage the Ministry of Transportation to construct a 4-lane highway to serve the long term needs of Bruce County, or alternately to provide traffic passing areas on Provincial Highways. Such highways will help strengthen the economy of the County including the tourism, agricultural, industrial, mineral resource and other sectors

.4 The Roads transportation network is classified on the basis of road function as indicated on Schedule 'B'. Where additional land is required for widenings, realignments, extensions and intersection improvements, such land shall be obtained, wherever possible, in the course of approving plans of subdivision or the granting of severances and minor variances, site plan agreements or through development agreements. Where the construction of new or improvements/alterations to existing transportation components are undertaken, any surplus lands which do not meet the minimum lot requirements of the local Municipal zoning by-laws shall be amalgamated where possible with adjoining lands.

.5 Roads within the Planning Area shall be classified according to Section 4.6.3 [Roads].

.6 An Official Plan Amendment to Schedule 'B' of this Plan is required when major re-routing of roads are made to the Provincial highways and County road system indicated on Schedule B.

4.6.3 Roads

4.6.3.1 Arterial Roads

.1 The policies of this section shall apply to all County roads as identified as Arterial roads on Schedule 'B' of this plan.

.2 County Council wishes to maintain and upgrade the Arterial Highway system to ensure improved regional access to major markets and urban centres, within and outside of the County.

.3 County Council in consultation with the local municipalities shall encourage the construction of by-passes around Primary and Secondary Urban Areas, where traffic volumes and congestion warrant.

4.6.3.2 Collector Roads

.1 The policies of this section shall apply to all roads identified as Collector Roads or Proposed Collector Roads on Schedule 'B' of this Plan.

.2 The County shall ensure a continued program of improvements to the County Collector Road network, or Primary Urban Communities, Secondary Urban Communities, Rural Recreational Area, the BNPD / BEC and other major destination points.

4.6.3.3 Local Roads

.1 County Council encourages local municipalities to provide local roads, which are consistent with and accessible by the road network of the adjacent municipality, the County and the Province.

.2 New development on existing private roads may be considered by the local municipality provided that such development occurs on lots which existed on the date of adoption of this Plan and which could legally be conveyed on that date, provided that all other policies of this Plan are met and subject to appropriate zoning. No new private roads shall be permitted.

.3 Private roads are those roads not maintained by a municipality, located either on a municipal or private right-of-way providing access to a cluster of residential uses.

.4 This policy shall not be interpreted so as to prohibit development of Plans of Condominium using private roadways of a standard suitable to the municipalities.

4.6.3.4 Provincial Highways

.1 There are three provincial highways serving the County of Bruce (Highway 6, Highway 9 and Highway 21) which are under the jurisdiction and control of the Ministry of Transportation (MTO). Development that falls within the MTO's permit control areas as defined under the Public Transportation and Highway Improvement Act is subject to all the safety and geometric requirements of the MTO.

.2 New entrances or the upgrading of entrances, location of buildings, signs and encroachments within the MTO's permit control area of a provincial highway shall be subject to the approval of the MTO. MTO requirements may conflict with this Official Plan and therefore in such a situation, the highway standard would apply.

.3 For major development proposals for large traffic generators located within the permit control area of a provincial highway, MTO will require an application to prepare a transportation impact assessment in accordance with its "General Guidelines for the preparation of Traffic Impact Studies". The main purpose of a traffic impact study is to demonstrate how the transportation impacts of a proposed development or redevelopment can be mitigated and addressed in a manner

ontario.ca/PPS

Provincial Policy Statement, 2020

Under the *Planning Act*

Ontario

PROVINCIAL POLICY STATEMENT, 2020

Approved by the Lieutenant Governor in Council, Order in Council No. 229/2020

This Provincial Policy Statement was issued under section 3 of the *Planning Act* and came into effect May 1, 2020. It replaces the Provincial Policy Statement issued April 30, 2014.

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c) directing the development of new housing towards locations where appropriate levels of *infrastructure* and *public service facilities* are or will be available to support current and projected needs;
d) promoting densities for new housing which efficiently use land, resources, *infrastructure* and *public service facilities*, and support the use of *active transportation* and transit in areas where it exists or is to be developed;
e) requiring *transit-supportive* development and prioritizing *intensification,* including potential air rights development, in proximity to transit, including corridors and stations; and
f) establishing development standards for *residential intensification*, *redevelopment* and new residential development which minimize the cost of housing and facilitate compact form, while maintaining appropriate levels of public health and safety.

1.5 Public Spaces, Recreation, Parks, Trails and Open Space

1.5.1 Healthy, active communities should be promoted by:

a) planning public streets, spaces and facilities to be safe, meet the needs of pedestrians, foster social interaction and facilitate *active transportation* and community connectivity;
b) planning and providing for a full range and equitable distribution of publicly-accessible built and natural settings for *recreation*, including facilities, parklands, public spaces, open space areas, trails and linkages, and, where practical, water-based resources;
c) providing opportunities for public access to shorelines; and
d) recognizing provincial parks, conservation reserves, and other protected areas, and minimizing negative impacts on these areas.

1.6 Infrastructure and Public Service Facilities

1.6.1 *Infrastructure* and *public service facilities* shall be provided in an efficient manner that prepares for the *impacts of a changing climate* while accommodating projected needs.

Planning for *infrastructure* and *public service facilities* shall be coordinated and integrated with land use planning and growth management so that they are:

a) financially viable over their life cycle, which may be demonstrated through asset management planning; and
b) available to meet current and projected needs.

1.6.2 Planning authorities should promote *green infrastructure* to complement *infrastructure*.

1.6.3 Before consideration is given to developing new *infrastructure* and *public service facilities*:

a) the use of existing *infrastructure* and *public service facilities* should be optimized; and
b) opportunities for adaptive re-use should be considered, wherever feasible.

1.6.4 *Infrastructure* and *public service facilities* should be strategically located to support the effective and efficient delivery of emergency management services, and to ensure the protection of public health and safety in accordance with the policies in Section 3.0: Protecting Public Health and Safety.

1.6.5 *Public service facilities* should be co-located in community hubs, where appropriate, to promote cost-effectiveness and facilitate service integration, access to transit and *active transportation*.

1.6.6 Sewage, Water and Stormwater

1.6.6.1 Planning for *sewage and water services* shall:

a) accommodate forecasted growth in a manner that promotes the efficient use and optimization of existing:
   1. *municipal sewage services* and *municipal water services*; and
   2. *private communal sewage services* and *private communal water services*, where *municipal sewage services* and *municipal water services* are not available or feasible;
b) ensure that these systems are provided in a manner that:
   1. can be sustained by the water resources upon which such services rely;
   2. prepares for the *impacts of a changing climate;*
   3. is feasible and financially viable over their lifecycle; and
   4. protects human health and safety, and the natural environment;
c) promote water conservation and water use efficiency;
d) integrate servicing and land use considerations at all stages of the planning process; and
e) be in accordance with the servicing hierarchy outlined through policies 1.6.6.2, 1.6.6.3, 1.6.6.4 and 1.6.6.5. For clarity, where *municipal sewage services and municipal water services* are not available, planned or feasible, planning authorities have the ability to consider the use of the servicing options set out through policies 1.6.6.3, 1.6.6.4, and 1.6.6.5 provided that the specified conditions are met.

1.6.6.2 *Municipal sewage services* and *municipal water services* are the preferred form of servicing for *settlement areas* to support protection of the environment and minimize potential risks to human health and safety. Within *settlement areas* with existing *municipal sewage services* and *municipal water services*, *intensification* and *redevelopment* shall be promoted wherever feasible to optimize the use of the services.

sufficient *reserve sewage system capacity* shall include treatment capacity for hauled sewage from *private communal sewage services* and *individual on-site sewage services*.

1.6.6.7 Planning for stormwater management shall:

a) be integrated with planning for *sewage and water services* and ensure that systems are optimized, feasible and financially viable over the long term;
b) minimize, or, where possible, prevent increases in contaminant loads;
c) minimize erosion and changes in water balance, and prepare for the *impacts of a changing climate* through the effective management of stormwater, including the use of *green infrastructure*;
d) mitigate risks to human health, safety, property and the environment;
e) maximize the extent and function of vegetative and pervious surfaces; and
f) promote stormwater management best practices, including stormwater attenuation and re-use, water conservation and efficiency, and low impact development.

1.6.7 Transportation Systems

1.6.7.1 *Transportation systems* should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs.

1.6.7.2 Efficient use should be made of existing and planned *infrastructure*, including through the use of *transportation demand management* strategies, where feasible.

1.6.7.3 As part of a *multimodal transportation system*, connectivity within and among *transportation systems* and modes should be maintained and, where possible, improved including connections which cross jurisdictional boundaries.

1.6.7.4 A land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support current and future use of transit and *active transportation*.

1.6.8 Transportation and Infrastructure Corridors

1.6.8.1 Planning authorities shall plan for and protect corridors and rights-of-way for *infrastructure*, including transportation, transit and electricity generation facilities and transmission systems to meet current and projected needs.

1.6.8.2 *Major goods movement facilities and corridors* shall be protected for the long term.

1.6.8.3 Planning authorities shall not permit *development* in *planned corridors* that could preclude or negatively affect the use of the corridor for the purpose(s) for which it was identified.

2.0 Wise Use and Management of Resources

Ontario's long-term prosperity, environmental health, and social well-being depend on conserving biodiversity, protecting the health of the Great Lakes, and protecting natural heritage, water, agricultural, mineral and cultural heritage and archaeological resources for their economic, environmental and social benefits.

Accordingly:

2.1 Natural Heritage

2.1.1 Natural features and areas shall be protected for the long term.

2.1.2 The diversity and connectivity of natural features in an area, and the long-term *ecological function* and biodiversity of *natural heritage systems*, should be maintained, restored or, where possible, improved, recognizing linkages between and among *natural heritage features and areas*, *surface water features* and *ground water features*.

2.1.3 *Natural heritage systems* shall be identified in Ecoregions 6E & 7E[1], recognizing that *natural heritage systems* will vary in size and form in *settlement areas*, *rural areas*, and *prime agricultural areas*.

2.1.4 *Development* and *site alteration* shall not be permitted in:

a) *significant wetlands* in Ecoregions 5E, 6E and 7E[1]; and
b) *significant coastal wetlands*.

2.1.5 *Development* and *site alteration* shall not be permitted in:

a) *significant wetlands* in the Canadian Shield north of Ecoregions 5E, 6E and 7E[1];
b) *significant woodlands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)[1];
c) *significant valleylands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)[1];
d) *significant wildlife habitat*;
e) *significant areas of natural and scientific interest*; and
f) *coastal wetlands* in Ecoregions 5E, 6E and 7E[1] that are not subject to policy 2.1.4(b)

unless it has been demonstrated that there will be no *negative impacts* on the natural features or their *ecological functions*.

[1] Ecoregions 5E, 6E and 7E are shown on Figure 1.

2.1.6 *Development* and *site alteration* shall not be permitted in *fish habitat* except in accordance with *provincial and federal requirements*.

2.1.7 *Development* and *site alteration* shall not be permitted in *habitat of endangered species and threatened species*, except in accordance with *provincial and federal requirements*.

2.1.8 *Development* and *site alteration* shall not be permitted on *adjacent lands* to the *natural heritage features and areas* identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the *ecological function* of the *adjacent lands* has been evaluated and it has been demonstrated that there will be no *negative impacts* on the natural features or on their *ecological functions*.

2.1.9 Nothing in policy 2.1 is intended to limit the ability of *agricultural uses* to continue.

2.2 Water

2.2.1 Planning authorities shall protect, improve or restore the *quality and quantity of water* by:

a) using the *watershed* as the ecologically meaningful scale for integrated and long-term planning, which can be a foundation for considering cumulative impacts of development;
b) minimizing potential *negative impacts*, including cross-jurisdictional and cross-*watershed* impacts;
c) evaluating and preparing for the *impacts of a changing climate* to water resource systems at the watershed level;
d) identifying water resource systems consisting of *ground water features*, *hydrologic functions*, *natural heritage features and areas*, and *surface water features* including shoreline areas, which are necessary for the ecological and hydrological integrity of the *watershed*;
e) maintaining linkages and related functions among *ground water features*, *hydrologic functions*, *natural heritage features and areas*, and *surface water features* including shoreline areas;
f) implementing necessary restrictions on *development* and *site alteration* to:
    1. protect all municipal drinking water supplies and *designated vulnerable areas*; and
    2. protect, improve or restore *vulnerable* surface and ground water, *sensitive surface water features* and *sensitive ground water features*, and their *hydrologic functions*;
g) planning for efficient and sustainable use of water resources, through practices for water conservation and sustaining water quality;
h) ensuring consideration of environmental lake capacity, where applicable; and
i) ensuring stormwater management practices minimize stormwater volumes and contaminant loads, and maintain or increase the extent of vegetative and pervious surfaces.

2.2.2 *Development* and *site alteration* shall be restricted in or near *sensitive surface water features* and *sensitive ground water features* such that these features and their related *hydrologic functions* will be protected, improved or restored.

Mitigative measures and/or alternative development approaches may be required in order to protect, improve or restore *sensitive surface water features*, *sensitive ground water features*, and their *hydrologic functions*.

2.3 Agriculture

2.3.1 *Prime agricultural areas* shall be protected for long-term use for agriculture.

Prime agricultural areas are areas where *prime agricultural lands* predominate. *Specialty crop areas* shall be given the highest priority for protection, followed by Canada Land Inventory Class 1, 2, and 3 lands, and any associated Class 4 through 7 lands within the *prime agricultural area*, in this order of priority.

2.3.2 Planning authorities shall designate *prime agricultural areas* and *specialty crop areas* in accordance with guidelines developed by the Province, as amended from time to time.

Planning authorities are encouraged to use an *agricultural system* approach to maintain and enhance the geographic continuity of the agricultural land base and the functional and economic connections to the *agri-food network.*

2.3.3 Permitted Uses

2.3.3.1 In *prime agricultural areas*, permitted uses and activities are: *agricultural uses*, *agriculture-related uses* and *on-farm diversified uses*.

Proposed *agriculture-related uses* and *on-farm diversified uses* shall be compatible with, and shall not hinder, surrounding agricultural operations. Criteria for these uses may be based on guidelines developed by the Province or municipal approaches, as set out in municipal planning documents, which achieve the same objectives.

2.3.3.2 In *prime agricultural areas*, all types, sizes and intensities of *agricultural uses* and *normal farm practices* shall be promoted and protected in accordance with provincial standards.

2.3.3.3 New land uses in *prime agricultural areas,* including the creation of lots and new or expanding livestock facilities, shall comply with the *minimum distance separation formulae*.

3.0 Protecting Public Health and Safety

Ontario's long-term prosperity, environmental health and social well-being depend on reducing the potential for public cost or risk to Ontario's residents from natural or human-made hazards.

Development shall be directed away from areas of natural or human-made hazards where there is an unacceptable risk to public health or safety or of property damage, and not create new or aggravate existing hazards.

Mitigating potential risk to public health or safety or of property damage from natural hazards, including the risks that may be associated with the impacts of a changing climate, will require the Province, planning authorities, and conservation authorities to work together.

Accordingly:

3.1 Natural Hazards

3.1.1 Development shall generally be directed, in accordance with guidance developed by the Province (as amended from time to time), to areas outside of:

a) *hazardous lands* adjacent to the shorelines of the *Great Lakes - St. Lawrence River System* and *large inland lakes* which are impacted by *flooding hazards*, *erosion hazards* and/or *dynamic beach hazards*;
b) *hazardous lands* adjacent to *river, stream and small inland lake systems* which are impacted by *flooding hazards* and/or *erosion hazards*; and
c) *hazardous sites.*

3.1.2 *Development* and *site alteration* shall not be permitted within:

a) the *dynamic beach hazard*;
b) *defined portions of the flooding hazard along connecting channels* (the St. Marys, St. Clair, Detroit, Niagara and St. Lawrence Rivers);
c) areas that would be rendered inaccessible to people and vehicles during times of *flooding hazards*, *erosion hazards* and/or *dynamic beach hazards*, unless it has been demonstrated that the site has safe access appropriate for the nature of the *development* and the natural hazard; and
d) a *floodway* regardless of whether the area of inundation contains high points of land not subject to flooding.

3.1.3 Planning authorities shall prepare for the *impacts of a changing climate* that may increase the risk associated with natural hazards.

3.1.4 Despite policy 3.1.2, *development* and *site alteration* may be permitted in certain areas associated with the *flooding hazard* along *river, stream and small inland lake systems*:

a) in those exceptional situations where a *Special Policy Area* has been approved. The designation of a *Special Policy Area*, and any change or modification to the official plan policies, land use designations or boundaries applying to *Special Policy Area* lands, must be approved by the Ministers of Municipal Affairs and Housing and Natural Resources and Forestry prior to the approval authority approving such changes or modifications; or

b) where the *development* is limited to uses which by their nature must locate within the *floodway*, including flood and/or erosion control works or minor additions or passive non-structural uses which do not affect flood flows.

3.1.5 *Development* shall not be permitted to locate in *hazardous lands* and *hazardous sites* where the use is:

a) an *institutional use* including hospitals, long-term care homes, retirement homes, pre-schools, school nurseries, day cares and schools;

b) an *essential emergency service* such as that provided by fire, police and ambulance stations and electrical substations; or

c) uses associated with the disposal, manufacture, treatment or storage of *hazardous substances*.

3.1.6 Where the *two zone concept* for *flood plains* is applied, *development* and *site alteration* may be permitted in the *flood fringe*, subject to appropriate floodproofing to the *flooding hazard* elevation or another *flooding hazard* standard approved by the Minister of Natural Resources and Forestry.

3.1.7 Further to policy 3.1.6, and except as prohibited in policies 3.1.2 and 3.1.5, *development* and *site alteration* may be permitted in those portions of *hazardous lands* and *hazardous sites* where the effects and risk to public safety are minor, could be mitigated in accordance with provincial standards, and where all of the following are demonstrated and achieved:

a) *development* and *site alteration* is carried out in accordance with *floodproofing standards*, *protection works standards*, and *access standards*;

b) vehicles and people have a way of safely entering and exiting the area during times of flooding, erosion and other emergencies;

c) new hazards are not created and existing hazards are not aggravated; and

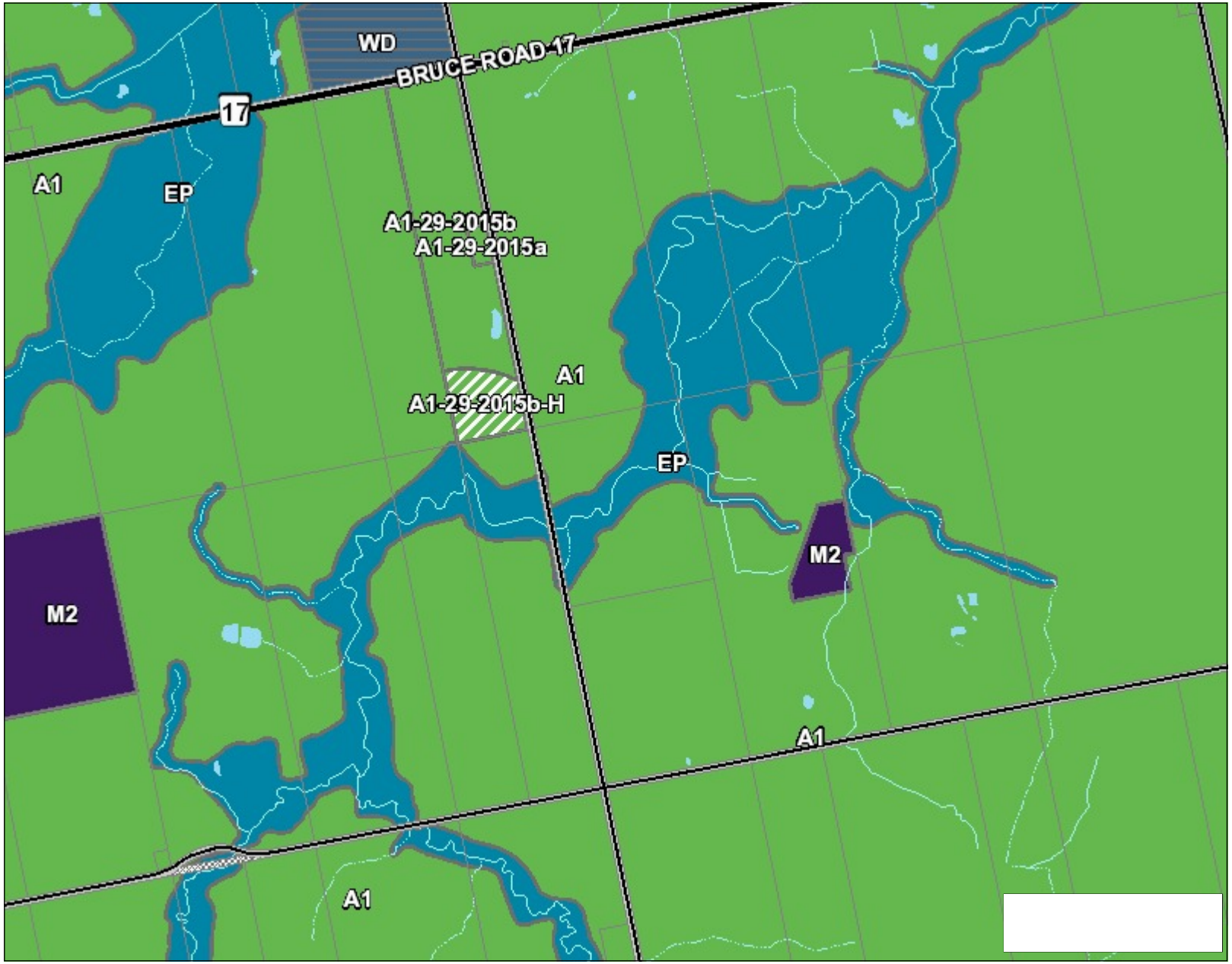
d) no adverse environmental impacts will result.

3.1.8 *Development* shall generally be directed to areas outside of lands that are unsafe for *development* due to the presence of *hazardous forest types for wildland fire*.

Development may however be permitted in lands with *hazardous forest types for wildland fire* where the risk is mitigated in accordance with *wildland fire assessment and mitigation standards.*

County of Bruce

Bruce County



Legend

- Ferry
- Provincial Highway
- County Road
- Municipal or Other Road
- Road Allowance/Right-of-way
  - Private Road Allowance
  - Right-of-Way
  - Road Allowance or Condo Road
  - Unopened Road Allowance
- Body of Water
- Evaluated Wetland
- Watercourse
  - Permanent Stream
  - Intermittent Stream
- Zones
  - Environmental Protection/Hazard
  - Environmental Protection/Hazard Holding
  - Wetland
  - General Agriculture/Rural
  - General Agriculture/Rural Holding
  - Restricted Agriculture/Rural
  - Restricted Agriculture/Rural Holding
  - Hamlet Residential
  - Mobile Home Park Residential
  - Inland Lake Residential
  - Lifestyle Community Residential
  - Lifestyle Community Residential Holding
  - Resort/Cottage Residential
  - Resort Residential Holding
  - Office Residential
  - Detached Residential
  - Detached Residential Holding
  - Low Density Residential
  - Low Density Residential Holding
  - Low/Medium Density Residential mix
  - Medium Density Residential
  - Medium Density Residential Holding

Notes

Sopers Bridge Replacement

0.8 0 0.41 0.8 Kilometers

NAD_1983_UTM_Zone_17N

The Corporation Of The

Municipality Of Arran-Elderslie

By-Law Number 36-09

A by-law to regulate the use of land and the erection, use, bulk, height, spacing of and other matters relating to buildings and structures and to restrict certain uses of land and the erection and use of certain buildings and structures in the Municipality of Arran-Elderslie.

Passed by Municipal Council June 29, 2009
Ontario Municipal Board Decision July 5, 2010

The Corporation of the Municipality of Arran-Elderslie
P. O. Box 70, 1925 Bruce Road 10
Chesley ON N0G 1L0
Tel: 519-363-3039

Housekeeping

1. By-law 59-10, December 24, 2010
2. By-laws 38-11, 39-11, October 11, 2011
3. By-law 23-2013, April 22, 2013

Office Consolidations

August 11, 2010
November 29, 2010
March 2, 2011
March 30, 2011
July 15, 2011
July 26, 2011
Jan 26, 2012
Oct 31, 2012
Jan 23, 2013
May 23, 2013
July 15, 2013
December 2013
April 2014
January 2015
July 2015
January 2016
December 2016
January 2018
January 2019

Prepared by the Bruce County
Planning & Economic Development Department

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Section 3 - General Provisions For All Zones

3.1 Permitted Uses

3.1.1 Services and Utilities

.1 Nothing contained in this By-law shall prevent the Corporation; any agency or department of the Federal, Provincial or County Government; any utility company; any railway company or any local or County Board or Commission from:

a) Installing a watermain, sanitary sewer main, sewage or water pumping station, storm sewer main, gas main, electric power transformer/distribution station, transmission tower, communications tower, pipeline, overhead or underground electric line, cable service, or telephone line, road or street subject to there being no outdoor storage of goods, materials or equipment in any yard.

b) Erecting any required accessory service buildings for the purpose of supplying a public service subject to compliance with the provisions prescribed for the Zone in which it is to be located and subject to there being no outdoor storage of goods, materials or equipment in any yard.

.2 A sewage and/or water pumping station or 'water well' owned and operated by, or for, the Corporation, may be erected no closer than 3 metres (9.8 ft.) to the lot lines and shall be exempt from all other zone provisions of the zone in which it is located.

.3 Any electric power facilities and any receiving or transmitting tower and facilities of any radio or television station existing on the date of passing of this By-law are permitted.

Explanatory Note:

Public Utilities and similar uses are subject to the Environmental Assessment Act, and also may be subject to other legislation.

3.1.2 Temporary Buildings & Construction Facilities

.1 Nothing contained in this By-law shall prevent the erection or location of any sheds, scaffolds, construction trailers or other structures incidental to building construction on a lot for so long as the same is necessary for work in progress which has neither been finished, nor abandoned provided any necessary permits are obtained. All temporary buildings and/or construction facilities shall be noted on the Building Permit at time of issuance.

APPENDIX C

CULTURAL HERITAGE DOCUMENTS

Municipal Heritage Bridges
Cultural, Heritage and Archaeological Resources Assessment Checklist
Revised April 11, 2014

This checklist was prepared in March 2013 by the Municipal Engineers Association to assist with determining the requirements to comply with the Municipal Class Environmental Assessment. View all 4 parts of the module on Structures Over 40 Years at www.municipalclassea.ca to assist with completing the checklist.

Project Name: Replacement of Sopers Bridge

Location: Tara Creek along Sideroad 20

Municipality: Arran-Elderslie

Project Engineer: Andy Ross

Checklist completed by: Becky Adams

Date: October 27, 2020

NOTE: Complete all sections of Checklist. Both Cultural Heritage and Archaeological Sections must be satisfied before proceeding.

Part A - Municipal Class EA Activity Selection

Description	Yes	No
Will the proposed project involve or result in construction of new water crossings? This includes ferry docks.	❒ Schedule B or C Type text here	☒ Next
Will the proposed project involve or result in construction of new grade separation?	❒ Schedule B or C	☒ Next
Will the proposed project involve or result in construction of new underpasses or overpasses for pedestrian recreational or agricultural use?	❒ Schedule B or C	☒ Next
Will the proposed project involve or result in construction of new interchanges between any two roadways, including a grade separation and ramps to connect the two roadways?	❒ Schedule B or C	☒ Next

Description	Yes	No
Will the proposed project involve or result in reconstruction of a water crossing where the structure is less than 40 years old and the reconstructed facility will be for the same purpose, use, capacity and at the same location? (Capacity refers to either hydraulic or road capacity.) This include ferry docks.	❒ Schedule A+	☒ Next
Will the proposed project involve or result in reconstruction of a water crossing, where the reconstructed facility will not be for the same purpose, use, capacity or at the same location? (Capacity refers to either hydraulic or road capacity). This includes ferry docks.	☒ Schedule B or C	❒ Next
Will the proposed project involve or result in reconstruction or alteration of a structure or the grading adjacent to it when the structure is over 40 years old where the proposed work will alter the basic structural system, overall configuration or appearance of the structure?	☒ Next	❒ Assess Archaeological Resources

Part B - Cultural Heritage Assessment

Description	Yes	No
Does the proposed project involve a bridge construction in or after 1956?	❒ Next	☒ Prepare CHER Undertake HIA
Does the project involve one of these four bridge types?	❒ Rigid frame Next ❒ Precast with Concrete Deck Next ❒ Culvert or Simple Span Next ❒ Steel Bean/ Concrete Deck Next	❒ Prepare CHER Undertake HIA

Description	Yes	No
Does the bridge or study area contain a parcel of land that is subject of a covenant or agreement between the owner of the property and a conservation body or level of government?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is listed on a register or inventory of heritage properties maintained by the municipality?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is designated under Part IV of the Ontario Heritage Act?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is subject to a notice of intention to designate issued by a municipality?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is located within a designated Heritage Conservation District?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is subject to a Heritage Conservation District study area by-law?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is included in the Ministry of Tourism, Culture and Sport's list of provincial heritage properties?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is part of a National Historic Site?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is part of a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site?	❒ Prepare CHER Undertake HIA	❒ Next

Description	Yes	No
Does the bridge or study area contain a parcel of land that is designated under the Heritage Railway Station Protection Act?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is identified as a Federal Heritage Building by the Federal Heritage Building Review Office (FHBRO)	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is the subject of a municipal, provincial or federal commemorative or interpretive plaque that speaks to the Historical significance of the bridge?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain a parcel of land that is in a Canadian Heritage River watershed?	❒ Prepare CHER Undertake HIA	❒ Next
Will the project impact any structures or sites (not bridges) that are over forty years old, or are important to defining the character of the area or that are considered a landmark in the local community?	❒ Prepare CHER Undertake HIA	❒ Next
Is the bridge or study area adjacent to a known burial site and/or cemetery?	❒ Prepare CHER Undertake HIA	❒ Next
Is the bridge considered a landmark or have a special association with a community, person or historical event in the local community?	❒ Prepare CHER Undertake HIA	❒ Next
Does the bridge or study area contain or is it part of a cultural heritage landscape?	❒ Prepare Cher Undertake HIA	❒ Assess Archaeological Resources

PART C - HERITAGE ASSESSMENT

Description	Yes	No
Does the Cultural Heritage Evaluation Report identify any Heritage Features on the project?	❒ Undertake HIA	☒ Part D - Archaeological Resources
Does the Heritage Impact Assessment determine that the proposed project will impact any of the Heritage Features that have been identified?	❒ Schedule B or C	❒ Part D - Archaeological Resources

PART D - ARCHAEOLOGICAL RESOURCES ASSESSMENT

Description	Yes	No
Will any activity, related to the project, result in land impacts/significant ground disturbance?	☒ Next	❒ Schedule A - proceed
Have all areas, to be impacted by ground disturbing activities, been subjected to recent extensive and intensive disturbances and to depths greater than the depths of the proposed activities?	❒ Schedule A - proceed	☒ Next
Has an archaeological assessment previously been carried out that includes all of the areas to be impacted by this project?	❒ Next	☒ Archaeological Assessment
Does the report on that previous archaeological assessment recommend that no further archaeological assessment is required within the limits of the project for which that assessment was undertaken, and has a letter been issued by the Ministry of Tourism, Culture and Sport stating that the report has been entered into the Ontario Public Register of Archaeological Reports?	❒ Schedule A - proceed	❒ Obtain satisfaction letter - proceed

**** Include Documentation Summary in Project File****

B.M. Ross & Associates Ltd.

Cultural Heritage Evaluation Report: Structure A25

Municipality of Arran-Elderslie, Ontario

Prepared by:

AECOM
410 – 250 York Street, Citi Plaza
London, ON, Canada N6A 6K2
www.aecom.com

519 673 0510 tel
519 673 5975 fax

March 2021

Project Number: 60615394

Statement of Qualifications and Limitations

The attached Report (the "Report") has been prepared by AECOM Canada Ltd. ("AECOM") for the benefit of the Client ("Client") in accordance with the agreement between AECOM and Client, including the scope of work detailed therein (the "Agreement").

The information, data, recommendations and conclusions contained in the Report (collectively, the "Information"):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the "Limitations");
- represents AECOM's professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to AECOM which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

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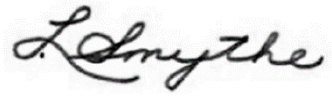
AECOM: 2015-04-13

Signatures



Report Prepared By:

Liam Smythe, B.URPl
Cultural Heritage Specialist

Report Reviewed By:

Tara Jenkins, MA, CAHP
Cultural Heritage Specialist

Executive Summary

AECOM Canada Ltd. (AECOM) was retained by B.M. Ross and Associates Ltd. on behalf of the Municipality of Arran-Elderslie to complete a Cultural Heritage Evaluation Report (CHER) for Structure A25, named Soper's Bridge, in the Geographic Township of Arran, between Lots 20 and 21, Concession 5, near the Town of Tara, Ontario. The structure generally has a north-south orientation and carries Sideroad 20 over Tara Creek.

Structure A25 is a single lane, single-span, slab on steel I-beam girder bridge. The bridge has a total deck length of 7.8m, a deck has roadway width of 4.6m and an overall structure width of 4.8m. The bridge has ribbed steel guardrails with wooden posts on either side bridge deck.

Based on the results of background historical research, the field review, and application of criteria from Ontario Regulation 9/06 of the *Ontario Heritage Act*, Structure A25, Soper's Bridge, was not determined to demonstrate sufficient cultural heritage value to merit designation under the *Ontario Heritage Act*. Accordingly, no Statement of Cultural Heritage Value or Interest, or list of heritage attributes has been prepared for Structure A25 in this CHER.

This CHER serves as sufficient documentation of the structure, and no further cultural heritage reporting is required.

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Appendices

1. Introduction

1.1 Study Purpose

AECOM Canada Ltd. (AECOM) was retained by B.M. Ross and Associates Ltd. on behalf of the Municipality of Arran-Elderslie to complete a Cultural Heritage Evaluation Report (CHER) for Structure A25, named Soper's Bridge, in the Geographic Township of Arran, between Lots 20 and 21, Concession 5, near the Town of Tara, Ontario. The structure generally has a north-south orientation and carries Sideroad 20 over Tara Creek.

Structure A25 is a single lane, single-span, slab on steel I-beam girder bridge. The bridge carries a single lane of vehicular traffic over Tara Creek with a total deck length of 7.8m. The deck has a roadway width of 4.6m and an overall structure width of 4.8m. The bridge has ribbed steel guardrails with wooden posts on either side bridge deck.

Image 1. West Elevation of Structure A25 (Courtesy of BM Ross, 2012)

As this structure exceeds the 40-year age limit, a CHER is required to determine if the bridge retains cultural heritage value, which would warrant further study through the Environmental Assessment (EA) process prior to the detailed design or construction work. The principal aims of this CHER are to:

- Describe the methodology that was employed and the legislative and policy context that guides heritage evaluations of bridges over 40 years old;
- Provide a historical overview of the design and construction of the bridge within the broader context of the surrounding township and bridge construction generally;
- Describe existing conditions and heritage integrity;
- Evaluate the bridge using Ontario Regulation 9/06, Criteria for Determining Cultural Heritage Value or Interest, of the *Ontario Heritage Act* and draw conclusions about the heritage attributes of the structure; and,
- If warranted, assess impacts of the undertaking, ascertaining sensitivity to change in the context of identified heritage attributes and recommend appropriate mitigation measures.

Structure A25 has not been previously identified as an Ontario Heritage Bridge and is not currently listed on the Municipality of Arran-Elderslie Municipal Heritage Register or designated under the *Ontario Heritage Act*.

1.2 Study Method

The scope of a CHER is guided by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) *Ontario Heritage Tool Kit: Heritage Resources in the Land Use Planning Process* (2006). Generally, CHERs include the following components (MHSTCI 2006):

- A general description of the history of a study area as well as a detailed historical summary of property ownership and building(s) development;
- A description of the cultural heritage landscape and built heritage resources;
- A site analysis including representative photographs of the structure, and character-defining details;
- A cultural heritage resource evaluation guided by the OHA criteria;
- A summary of heritage attributes;
- Historical mapping and photographs; and,
- A location plan.

Using background information and data collected during the site analysis, conducted July 16, 2020, the structure is evaluated using criteria contained within O. Reg.9/06 of the OHA. The criteria are grouped into the following categories which determine the cultural heritage value or interest of a potential heritage resource in a municipality:

i) Design/Physical Value;

ii) Historical/Associative Value; and,
iii) Contextual Value.

Should the structure meet one or more of the above-mentioned criteria, a Heritage Impact Assessment (HIA) is required.

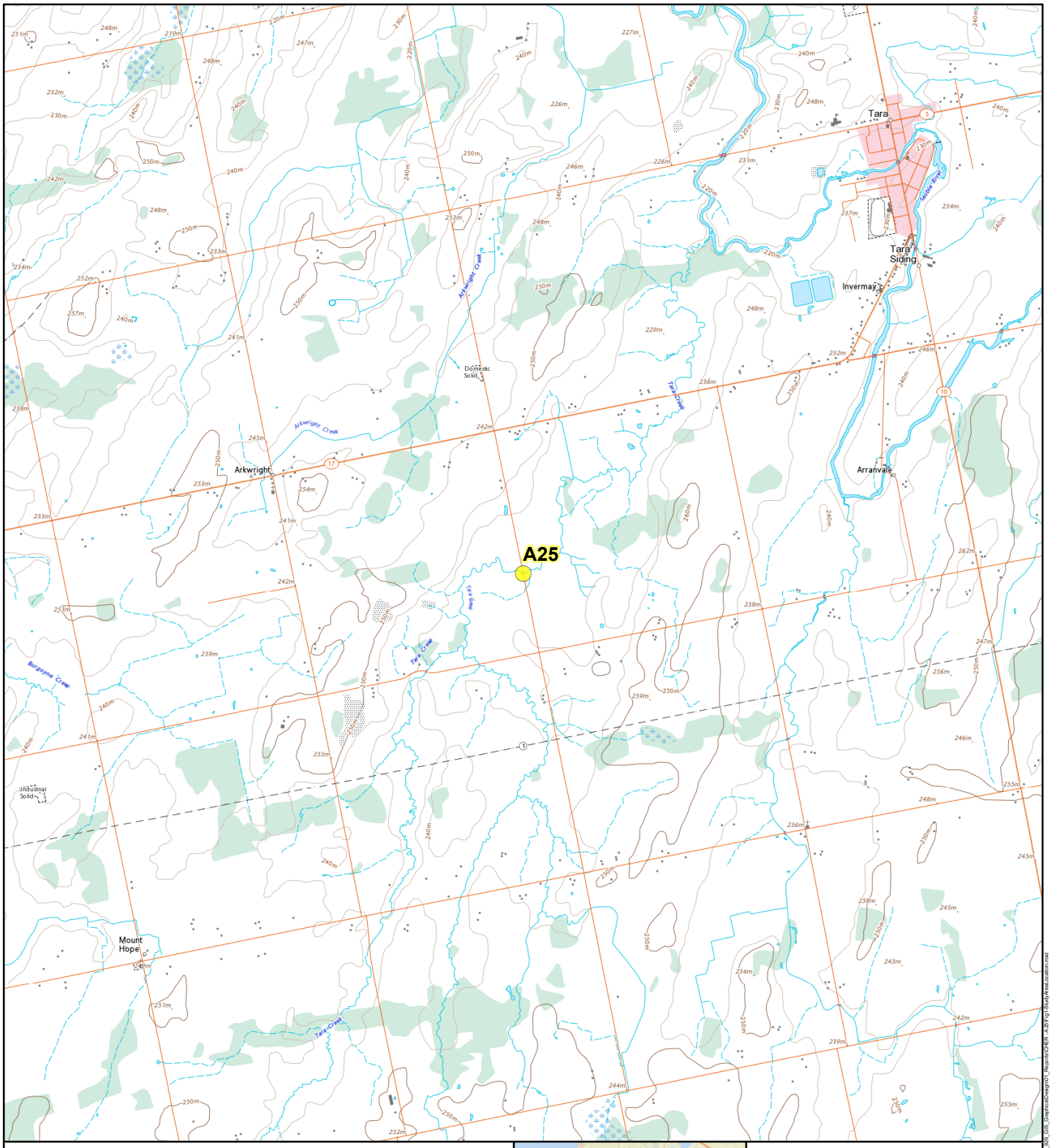
When evaluating the cultural heritage significance of a subject bridge, the *Ontario Heritage Bridge Guidelines for Provincially Owned Bridges* (OHGB) (MTO 2008) and the *Ontario Heritage Bridge Program* (MHSTCI 1991) are consulted as points of reference.

The OHBG provides rationale for the protection and preservation of heritage bridges and is described as follows (MTO 2008:5-6):

> *Bridges are important parts of our engineering and architectural heritage. Perhaps more than any other type of structure built by man, they exhibit major historical change and innovation in the development and use of materials, in design, and in construction methods. They can be viewed as important elements and make a positive contribution to their surroundings. In some cases, they are rare survivors of an important bridge type or are revered because of their age, historical associations or other publicly perceived values.*

This CHER has been completed by a team of AECOM's Cultural Resource Management staff including Tara Jenkins, C.A.H.P. (Cultural Heritage Specialist), Liam Smythe (Cultural Heritage Specialist), and Adria Grant, C.A.H.P. (Associate Vice President, Impact Assessment and Permitting).

This report was completed during the COVID-19 Pandemic, when local libraries and archives were closed to the public. Research materials used in the production of this report were therefore limited to those available online, or on file with AECOM and B.M. Ross.



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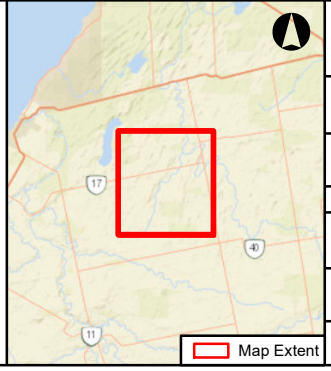
- Structure Location



Cultural Heritage Evaluation Report
Arran-Elderslie Bridge Master Plan
Structure: A25
Bruce County, Ontario

Location of Study Area

February 2021	1:50,000	Datum: NAD 83 UTM17 Source: http://wms.ess-ws.nrcan.gc.ca/wms/toporama_en
P#: 60615394	V#:	

AECOM

Figure 1

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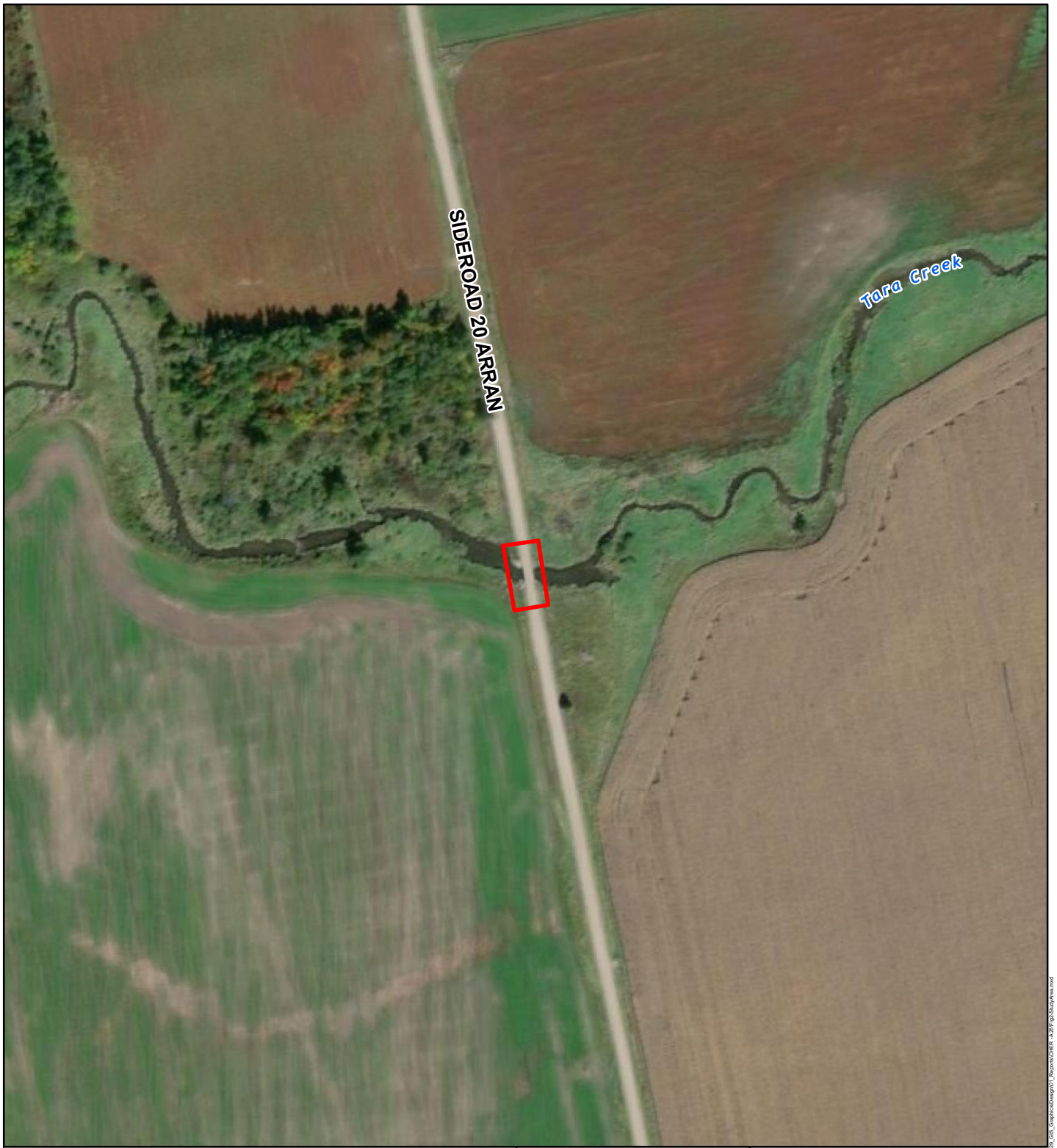

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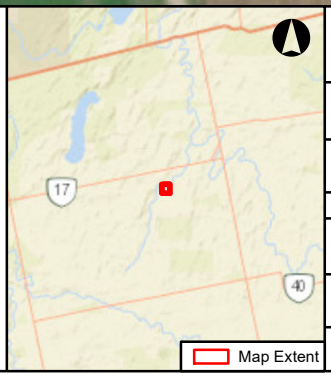
Study Area



Cultural Heritage Evaluation Report
Arran-Elderslie Bridge Master Plan
Structure: A25
Bruce County, Ontario

Study Area in Detail

February 2021	1:3,000	Datum: NAD 83 UTM17 Source: LIO 2019
P#: 60615394	V#:	

AECOM

Figure 2

0 30 60 120
Meters

Date Saved: 2/25/2021 2:24:10 PM User Name: dakis

2. Policy and Planning Framework

2.1 Ontario Environmental Assessment Act

This report has been produced to satisfy the cultural heritage reporting requirements typically undertaken as part of the Municipal Class EA process in Ontario. Pursuant to the *Environmental Assessment Act* (R.S.O. 1990, Chapter E.18), applicable infrastructure improvements and development projects are subject to appropriate studies to evaluate and assess the potential related impacts of a project on the social, economic, or cultural environment, i.e. the cultural heritage of an area. Infrastructure improvements projects have the potential to impact cultural heritage resources in various ways including, but not limited to:

- Loss or disruption of resources through removal or demolition;
- Disruption of resources by introducing physical, visual, audible, or atmospheric elements that are not in keeping with the resources and their contextual surroundings.

2.2 Additional Guidelines

A 40-year-old threshold is used as a guiding principle when considering cultural heritage resources in the context of improvements to specified areas. While identification of a resource that is 40 years old or older does not confer outright heritage significance, this threshold provides a means to collect information about resources that may retain heritage value. Similarly, if a resource is slightly younger than 40 years old, this does not preclude the resource from retaining heritage value.

The analysis used throughout the cultural heritage resource assessment process addresses cultural heritage resources under various pieces of legislation and their supporting guidelines:

- *Environmental Assessment Act* (R.S.O. 1990, Chapter E.18)
    - *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments* (MCC 1992)
    - *Guidelines on the Man-Made Heritage Component of Environmental Assessments* (MCR 1980)
    - *Municipal Heritage Bridges: Cultural, Heritage and Archaeological Resources Assessment Checklist* (Municipal Engineers Association 2014)
- *Planning Act* (R.S.O. 1990, Chapter P.13)
    - *Heritage Resources in the Land Use Planning Process*, 2020 Provincial Policy Statement
- *Ontario Heritage Act* (R.S.O. 1990, Chapter O.18) and a number of guidelines and reference documents prepared by the MHSTCI:

- *Ontario Heritage Tool Kit: Heritage Resources in the Land Use Planning Process* (MHSTCI 2006)
- *Screening for Impacts to Built Heritage and Cultural Heritage Landscapes (November 2010)*

2.3 Bruce County Official Plan

The Official Plan for Bruce County is a policy document, adopted in accordance with the provisions of the *Planning Act*. The following objectives provide a county planning context that addresses heritage conservation and its relation to this bridge project:

4.10.1 Objectives

1. Encourage the conservation of land, buildings and sites of historic, architectural and archaeological value.

2. County Council encourages the identification, acquisition, restoration and conservation of the historical, cultural, architectural and archaeological assets of the County.

3. Historical Overview

A review of available primary and secondary source material was undertaken to produce a contextual overview of the subject bridge. Historically, the subject bridge was located in the former Township of Arran, between Lots 20 and 21, Concession V, Bruce County.

3.1 Indigenous Land Use

Algonquian-speaking Odawa groups maintained a close relationship with the Iroquoian speaking Petun peoples living along the southern shore of Nottawasaga Bay (Fox 1990:461). The Ojibwa (a.k.a. the "Chippewa", who called themselves "Anishnabe"), who are also Algonquian speakers, lived in the region extending from the Georgian Bay area to the north shore of Lake Superior prior to European contact (Schmalz 1977). Both the Odawa and Ojibwa were disrupted and displaced by Iroquois hostilities in the 1650s (Schmalz 1977) but regrouped by the last quarter of the seventeenth century (Ferris 1989) and returned to their homeland. The 1690s witnessed significant battles between the Iroquois and Anishnabe Three Fires Confederacy (Ottawa, Ojibway, Pottawatomi), with the result being that Ojibway groups took control over Bruce County lands (Wilson McArthur 2005:49) and held them until the negotiation of Crown transfers a century later.

Schmalz (1977:1) also describes the Ojibwa (including Mississauga, Potawatomi, Ottawa and Caughnawaga) who settled in Saugeen Township. The Chippewas of Saugeen First Nation and the Chippewas of Nawash First Nation share the same traditional territories in southwestern Ontario. They were a part of the ancient Three Fires Confederacy of Ojibwa, Odawa, and Pottawatomi. Throughout the eighteenth century the Saugeen Territory was inhabited by several generations of Ojibwa whose immediate territory was threatened neither by war nor by European settlers.

The (Saugeen) Ojibwa surrendered portions of Grey and Wellington Counties in 1818 (McMullen 1997:28). This was done with the understanding that they would have continued use of Bruce County and that they would receive annuities for the lands surrendered. Further land was surrendered in the area with the establishment of the Huron Tract in 1825, later to be followed by the surrender of Bruce County to the British through the Treaty of Manitowaning in 1836 (Lee 2004:21; Robertson 1906:11). The surrender of Bruce County did not include the Bruce Peninsula, known as the Saugeen Peninsula by the resident Ojibwa. The Neyaashiinigmiing Indian Reserve Number 27 on the southeast side of the Bruce Peninsula (Nawash Ojibwa) and the Saugeen Indian Reserve Number 29 above Southampton (Saugeen Ojibwa) were established in 1854 (Chippewas of Nawash 2010).

Some accounts suggest that the first Europeans to traverse through Bruce County were French explorer Samuel de Champlain and Jesuit missionaries in the seventeenth century. It is reported that the first Euro-Canadian settlers to establish homes in Bruce County were William Withers and Allan Cameron

(Robertson 1906:429). Early on, the focal point for both residence and industry was the Lake Huron shoreline. The mouth of the Penetangore River was an attractive locale for docking and shipping.

Historic Saugeen Metis

The Historic Saugeen Métis are descendants of the Métis who traded at Southampton (Saugeen). Pierre Piché was considered the first Métis in the area in 1816. The Ojibwa invited Piché to share the resources within the Saugeen territory. The Historic Saugeen Métis are descended from unions between European traders and indigenous women. The Lake Huron watershed Métis "lived, fished, hunted, trapped and harvested the lands and waters of the Bruce Peninsula, the Lake Huron proper shoreline and its watershed". (http://saugeenmetis.com/about/). These are considered the traditional Métis territory. The contemporary Métis community extends for 275 kms of Lake Huron shoreline from Tobermory to south of Goderich, and includes the counties of Bruce, Grey and Huron (http://saugeenmetis.com/about/).

3.2 Bruce County- Township Survey and Euro-Canadian Settlement

In 1847, the government requested a road be opened from Simcoe County to Penetangore (Kincardine). Allan Park Brough surveyed the land from Durham and westward to Lake Huron. Two concessions north and south of this Durham Road were offered as free 50-acre land grants to encourage settlement in this last wild region, referred to as the "Queen's Bush" in Canada West. James Bruce, Earl of Elgin and Kincardine, was Governor General of Canada during the time of the survey, and his surname became the moniker for the County (Robertson 1988:39). The first permanent Euro-Canadian settler was Captain John Spence, setting up a log house at the mouth of the Saugeen River in 1848 (Robertson 1988:27). In May of 1849, the district of Huron in the Queen's Bush was divided into three counties: Huron, Perth, and Bruce. Brant and Kincardine townships were being surveyed in 1850, while efforts were made to log and open the Durham Road (Robertson 1988:48-51). The following year, as additional townships were ordered surveyed, so too was the town plot of Southampton, as it was expected to hold the county seat.

The census of 1851 reported that there were no more than 499 families living in Bruce County, many of whom lived in temporary shanties. These shanties were typical dwellings for early settlers while their land was cleared and were often a stipulation of the land grant process. The population of the county grew quickly into the 1860s, which was facilitated by the construction of a series of stone roads that provided access between the various settlements within the County.

3.2.1 Township of Arran

The subject bridge is located within the Geographic Township of Arran which was situated historically in the middle of Bruce County. Arran township is located between Amabel Township to the north and Elderslie Township to the south. Arran Township is named after the Island of Arran at the mouth of the River Clyde in Scotland. Henry Boyle settled in the township in 1850. He opened a log tavern in the wilderness to accommodate the incoming land seekers. George Gould surveyed the township in 1851 for the government. Early pioneer J.W. Linton, together with Gould, selected to settle on land in present-day

Invermay. The opening of the Saugeen and Owen Sound Road through the centre of Arran in 1852 made parts of the township accessible to settlers and the population of the township began to grow (Mika and Mika 1977:86).

Until 1853, Arran was part of the United Townships in Bruce County. It became the senior township in the municipality of the United Townships of Arran and Elderslie. During 1856 however, Arran was a separate municipality. In 1857, it entered a union with Amabel Township. In 1861, it again became a separate municipality. The first post office was named Arran after the township and was opened by George Gould in 1853. Arran Lake which outlets into the Sauble River covers 968 acres of the area. The land suited for agriculture but turned to cattle farms (Mika and Mika 1977:86). In 1880, Arran's town hall was located in Arkwright, a postal village near the centre of the township (H. Belden & Co. 1880). Arran's communities include, Allenford, Elsinore, Invermay, Arkwright, Mount Hope, and Burgoyne. The only incorporated village was Tara. The population in 1975 was around 1,529 (Mika and Mika 1977:86). On January 1st, 1999, Arran Township was amalgamated with neighbouring Elderslie Township, the villages of Paisley and Tara, and the Town of Chesley to become the Municipality of Arran-Elderslie.

3.2.1.1 Arkwright

Located to the northwest of the subject bridge is the community of Arkwright, at the present-day intersection of Bruce Road 17 and Sideroad 15. Arkwright was one of the first three villages in Arran Township, along with Tara and Invermay. The Arkwright post office was established in 1857, with J. Faulkner serving as the first postmaster (Robertson 1906: 271). The village is illustrated on the 1880 *Illustrated Historical Atlas of the Counties of Bruce & Grey.* A church is shown within the village, and a schoolhouse to the east. During the mid-19th century, the village reportedly contained two hotels, two Methodist churches, and a nearby sawmill. The Arran Township council met at the Council Chamber in the village, which still stands on the north side of Bruce Road 17. Lack of a railway connection meant that the village attracted few industries in the latter part of the 19th century, and it gradually declined in population. The post office closed in 1915 (Danyleyko 2015).

3.2.1.2 Tara and Invermay

Tara is located approximately 26 kilometres southwest of Owen Sound on the Sauble River. In 1980, the village had 682 inhabitants (H. Belden & Co. 1880). Richard Berford and John Hamilton came to Arran Township in 1851 settling in the vicinity of Tara. It was surveyed into village lots in the late 1850s. John Hamilton erected a log building and offered accommodation to travellers and land seekers. H.W.M Richards built a sawmill at the settlement in 1855. Gerolamy's foundry and agricultural implement works opened in late 1850s. The post office opened in 1862 under the name "Eblana" (H. Belden & Co. 1880). The name was then changed to Tara after an Irish Town. Tara was incorporated as a village in 1881, the year the railway arrived (Mika and Mika 1983:484-484). The village is noted as being situated on one street, the old Owen Sound stage road, which ran along the Sauble River and the whole length of the 7 and 8 Concessions (H. Belden & Co. 1880).

Situated just south of the village of Tara on the Sauble River, Invermay was the habitation of George Gould in Arran Township. He built a log house at this location as the headquarters for the surveying party while laying out Arran Township (H. Belden & Co. 1880). Invermay was surveyed into lots in 1855. Soon after Luke Gardner built a sawmill. A grist mill was built in 1857. The post office opened in 1857 under the name Arran. The named changed to Invermay in 1859. In 1865, the population of Invermay was 250 and it had two stores, two tanneries, two churches, one grist mill, and two sawmills. Located one mile from Tara caused intense rivalry between the two villages (Mika and Mika 1983:484-484).

By 1880, the villages of Tara and Invermay had grown to one, but each still was a distinct post village ((H. Belden & Co. 1880). At that time, Tara and Invermay contained four hotels, six general stores, groceries, hardware, tin, stove, drug, book, cabinet, shoe, and harness stores, two flouring and grist mills, a sawmill, two planning mills, a woolen factory, two cabinet factories, three carriage and four blacksmiths, one grain-cradle factory, and a large foundry and a fanning mill factory.

3.2.2 History of the Structure A25 and Previous Bridge Crossings

3.2.2.1 Review of 19th and 20th Century Mapping

Available 19th and 20th century maps were reviewed to provide a description of the bridge within a historical context. It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases. For instance, they were often financed by subscription limiting the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases. In addition, the use of historical map sources to reconstruct/predict the location of former features within the modern landscape generally begins by using common reference points between the various sources. The historical maps are geo-referenced to provide the most accurate determination of the location of any property on a modern map. The results can be often be imprecise or even contradictory as there are numerous potential sources of error inherent in such a process, including differences of scale and resolution, and distortions introduced by reproduction of the sources.

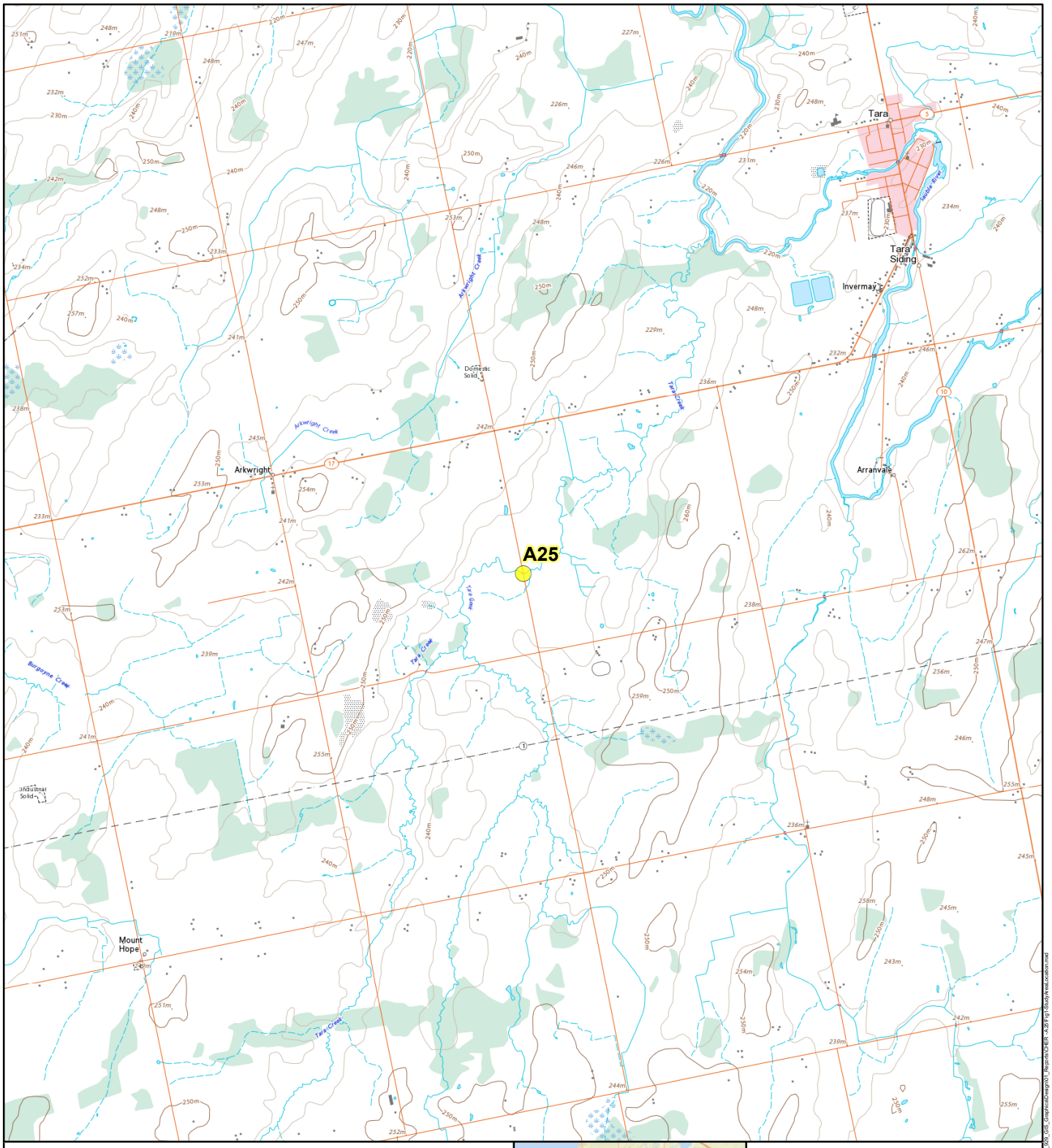
Structure A25 is historically located on a generally north-south sideroad between Lots 20 and 21, Concession V over Tara Creek (a branch of the Tara River) in former Arran Township. This road is currently referred to as Sideroad 20. The 1880 *Illustrated Historical Atlas of the Counties of Grey & Bruce, Ont.* published by H. Belden & Co. (**Figure 3**) shows Sideroad 20 as an open road between what is now Bruce County Road 17 to the north and Concession Road 5 to the south. The map illustrates a significant watercourse at the location of Structure A25 which may indicate that an earlier bridge was present in the 1880s. There are no structures or landowners shown on the 1880 map adjacent to the subject bridge. The map also shows considerable development within the community of Arkwright, with a school and church illustrated on the north side of Bruce County Road 17.

The 1946 National Topographic Series Map (**Figure 4**), labels the subject bridge as a concrete structure. As the OSIM Inspection Report (2017) identifies the Structure A25 as being constructed in 1940, it is

presumed that that the structure show on this map is the present bridge, however it is plausible there may have been an earlier single span concrete bridge at this site.

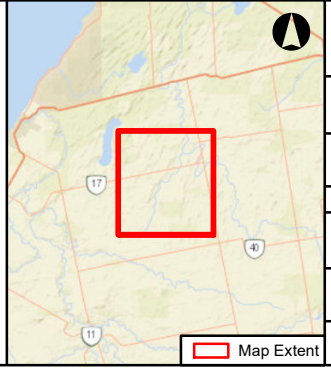
In regard to the name of the bridge, Soper's Bridge, the lots containing the structure, Lots 20 and 21, Concession V, the surname of Soper does not appear in the land registry records for those lots. The 1921 Census of Canada identifies a stonemason by the name of Thomas Soper in the nearby community of Chesley in Arran Township. It is, however, most likely that the bridge was named after nearby property owners, Tom and Kit Soper. Lived at 559 Sideroad 20, on part of Lot 20, Concession VI (email communication with Scott McLeod, Municipality of Arran-Elderslie, March 8, 2021). They occupied Lot 20, Concession VI, between 1974 and 2014.

No further information could be gleaned about the construction of the structure, including bridge designer, engineer or construction company.



Legend

- Structure Location



Cultural Heritage Evaluation Report
Arran-Elderslie Bridge Master Plan
Structure: A25
Bruce County, Ontario

Location of Study Area

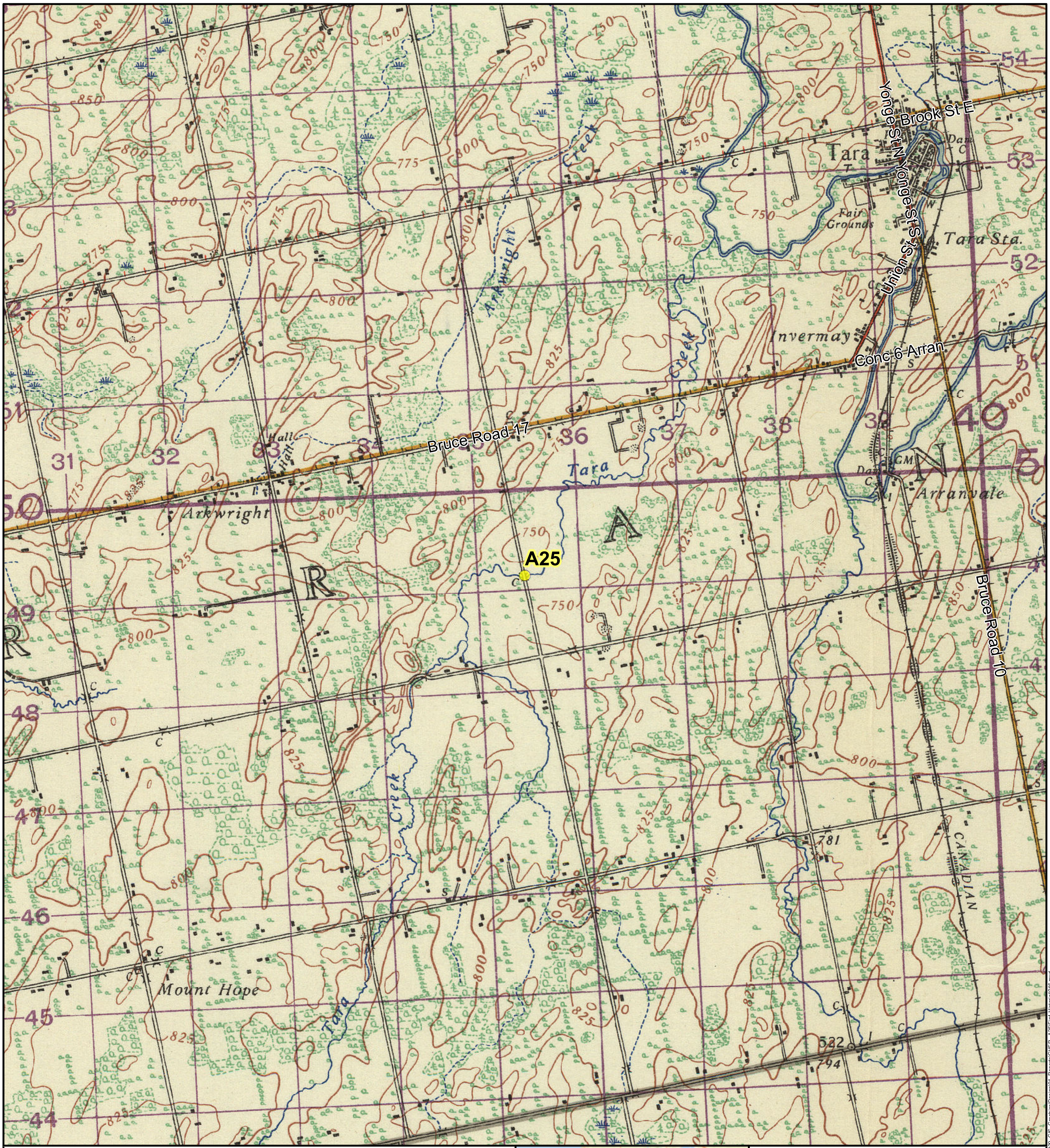
February 2021	1:50,000	Datum: NAD 83 UTM17 Source: http://wms.ess-ws.nrcan.gc.ca/wms/toporama_en
P#: 60615394	V#:	

AECOM

Figure 1

0 0.5 1 2
Kilometres

Path: I:\projects\active\60615394_Arran_Elderslie Bridges CHER\900_CAD_GIS\920_GIS_GIS_Graphics\Design\01_Reports\CHER_A25 Fig1 StudyArea Location.mxd
Date Saved: 2/25/2021 2:39:3 PM User Name: dakin



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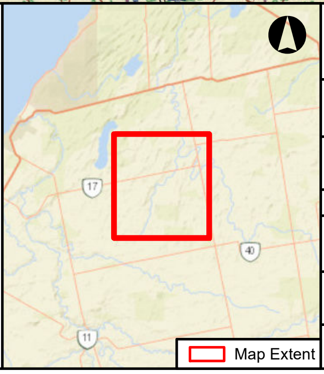
- Structure Location



Cultural Heritage Evaluation Report
Arran-Elderslie Bridge Master
Structure: A25
Bruce County, Ontario

Study Area, 1946

February 2021	1:50,000	Datum: NAD 83 UTM17 Source: LIO 2019, Department of National Defence 1946
P#: 60615394	V#:	

AECOM

Figure 4

0 0.5 1 2
Kilometres

3.2.3 Early Bridge Construction in Ontario

Bridges were a necessity from the earliest days of road construction, and were important to economic and social life, especially as mills were situated along rivers. Settlements sprang up where the mills were serviced by bridges. Construction of the railway in the 1850s made it necessary to have reliable bridges able to withstand the weight of locomotives. In addition, good road bridges were required so farmers could transport their produce to local railway stations (PHCS 2004b). Most road bridge designs that evolved were based on principles derived from railroad construction. In Ontario, the timber bridge dominated the landscape in rural areas from 1780 to 1880 and persisted into the early 20th century (Cuming 1983: 38).

Short spans were typically beam structures, and longer spans employed simple trusses, such as King and Queen Post timber trusses. Stone and wrought iron materials were also employed, but due to higher costs and a lack of skilled craftsmen such structures were generally restricted to market towns (TRCA 2011). By the 1890s, steel and concrete were becoming the materials of choice when constructing bridges given that both were less expensive and more durable than their wood and wrought iron predecessors (TRCA 2011). Steel truss structures were very common by 1900, as were steel girder bridges. After the Second World War, the increase in personal vehicles meant that stronger bridges were necessary. The Pratt truss and the Warren truss dominated the early 20th century and were typically used for spans up to 400 feet (Comp and Jackson 1977). The use of concrete in bridge construction was introduced at the beginning of the 20th century, and by the 1930s, it was challenging steel as the primary bridge construction material in Ontario (TRCA 2011).

3.2.4 History of Concrete Bridges

In 1899, A.W. Campbell advocated for concrete to provide an inexpensive durable arch span (Cuming 1983). When first constructed, concrete bridges in Ontario were built in the simple arch form. These early concrete arch bridges were mass concrete but quickly engineers mastered the material and reinforced the concrete with iron or steel (Cuming 1983). There were advantages of concrete over steel as it was inexpensive using local materials and labour, and it reduced maintenance on the bridge. The 1920s saw a boom of concrete bridge building with concrete girders being used to support short spans (Cuming 1983). Between 1905 and 1919 the earth filled arch bridge was most popular in Ontario. Most of the early activity in concrete bridge construction in Ontario focused on the earth-filled, solid spandrel arch form. The first arches were semicircular in shape while later developments used an elliptical form to achieve longer spans. The popularity of solid spandrel bridges appears to decline after 1919, although they continued to be built in small numbers into the 1930s. Many of these early 20th century earth-filled concrete arches have been removed from the Province's roads because they are too narrow to meet modern traffic needs. As a result, solid spandrel concrete arch bridges such as these that remain in active use are considered rare survivors (GRCA 2013).

In 1931, a new type of concrete bridge was introduced, the rigid frame (Cuming 1983). The rigid frame bridge style gained favour for use as a highway overpass and offered simplicity passing over creeks and streams (TRCA 2011). Concrete now challenged steel and was the primary building material. Reinforced

concrete replaced mass concrete for walls, abutments, piers and footings in the 1930s (TRCA 2011). In the 1940s, the use of concrete columns, single piers and pre-cast, pre-stressed concrete bridge forms make an appearance in Ontario (Cuming 1983). By then, construction trended toward pre-casting concrete components off-site rather than casting the concrete in place. Today, concrete is the primary bridge building material on Ontario roads (TRCA 2011).

Structurally a concrete slab bridge is the simplest to construct, relying solely upon the inherent strength of a single member for both structure and road surface. A concrete beam bridge is in essence a slab that is additionally strengthened by a number of longitudinal members. A girder bridge is a beam bridge with additional transverse supports between the beams (Kramer 2004).

3.2.5 Beam and Girder Bridge Construction

Beam or girder technology was commonly used for bridge construction in Ontario. This bridge type is comprised of girders, members placed perpendicular to the ford, supported by abutments and piers, when necessary. Simple girder bridges were constructed in the 19th century out of wood to support rail, pedestrian, and vehicular traffic primarily across water obstacles. At the turn of the 20th century, steel beams were introduced and were supported first by stone and then concrete abutments and piers. However, the large, rolled steel girders were difficult to transport and thus costlier. Plate girders afforded an economic and logistical solution as they consisted of smaller steel segments that could be welded and riveted together on site. These plate girder bridges proliferated and were commonly used to support railways in both urban and rural settings throughout the 20th century (Cleary 2007:50)

3.2.6 Construction of Structure A25

Structure A25 is a one-span slab on steel I-beam girder bridge resting on concrete abutments. The bridge carries a single lane of vehicular traffic on Sideroad 20 over Tara Creek. According to the available 2017 OSIM Inspection Report completed by B.M. Ross (**Appendix B**), the bridge was constructed in 1940.

Photographs taken during the AECOM field review and for the 2017 OSIM Inspection Report, suggests that the steel I-beams are likely are a later addition. It is likely the original 1940 bridge was a concrete slab type bridge. The steel guardrail and wooden support posts also appear to be a later addition. It may be that the concrete piled beside the west elevation of the bridge represents a former concrete barrier wall and/or deck. The 2017 OSIM Inspection Report notes that the abutments and wingwalls have been refaced and B.M. Ross provided a drawing of I-beam repairs in 2018 (**Appendix C**). No original structural drawings were available for this bridge, so the rehabilitation history cannot be confirmed.

4. Existing Conditions

A field review was undertaken by Tara Jenkins, Cultural Heritage Specialist with AECOM on February 17, 2021, to document the existing conditions of the bridge and to collect data relevant for completing a heritage evaluation of the structure. The field review was conducted from the existing right-of-way of Sideroad 20. For ease of description the bridge is considered to have a general north-south orientation. Photographic documentation of the structure is provided in **Appendix A**.

Table 1: Summary of Structure

Asset ID	Bridge Name	Bridge Type/Year Built[1]	River Crossing	Location
A25 MTO 2-079	Soper's Bridge	Girder bridge/1940	Tara Creek	Sideroad 20, south of Bruce Road 17, between Lots 20 and 21, Concession V, Municipality of Arran-Elderslie

4.1 General Landscape Context

Structure A25 carries Sideroad 20 over Tara Creek, approximately 1.2km south of Bruce Road 17. With the exception of the subject bridge, Sideroad 20 is a gravel-surfaced two-lane rural road with no posted speed limit. The section of Sideroad 20 containing the subject bridge is within a rural context. Properties immediately adjacent to the bridge consist of agricultural fields and wooded areas along the edge of Tara Creek.

4.2 Summary of Superstructure and Substructure Existing Conditions

Structure A25 is documented in the 2017 OSIM Inspection Form as constructed in 1940. Today the bridge is a single-span slab on steel I-beam girder bridge. The bridge carries a single lane of traffic on Sideroad 20 over Tara Creek. The bridge has a gravelled travel lane and is 4.6m in width. The total length of the bridge deck is 7.8m, with a span length of 7.4m.

The substructure consists of cast-in-place abutments and wingwalls. The I-beams rest on an extension of the original abutments (Photograph 4). The abutments have been refaced with parged concrete.

The superstructure consists of seven steel I-beams which rest on the abutments (Photograph 2). The I-beams form the main support element of the superstructure. The soffit and deck top are thin cast-in-place concrete slabs (Photograph 2). The barrier system, located on both sides of the bridge, consists of steel

flex beams with wood posts (Photograph 7). Black and yellow striped collision warning signs to indicate the bridge is one span is located at each end of the bridge (Photographs 5). Approaching the bridge, there is a posted load limit of 11 tonnes (Photograph 6). There is no posted speed limit specific to the bridge.

The 2017 OSIM Inspection Report noted that the structure was generally in good to fair condition with the exception of the I-beams and guardrails. Scale and rust were noted on the I-beam flanges, with heavy scaling present where the I-beams meet the concrete abutments. The report recommended that these items be replaced within the next 6-10 years.

4.3 Comparative Analysis of I-Beam Girder Bridges in Bruce County

The OSIM Inventory of Bridges owned by the Municipality of Arran-Elderslie was reviewed for this Cultural Heritage Evaluation Report. The Bridge Inventory for the Municipality indicates that there are 10 I-beam or girder bridges of the total of 63 bridges. All of the I-beam or girder bridges were built 1965 or later. It should be noted that in 1930s and 1940s in the municipality there were five concrete T-beam or slab bridges built. This type of concrete bridge would have been more typical for single lane bridges in the municipality in the 1940s. Therefore, it is likely that the subject bridge was replaced or rehabilitated after 1960 and the I-beams installed. The following table, **Table 1**, lists the I-beam girder bridges in the municipality:

Table 2: Inventory of I-Beam Girder Bridges in the Municipality of Arran-Elderslie

Structure No.	Structure Name	Road Name	Year of Construction	Length	Description
A1	Brunton Bridge	Concession 6	1989	28.8m	I-beam or girder
A2	Proud Bridge	Concession 6	2014	30m	I-beam or girder
A4	Sims Bridge	Concession 4	1979	18m	I-beam or girder
A6	Christie Bridge	Sideroad 25 South	2013	10m	I-beam or girder
A16	Gowan Bridge	Concession 12	1982	50.8m	I-beam or girder
A18	Allenford Bridge	Thomas St.	1983	22.9	I-beam or girder
E2	Gateman Bridge	Concession 2	1965	22m	I-beam or girder
E5	McAllister Bridge	Sideroad 15	1981	29.8m	I-beam or girder
E8	McClure's Mill Bridge	Thomas St.	2008	28m	I-beam or girder
E11	Lockerby Bridge	Sideroad 5	1986	24.4m	I-beam or girder

A search of historicbridges.org for bridges in Bruce County did not identify any I-beam girder bridges. In addition, the MTO Bridge Inventory for the West Region was also consulted for comparison of I-beam girder bridges outside of the Municipality of Arran-Elderslie. Of the 457 MTO bridges on the inventory, 24 are bridges listed rolled I-beam bridges that are owned and maintained by the Province. All the bridges of this type are built after 1980. Three of the bridges are one-span.

Therefore, in summary, Structure A25, is an I-beam girder type bridge which utilizes concrete abutments likely built for the 1940 concrete bridge, and is considered to be a common type of bridge in the Municipality of Arran-Elderslie. Structure A25 is not considered significant due to its type.

5. Heritage Evaluation of Structure A25

5.1 Review of Existing Heritage Registers and Additional Information

As a part of the evaluation undertaken for this CHER, AECOM reviewed municipal, provincial, and federal heritage registers and inventories including:

- Municipality of Arran-Elderslie *Official Plan*;
- Registered historic sites in the Municipality of Arran Elderslie;
- Ontario Heritage Bridge List (MTO 2008);
- Ontario Heritage Trust's online inventory of buildings, museums, and easement properties;
- Canadian Heritage Rivers System;
- *Canadian Register of Historic Places;* and,
- *Parks Canada, Directory of Federal Heritage Designations*.

Currently Structure A25 is not listed on any of the above-noted registers and is not listed or designated under the *Ontario Heritage Act* or on the Ontario Heritage Bridge List.

The following stakeholders were contacted with inquiries regarding the heritage status and for information concerning Structure A25:

Table 3: Stakeholders Consulted for this CHER

Organization	Contact Information	Date(s) of Communications	Description of Information Received
Ministry of Transportation	Sean Morris	Jan. 25, 2021	With MTO Bridge number 2-079 requested original drawings. Sean confirmed there are no original drawings on file with MTO for this bridge.
Municipality of Arran-Elderslie	Scott McLeod, Public Works Manager	Feb. 25, 2021	Requested previous rehabilitation drawings or information on the bridge. Scott did not have on record any information on the installation of the I-beams.

5.2 Ontario Regulation 9/06

Ontario Regulation 9/06 provides criteria for determining cultural heritage value or interest. If a property meets one or more of the following criteria it may be designated under Section 29, Part IV of the OHA. The criteria for determining cultural heritage value under Ontario Regulation 9/06 are outlined below:

1) The property has ***design or physical value*** because it:

- Is a rare, unique, representative or early example of a style, type, expression, material or construction method;

- Displays a high degree of craftsmanship or artistic merit; or,
- Demonstrates a high degree of technical or scientific achievement.

2) The property has ***historic or associative value*** because it:

- Has direction associations with a theme, event, belief, person, activity, organization, or institution that is significant to a community;
- Yields, or has the potential to yield information that contributes to an understanding of a community or culture; or,
- Demonstrates or reflects the work or ideas of an architect, artist, builder, designer, or theorist who is significant to a community.

3) The property has ***contextual value*** because it:

- Is important in defining, maintaining, or supporting the character of an area;
- Is physically, functionally, visually, or historically linked to its surroundings; or,
- Is a landmark.

The application of the criteria for the evaluation of the Structure 25 is provided below in **Section 5.3**.

5.3 Heritage Evaluation of the Structure A25

Table 4 summarizes the evaluation of Structure A25 against the criteria set out in Ontario Regulation 9/06. Within the environmental assessment process, Ontario Regulation 9/06 is the prevailing evaluation tool when determining if a heritage resource, in this case a bridge, has cultural heritage value.

Table 4: Evaluation of Structure A25 using Ontario Regulation 9/06

Criteria	Meets Criteria (Yes/No)	Rationale
1) The property has *design or physical value* because it:		
Ontario Heritage Act Criteria	**Yes/No**	**Analysis**
i) Is a rare, unique, representative or early example of a style, type, expression, material or construction method.	No	Structure A25 is a slab on I-beam girder bridge. It is a common example of this type of bridge in the second half of the 20th century and many are extant from this era throughout the Municipality of Arran-Elderslie. Background research and the field review of the bridge suggests that an earlier concrete slab bridge, likely built in 1940, was replaced with this current superstructure. The original cast-in-place abutments were used in the construction of Structure A25. Therefore, this bridge is not considered to represent a rare, unique, or early example of this style of structure.
ii) Displays a high degree of craftsmanship or artistic merit.	No	Structure A25 does not display a high degree of craftsmanship or artistic merit. It is an engineered structure, designed to be entirely functional.

Criteria	Meets Criteria (Yes/No)	Rationale
iii) Demonstrates a high degree of technical or scientific achievement.	No	Structure A25 does not demonstrate a high degree of technical achievement or scientific achievement.
2) The property has *historic value or associate value* because it:		
i) Has direct associations with a theme, event, belief, person, activity, organization, or institution that is significant to a community.	No	This bridge itself is not considered to have direct historical association with a theme, event, belief, person, activity, organization or institution that is significant to a community. Information regarding the bridge's designer, engineer, or construction company was not determined.
ii) Yields, or has the potential to yield information that contributes to an understanding of a community or culture.	No	Structure A25 is not considered to have the potential to yield information that contributes to an understanding of a community or culture.
iii) Demonstrates or reflects the work or ideas of an architect, artist, builder, designer, or theorist who is significant to a community.	No	Structure A25 is not known to represent the work or ideas of a particular architect or building significant to the community.
3) The property has *contextual value* because it:		
i) Is important in defining, maintaining or supporting the character of an area.	No	Structure A25 is almost invisible in the landscape apart from its railings. Therefore, it is not significantly important in defining, maintaining, or supporting the character of the area.
ii) Is physically, functionally, visually or historically linked to its surroundings.	No	Structure A25 is not physically, functionally, visually or historically linked to its surroundings.
iii) Is a landmark.	No	Due to the small scale of Structure A25, the bridge does not serve as a landmark feature.

The cultural heritage evaluation of Structure A25 determined that the subject bridge does not demonstrate cultural heritage value or interest. Therefore, a Heritage Impact Assessment of the bridge is not required as part of the environmental assessment work.

6. Conclusions and Recommendations Heritage Evaluation of Structure A25

6.1 Conclusions

Based on the results of background historical research, the field review, and application of criteria from Ontario Regulation 9/06 of the *Ontario Heritage Act*, Structure A25, Soper's Bridge, was not determined to demonstrate sufficient cultural heritage value to merit designation under the *Ontario Heritage Act*. Accordingly, no Statement of Cultural Heritage Value or Interest, or list of heritage attributes has been prepared for Structure A25 in this CHER.

This CHER serves as sufficient documentation of the structure, and no further cultural heritage reporting is required.

7. References

Primary and Secondary Sources

B.M. Ross
2017 Ontario Structure Inspection Manual- *Inspection Report: Site Number A25*. On file with B.M. Ross.

Chapman, J.L. and D.F. Putnam.
1984 *The Physiography of Southern Ontario*. 3rd Edition. Ontario Geological Survey Special Volume 2. Toronto: Ontario Ministry of Natural Resources.

Chippewas of Nawash
2010 Chippewas of Nawash Unceded First Nation – Origins. Available online at http://nawash.ca/index.cfm?page=origins

Comp, T. A. and D. Jackson
1977 "Bridge Truss Types: A Guide to Dating and Identifying", in *American Association for State and Local History*.

Cuming, D.
1983 *Discovering Heritage Bridges on Ontario's Roads*. Toronto: Boston Mills Press.

Fox, W.
1990 The Odawa. In *The Archaeology of Southern Ontario to AD 1650*. N. Ferris and C. Ellis eds., pp. 457 – 473. Ontario Archaeological Society, London: London Chapter, Occasional Paper No. 5.

H. Belden & Co.
1880 Bruce County: Bruce supplement in Illustrated atlas of the Dominion of Canada. Toronto: H. Belden & Co.

Kramer, G.
2004 *Slab, Beam & Girder Bridges in Oregon: Historic Context Statement*. Oregon: Report Prepared for the Oregon Department of Transportation.

Robertson, N.
1906 *The History of the County of Bruce: and of the Minor Municipalities Therein, Province of Ontario, Canada.* Toronto: W. Briggs.

Schmalz, P.S.
1977 *The History of the Saugeen Indians*. Ottawa: Lowe Printing Service Limited.

Provincial Standards and Resources:

Government of Ontario

2006 *O. Reg. 9/06: Criteria for Determining Cultural Heritage Value or Interest*; made under the Ontario Heritage Act. Available online at https://www.ontario.ca/laws/regulation/060009

2017 *Ontario Heritage Act, R.S.O. 1990, c.0.18.* Available online at https://www.ontario.ca/laws/statute/90o18

2017 *Planning Act, R.S.O. 1990, c. P.13.* Available online at https://www.ontario.ca/laws/statute/90p13

Ministry of Heritage, Sport, Tourism, and Culture Industries (MHSTCI)

1980 *Guidelines on the Man-Made Component of Environmental Assessments*, prepared by Weiler. Toronto. Historical Planning and Research Branch, Ontario Ministry of Culture and Recreation.

1992 *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments*.

2006 *Ontario Heritage Tool Kit.* Available online at: http://www.mtc.gov.on.ca/en/heritage/heritage_toolkit.shtml

2007 *Heritage Conservation Principles for Land Use Planning*. Available online at: http://www.mtc.gov.on.ca/en/publications/InfoSheet_Principles_LandUse_Planning.pdf

2016 *Criteria for Evaluation Potential for Built Heritage Resources and Cultural Heritage Landscapes, A Checklist for the Non-Specialist*. PDF available online.

Ministry of Municipal Affairs and Housing, Ontario (MMAH)

2020 *Provincial Policy Statement*. Toronto: Queen's Printer for Ontario. Available online at http://www.mah.gov.on.ca/Page10679.aspx

Ministry of Transportation (MTO)

2007 *Environmental Guide for Built Heritage and Cultural Heritage Landscapes*. Available online at: http://www.raqsb.mto.gov.on.ca/techpubs/eps.nsf/0/0c286507a82cde53852572d70059fdf9/$FILE/FINAL_MTO%20Env%20Guide%20BHCHL%20Final%202007%20ACC.pdf

2008 *Ontario Heritage Bridge Guidelines for Provincially Owned Bridges*. http://env-web2.uwaterloo.ca/hrcresearch/attachments/5101eba41b59b2.23220210.pdf

Appendix A: Photographs

Photograph 1: Sideroad 20, looking north (BM Ross, 2017)

Photograph 2: Soffit (BM Ross 2017

Photograph 3: View of the west girder (BM Ross, 2017)

Photograph 4: I-beam corrosion at the abutment (BM Ross, 2018)

Photograph 5: Distant view with single lane sign, looking south (AECOM 2021)

Photograph 6: View of bridge on Sideroad 20, looking south (AECOM 2021)

Photograph 7: Steel flex beam barriers, looking south (AECOM 2021)

Photograph 8: View of Tara Creek and barrier system, looking west (AECOM 2021)

Photograph 9: View of Tara Creek and barrier system, looking east (AECOM 2021)

Photograph 10: View of bridge looking north (AECOM 2021)

Appendix B: OSIM Inspection Report – Site No. A25

Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Inventory Data:

Structure Name:	Sopers Bridge		
Main Hwy / Road #:		On ☑ Under ☐	Crossing Type: Non-Navigable Waterway
Road Name:	Sideroad 20		
Structure Location:	Concession 5		
Northing:	4921338	Easting:	485011
Owner(s):	Municipality of Arran-Elderslie	Heritage Designation:	Not Designated
MTO Region:	Southwestern	Road Class:	Local
MTO District:	Owen Sound	Posted Speed:	No. of Lanes: 1
Current County:	Bruce	AADT:	% Trucks:
Geographic Twp.:	ARRAN	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Gravel
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	7.8 (m)	Fill on Structure:	0.1 (m)
Overall Str. Width:	4.8 (m)	Skew Angle:	10 (Degrees)
Total Struct. Area:	37.44 (sq.m)	Direction of Structure:	North/South
Roadway Width:	4.6 (m)	Number of Spans:	1
Span Length(s):	7.3 (m)	(m) (m) (m) (m)	(m)
Bridge Condition Summary:	Load posting	Bridge Condition Index:	28
MTO Number:	2-079	**BMROSS File Number:**	

Historical Data:

Year Built:	1940	Last Biennial Insp:	2014
Current Load Limit:	11 (tonnes)	Last Bridge Master Insp:	
Load Limit By-Law #:		Last Evaluation:	
By-Law Expiry Date:		Last Underwater Insp:	
Min.Vert. Clearance:	(m)	Last Condition Survey:	
Rehab. Date:		Rehab. Cost:	($)

Rehab. History:

Abutments and wingwalls have been refaced.

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Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Field Inspection Information:	
Date of Inspection:	04/19/2017
Inspector:	Andy Ross
Inspecting Firm:	BMRoss & Associates Limited
Others in Party:	Andy Aitken
Equipment Used:	Hammer, Camera, Measuring Tape, Chain
Weather:	Overcast
Temperature:	15 ^{o}C

Additional Investigations Required:	Priority			Estimated Cost
	N/R	Normal	Urgent	
Detailed Deck Condition Survey:	☑	☐	☐	0
Corrosion Potential Survey:	☑	☐	☐	0
Detailed Coating Condition Survey:	☑	☐	☐	0
Underwater Investigation:	☑	☐	☐	0
Fatigue Investigation:	☑	☐	☐	0
Seismic Investigation:	☑	☐	☐	0
Structure Evaluation:	☑	☐	☐	0
			Total Cost:	0

Special Notes:

Remove fill and inspect deck.

Next Detailed Inspection:	2018

Replacement Value:

Structure Type:	Bridge	Structure Area:	37	(sq.m)
Replacement Cost:	$ 155,400	Complexity Factor:	1	
		Price per sq. m.:	$ 4,200.00	

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

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Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Repair and Rehabilitation Required:

Element:	Repair and Rehabilitation Required:	Priority				Estimated Construction Cost
		6 to 10 yrs.	1 to 5 yrs.	Within 1 yr.	Urgent	
	Replacement	☑	☐	☐	☐	436000
		☐	☐	☐	☐	0
		☐	☐	☐	☐	0
		☐	☐	☐	☐	0
		☐	☐	☐	☐	0
		☐	☐	☐	☐	0
		☐	☐	☐	☐	0

Sub-Total: **$436,000**

Associated Work Required:

Mobilize / Demobilize		0
Approaches	Guiderail	32000
Traffic Control / Detours		0
Utilities		0
Right of Way		0
Environmental Study		7000
Engineering		63200
Other		0
Contingencies		50000

Total Cost: **$588,200**

Justification:

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Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Element Data:						
Element Group:	Decks				**Length:**	7.8
Element Name:	Deck Top - Thin Slab				**Width:**	4.8
Location:					**Height:**	
Material:	Cast-in-place Concrete				**Count:**	1
Element Type:					**Total Quantity:**	37.44 m2
Environment:	Benign				**Not Inspected:**	☑
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Exc.**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
			100%		$4,493	$1,797

Comments:

Recommended Work: 6-10 years
Replace.

Element Data:						
Element Group:	Decks				**Length:**	7.3
Element Name:	Soffit - Thin Slab				**Width:**	4.8
Location:					**Height:**	0.12
Material:	Cast-in-place Concrete				**Count:**	1
Element Type:					**Total Quantity:**	35.04 m2
Environment:	Moderate				**Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Exc.**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		6%	94%		$4,205	$1,770

Comments:

Recommended Work: 6-10 years
Replace.

Element Data:						
Element Group:	Barriers				**Length:**	7.8
Element Name:	Railing Systems				**Width:**	0.3
Location:					**Height:**	0.7
Material:	Steel				**Count:**	2
Element Type:	Steel Flex Beam on Wood Post				**Total Quantity:**	15.6 m
Environment:	Benign				**Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	
Condition Data:	**Exc.**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
				100%	$3,120	$0

Comments:

Recommended Work: 6-10 years
Replace.

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Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Element Data:

Element Group:	Beams/MLE's	**Length:**	7.8
Element Name:	Floor Beams	**Width:**	0.14
Location:		**Height:**	0.38
Material:	Steel	**Count:**	7
Element Type:	I-type	**Total Quantity:**	64.43 m2
Environment:	Moderate	**Not Inspected:**	☐
Protection System:	None	**BCI - Element Condition Values:**	

Condition Data:	Exc.	Good	Fair	Poor	TEV	CEV
				100%	$27,061	$0

Comments: Some scale rusting on top flanges and webs. Heavyscale at abutments.

Recommended Work: 6-10 years
Replace.

Element Data:

Element Group:	Abutments	**Length:**	
Element Name:	Abutment Walls	**Width:**	5.4
Location:		**Height:**	1.4
Material:	Cast-in-place Concrete	**Count:**	2
Element Type:	Conventional Closed	**Total Quantity:**	15.12 m2
Environment:	Benign	**Not Inspected:**	☐
Protection System:	None	**BCI - Element Condition Values:**	

Condition Data:	Exc.	Good	Fair	Poor	TEV	CEV
		100%			$13,608	$10,206

Comments:

Recommended Work: None

Element Data:

Element Group:	Abutments	**Length:**	2
Element Name:	Wingwalls	**Width:**	
Location:		**Height:**	1
Material:	Cast-in-place Concrete	**Count:**	4
Element Type:	Reinforced Concrete	**Total Quantity:**	4 m2
Environment:	Benign	**Not Inspected:**	☐
Protection System:	None	**BCI - Element Condition Values:**	

Condition Data:	Exc.	Good	Fair	Poor	TEV	CEV
		100%			$1,400	$1,050

Comments:

Recommended Work: None

Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Element Data:						
Element Group:	Embankments & Streams				**Length:**	3
Element Name:	Embankments				**Width:**	2
Location:	northwest				**Height:**	2
Material:	Retained Soil System				**Count:**	
Element Type:					**Total Quantity:**	
Environment:	Benign				**Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	

Condition Data:	**Exc.**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100%				$0

Comments:

Recommended Work: None

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Looking North

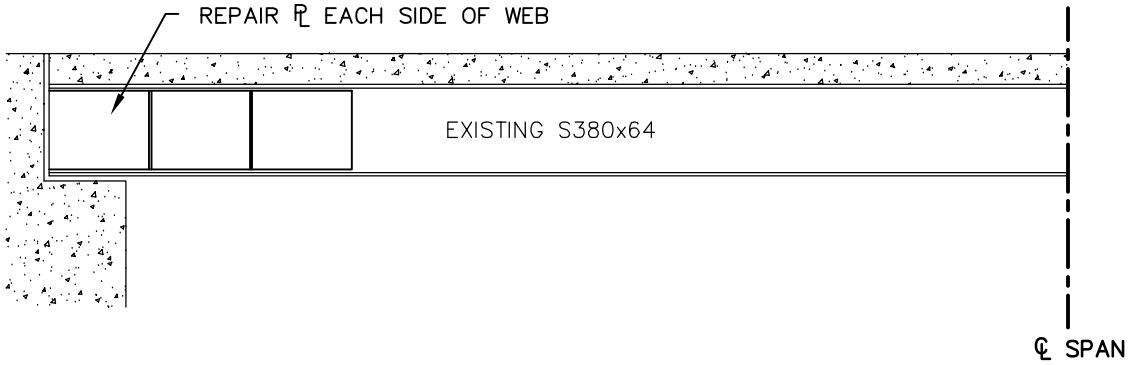
West Elevation

Soffit

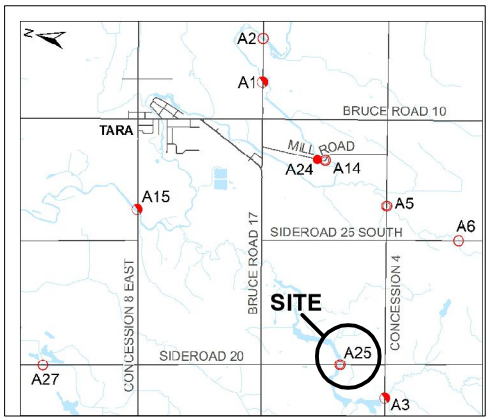
Typical Beam Corrosion

West Girder Off Plumb

Appendix C: I-Beam Repairs



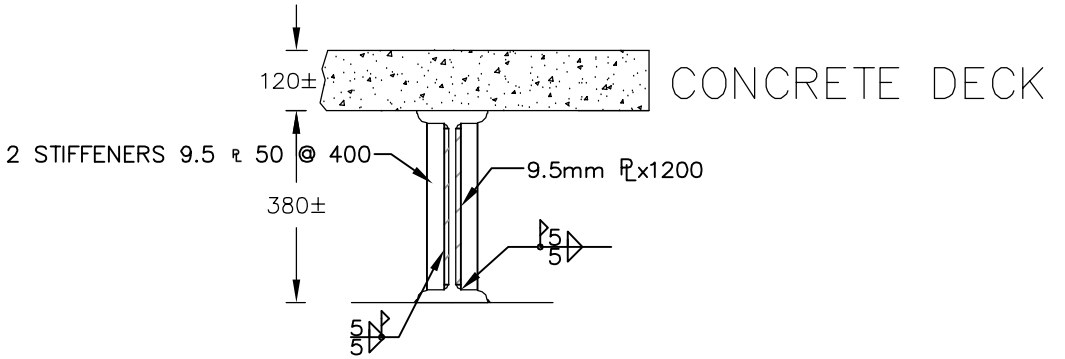
TYPICAL ELEVATION VIEW HALF OF SPAN
N.T.S.



KEY PLAN

NOTES:

1. INSTALL COVER PLATES ON BOTH SIDES OF 5 INTERIOR BEAMS AND ONLY ONE SIDE OF TWO EXTERIOR BEAMS
2. PLATE STEEL FOR REPAIRS 300W.
3. CLEAN AND COAT ALL NEW STEEL WITH ZINC–BASED PRIMER AFTER WELDING
4. NO TRAFFIC ON BRIDGE DURING REPAIRS



REPAIR DETAIL
N.T.S.

BMROSS engineering better communities	**Municipality of Arran-Elderslie** **Repair to Soper's Bridge A25** **Sideroad 20** **Nov. 2018**	**CONTRACT No.** 1	**PROJECT No** 00221
		SCALE N. T. S.	**DRAWING No.** 1 of 1

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APPENDIX D

ONTARIO STRUCTURAL INSPECTION MANUAL REPORT

Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Inventory Data:

Structure Name:	Sopers Bridge		
Main Hwy / Road #:		On ☑ Under ☐	Crossing Type: Non-Navigable Waterway
Road Name:	Sideroad 20		
Structure Location:	Concession 5		
Northing:	4921338	Easting:	485011
Owner(s):	Municipality of Arran-Elderslie	Heritage Designation:	Not Designated
MTO Region:	Southwestern	Road Class:	Local
MTO District:	Owen Sound	Posted Speed:	No. of Lanes: 1
Current County:	Bruce	AADT:	% Trucks:
Geographic Twp.:	ARRAN	Special Routes:	
Structure Group:	Beam/Girder	Surface Type:	Gravel
Structure Type:	I-beam or Girders	Detour Length Around Bridge:	(km)
Total Deck Length:	7.8 (m)	Fill on Structure:	0.1 (m)
Overall Str. Width:	4.8 (m)	Skew Angle:	10 (Degrees)
Total Struct. Area:	37.44 (sq.m)	Direction of Structure:	North/South
Roadway Width:	4.6 (m)	Number of Spans:	1
Span Length(s):	7.3 (m)	(m) (m) (m) (m)	(m)
Bridge Condition Summary:	Load posting	Bridge Condition Index:	28
MTO Number:	2-079	**BMROSS File Number:**	

Historical Data:

Year Built:	1940	Last Biennial Insp:	2014
Current Load Limit:	11 (tonnes)	Last Bridge Master Insp:	
Load Limit By-Law #:		Last Evaluation:	
By-Law Expiry Date:		Last Underwater Insp:	
Min.Vert. Clearance:	(m)	Last Condition Survey:	
Rehab. Date:		Rehab. Cost:	($)

Rehab. History:

Abutments and wingwalls have been refaced.

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Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Field Inspection Information:	
Date of Inspection:	04/19/2017
Inspector:	Andy Ross
Inspecting Firm:	BMRoss & Associates Limited
Others in Party:	Andy Aitken
Equipment Used:	Hammer, Camera, Measuring Tape, Chain
Weather:	Overcast
Temperature:	15 ^{o}C

Additional Investigations Required:	Priority			Estimated Cost
	N/R	Normal	Urgent	
Detailed Deck Condition Survey:	☑	☐	☐	0
Corrosion Potential Survey:	☑	☐	☐	0
Detailed Coating Condition Survey:	☑	☐	☐	0
Underwater Investigation:	☑	☐	☐	0
Fatigue Investigation:	☑	☐	☐	0
Seismic Investigation:	☑	☐	☐	0
Structure Evaluation:	☑	☐	☐	0
			Total Cost:	0

Special Notes:

Remove fill and inspect deck.

Next Detailed Inspection:	2018

Replacement Value:

Structure Type:	Bridge	Structure Area:	37	(sq.m)
Replacement Cost:	$ 155,400	Complexity Factor:	1	
		Price per sq. m.:	$ 4,200.00	

Note: Replacement cost calculation is based on the above price per square metre, the total deck or structure area for the existing structure and the chosen complexity factor. This cost may not be a suitable value when budgeting to replace a structure.

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Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Repair and Rehabilitation Required:

Element:	Repair and Rehabilitation Required:	Priority				Estimated Construction Cost
		6 to 10 yrs.	1 to 5 yrs.	Within 1 yr.	Urgent	
	Replacement	☑	☐	☐	☐	436000
		☐	☐	☐	☐	0
		☐	☐	☐	☐	0
		☐	☐	☐	☐	0
		☐	☐	☐	☐	0
		☐	☐	☐	☐	0
		☐	☐	☐	☐	0

Sub-Total: **$436,000**

Associated Work Required:

Mobilize / Demobilize		0
Approaches	Guiderail	32000
Traffic Control / Detours		0
Utilities		0
Right of Way		0
Environmental Study		7000
Engineering		63200
Other		0
Contingencies		50000

Total Cost: **$588,200**

Justification:

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Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Element Data:

Element Group:	Decks	**Length:**	7.8
Element Name:	Deck Top - Thin Slab	**Width:**	4.8
Location:		**Height:**	
Material:	Cast-in-place Concrete	**Count:**	1
Element Type:		**Total Quantity:**	37.44 m2
Environment:	Benign	**Not Inspected:**	☑
Protection System:	None	**BCI - Element Condition Values:**	

Condition Data:	Exc.	Good	Fair	Poor	TEV	CEV
			100%		$4,493	$1,797

Comments:

Recommended Work: 6-10 years
Replace.

Element Data:

Element Group:	Decks	**Length:**	7.3
Element Name:	Soffit - Thin Slab	**Width:**	4.8
Location:		**Height:**	0.12
Material:	Cast-in-place Concrete	**Count:**	1
Element Type:		**Total Quantity:**	35.04 m2
Environment:	Moderate	**Not Inspected:**	☐
Protection System:	None	**BCI - Element Condition Values:**	

Condition Data:	Exc.	Good	Fair	Poor	TEV	CEV
		6%	94%		$4,205	$1,770

Comments:

Recommended Work: 6-10 years
Replace.

Element Data:

Element Group:	Barriers	**Length:**	7.8
Element Name:	Railing Systems	**Width:**	0.3
Location:		**Height:**	0.7
Material:	Steel	**Count:**	2
Element Type:	Steel Flex Beam on Wood Post	**Total Quantity:**	15.6 m
Environment:	Benign	**Not Inspected:**	☐
Protection System:	None	**BCI - Element Condition Values:**	

Condition Data:	Exc.	Good	Fair	Poor	TEV	
				100%	$3,120	$0

Comments:

Recommended Work: 6-10 years
Replace.

Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Element Data:

Element Group:	Beams/MLE's	**Length:**	7.8
Element Name:	Floor Beams	**Width:**	0.14
Location:		**Height:**	0.38
Material:	Steel	**Count:**	7
Element Type:	I-type	**Total Quantity:**	64.43 m2
Environment:	Moderate	**Not Inspected:**	☐
Protection System:	None	**BCI - Element Condition Values:**	

Condition Data:	Exc.	Good	Fair	Poor	TEV	CEV
				100%	$27,061	$0

Comments: Some scale rusting on top flanges and webs. Heavyscale at abutments.

Recommended Work: 6-10 years
Replace.

Element Data:

Element Group:	Abutments	**Length:**	
Element Name:	Abutment Walls	**Width:**	5.4
Location:		**Height:**	1.4
Material:	Cast-in-place Concrete	**Count:**	2
Element Type:	Conventional Closed	**Total Quantity:**	15.12 m2
Environment:	Benign	**Not Inspected:**	☐
Protection System:	None	**BCI - Element Condition Values:**	

Condition Data:	Exc.	Good	Fair	Poor	TEV	
		100%			$13,608	$10,206

Comments:

Recommended Work: None

Element Data:

Element Group:	Abutments	**Length:**	2
Element Name:	Wingwalls	**Width:**	
Location:		**Height:**	1
Material:	Cast-in-place Concrete	**Count:**	4
Element Type:	Reinforced Concrete	**Total Quantity:**	4 m2
Environment:	Benign	**Not Inspected:**	☐
Protection System:	None	**BCI - Element Condition Values:**	

Condition Data:	Exc.	Good	Fair	Poor	TEV	
		100%			$1,400	$1,050

Comments:

Recommended Work: None

Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Element Data:						
Element Group:	Embankments & Streams				**Length:**	3
Element Name:	Embankments				**Width:**	2
Location:	northwest				**Height:**	2
Material:	Retained Soil System				**Count:**	
Element Type:					**Total Quantity:**	
Environment:	Benign				**Not Inspected:**	☐
Protection System:	None				**BCI - Element Condition Values:**	

Condition Data:	**Exc.**	**Good**	**Fair**	**Poor**	**TEV**	**CEV**
		100%				$0

Comments:

Recommended Work: None

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Ontario Structure Inspection Manual - Inspection Report: **Site Number:** A25

Looking North

West Elevation

Ontario Structure Inspection Manual - Inspection Report:

Site Number: A25

Soffit

Typical Beam Corrosion

West Girder Off Plumb

APPENDIX E

HYDROLOGY REPORT

MUNICIPALITY OF ARRAN-ELDERSLIE
SOPERS BRIDGE REPLACEMENT
STRUCTURE A25, SIDEROAD 20
TARA CREEK

HYDROLOGY REPORT

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MUNICIPALITY OF ARRAN-ELDERSLIE
SOPERS BRIDGE REPLACEMENT
STRUCTURE A25, SIDEROAD 20
TARA CREEK

HYDROLOGY REPORT

January 5, 2022

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street
Goderich, ON N7A 2T4
Phone: 519-524-2641

www.bmross.net

File No. BR1372

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Engineers and Planners
62 North Street, Goderich, ON N7A 2T4
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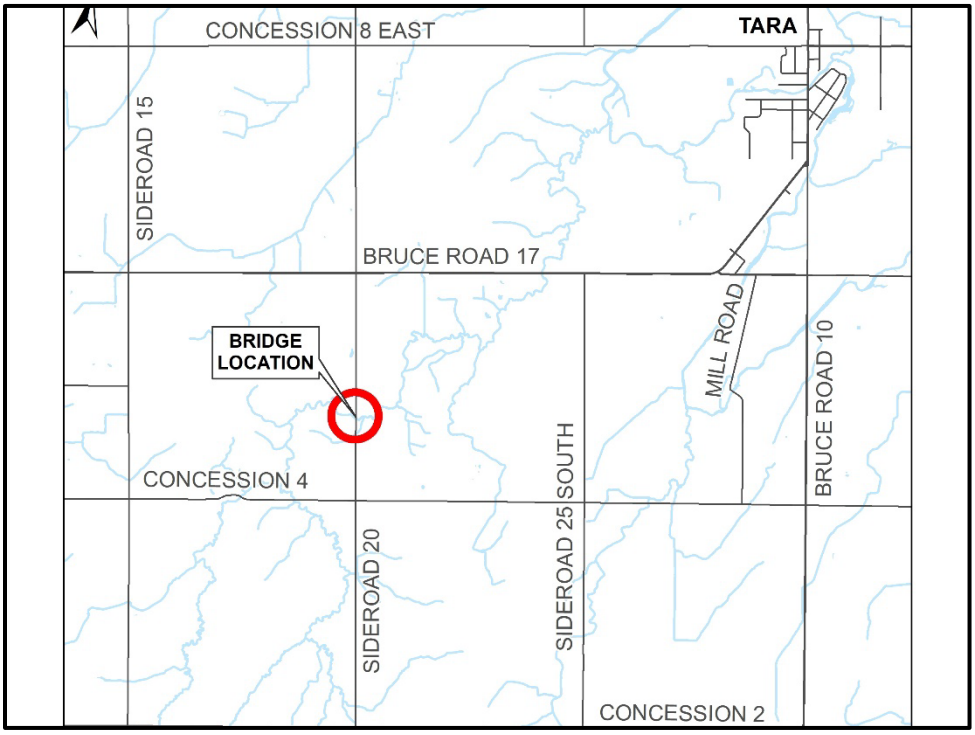
File No. BR1372

MUNICIPALITY OF ARRAN-ELDERSLIE
SOPERS BRIDGE REPLACEMENT
STRUCTURE A25, SIDEROAD 20
TARA CREEK
HYDROLOGY REPORT

1.0 INTRODUCTION

The Municipality of Arran-Elderslie is proposing a bridge replacement on Sideroad 20 between Concession 4 and Bruce Road 17. The bridge is located on Tara Creek within a predominately rural area of Mid-Western Ontario. The bridge is within the watershed of Grey Sauble Conservation (GSC). The following figure illustrates the site location.



Location Plan

This report summarizes the required performance standards for the replacement bridge, documents the calculation of design flows, and details the development of the hydraulic model used to evaluate the performance of the existing and proposed openings.

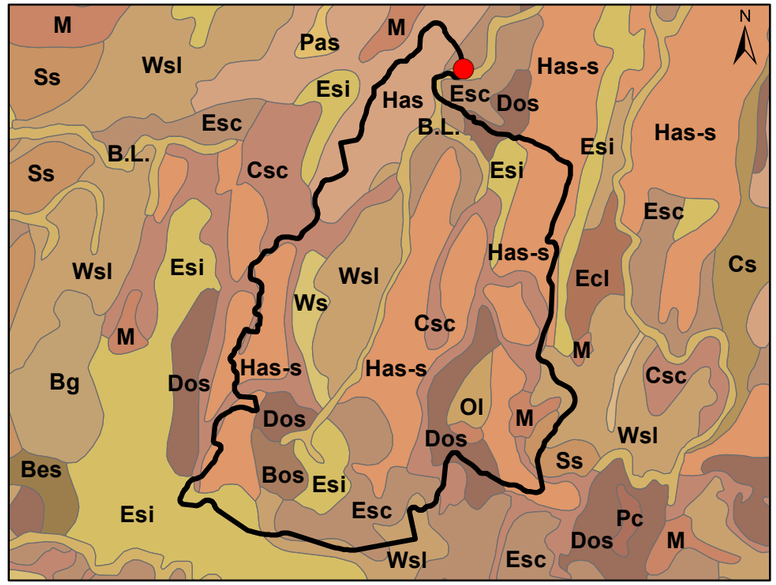
2.0 DESCRIPTION OF WATERSHED

The watershed drains 27 square kilometres southwest of Sideroad 20. The watershed is located within the Municipality of Arran-Elderslie. The, over 15 kilometre long, watercourse rises at the upper limit of the watershed at 265 metres above mean sea level and flows to the bottom end of this portion of the watershed at elevation 225 metres above mean sea level. Figure 1 presents the watershed drainage area and includes details related to the slope of the main channel.

The climate for the project drainage area can be considered as temperate. The mean annual temperature is about 7°C with a mean annual precipitation over 1000 mm of which about 30% occurs as snowfall.

The soils within the watershed generally lie in the B-C hydrologic class with the predominant soils being silt loam and only about 5% of the watershed currently under a form of forested vegetation. The remaining lands are primarily in agricultural production. The agricultural areas consist of an even split between row crop production, small grain production, and hay crop or pasture.

There does not appear to be any trends in agriculture that would alter the land use statistics to the point where there would be any major increase in runoff coefficients. The projected watershed trend is currently to more cropping and less hay and pasture (grassed land) production. The forest cover is not varying to any great extent.



WATERSHED SOIL MAP

1:90,000

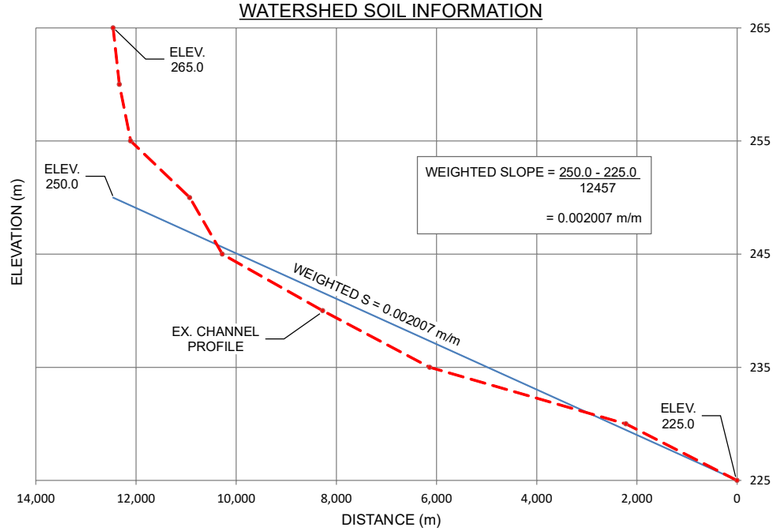
TOTAL DRAINAGE AREA

SOIL TYPE	AREA (km^2)	
HARKAWAY SILT LOAM - STONY PHASE (Has-s)	8.67	32.1%
CHESLEY SILTY CLAY LOAM (Csc)	3.22	11.9%
WATERLOO SANDY LOAM (WsI)	3.12	11.6%
ELDERSLIE SILTY CLAY LOAM (Esc)	3.05	11.3%
HARKAWAY SILT LOAM (Has)	2.13	7.9%
ELDERSLIE SILT LOAM (Esi)	1.75	6.5%
DONNYBROOK SANDY LOAM (Dos)	1.72	6.4%
BOTTOM LAND (B.L.)	0.98	3.6%
WIARTON SILT LOAM (Ws)	0.69	2.6%
BOOKTON SANDY LOAM (Bos)	0.59	2.2%
OSPREY LOAM (Ol)	0.48	1.8%
MUCK (M)	0.41	1.5%
SAUGEEN SILT LOAM (Ss)	0.19	0.7%
TOTAL	27.00	100%

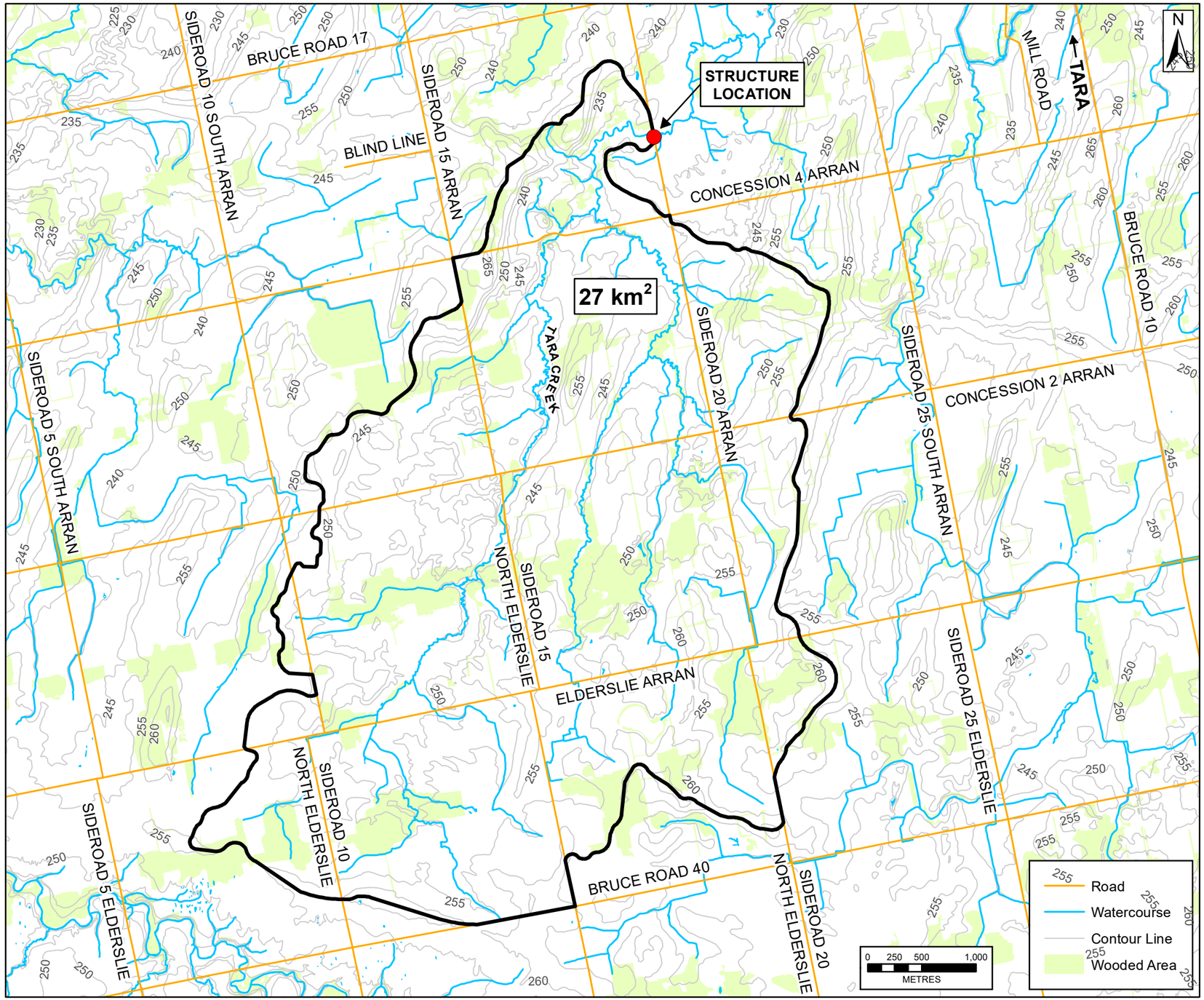
WOODED AREAS

SOIL TYPE	AREA (km^2)	
HARKAWAY SILT LOAM - STONY PHASE (Has-s)	1.369	27.6%
CHESLEY SILTY CLAY LOAM (Csc)	0.78	15.7%
HARKAWAY SILT LOAM (Has)	0.605	12.2%
WATERLOO SANDY LOAM (WsI)	0.518	10.5%
ELDERSLIE SILT LOAM (Esi)	0.512	10.3%
DONNYBROOK SANDY LOAM (Dos)	0.339	6.8%
ELDERSLIE SILTY CLAY LOAM (Esc)	0.262	5.3%
MUCK (M)	0.251	5.1%
BOOKTON SANDY LOAM (Bos)	0.128	2.6%
BOTTOM LAND (B.L.)	0.076	1.5%
WIARTON SILT LOAM (Ws)	0.074	1.5%
OSPREY LOAM (Ol)	0.022	0.4%
SAUGEEN SILT LOAM (Ss)	0.017	0.3%
TOTAL	4.95	100%

WATERSHED SOIL INFORMATION



WATERSHED SLOPE



WATERSHED MAP

1:40,000

BMROSS engineering better communities

MUNICIPALITY OF ARRAN-ELDERSLIE
REPLACEMENT OF SOPERS BRIDGE
WATERSHED MAP
SIDEROAD 20 ARRAN - 0.75 km NORTH OF CONCESSION 4 ARRAN

DATE	PROJECT No.
MARCH 2021	BR1372
SCALE	FIGURE No.
AS SHOWN	1

3.0 EXISTING STRUCTURE AND REPLACEMENT

3.1 Existing Structure

The existing structure is a steel I-beam bridge on a 10^{o} skew. The structure was built in 1940, and as per BMROSS survey has a clear span of 7.3m.

The width between the curbs is approximately 4.6m, making it a single lane structure. In the past, work on the structure has included repairs to the abutments and wingwalls, with deck patching since 2008. As per the Ontario Structural Inspection Manual (OSIM) report from 2018, the structure is recommended to be replaced before the year 2023 and should have a load posting until that time. The following photograph illustrates details of the existing structure:

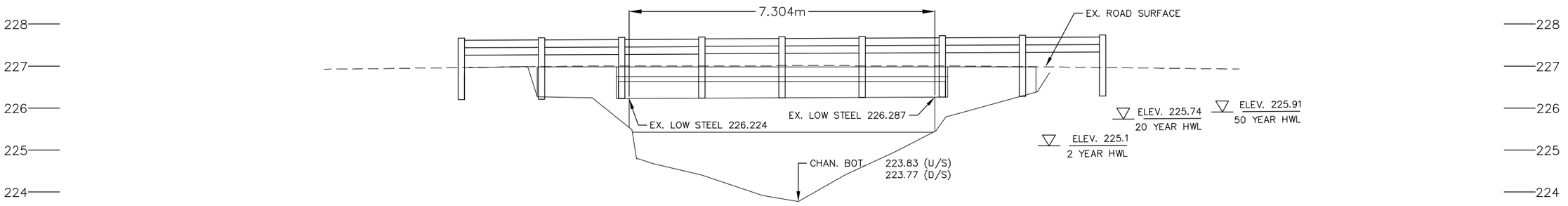
East Elevation

3.2 Proposed Structure

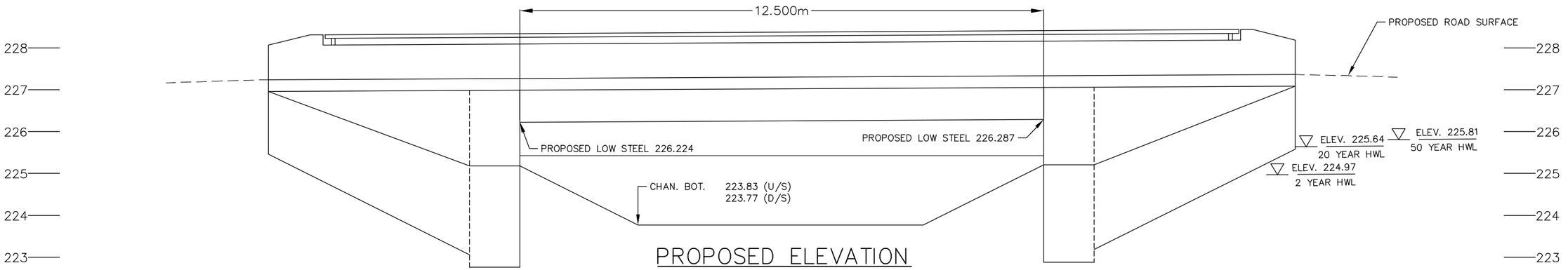
There are two options being considered for the proposed structure; steel beam or hollowcore slab. They have identical spans and low concrete, however the existing road profile over the structure will need to be raised up to 300mm for the steel beam option to accommodate the taller beams when compared to the thickness of the slab. The existing approach road profile approximately 20m south of the structure will be raised for the slab and beam options 200mm and 500mm respectively. They will be a 12.5m clear span bridge on a 10^{o} skew . No stream realignment is required at this site.

It is suggested that the new structure be designed with a deck width of sufficient size to accommodate two full lanes of traffic and cross-fall of 2% should be used on the deck and approaches. Approach slabs should be used at each end of the bridge where possible to reduce dynamic loads and parapet walls should be constructed on each side of the new structure for vehicle safety.

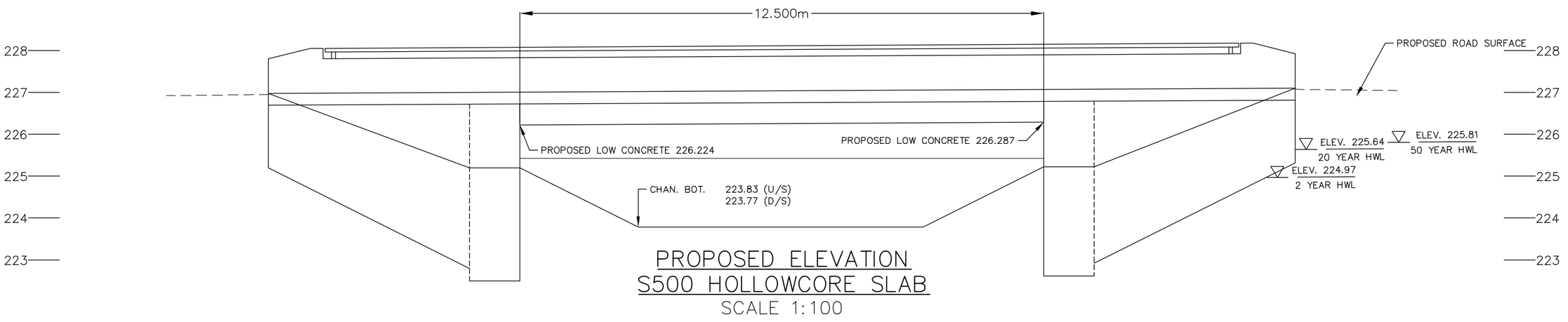
Structure opening details of both the proposed and existing structures are presented in Figure 2.



EXISTING ELEVATION
SCALE 1:100



PROPOSED ELEVATION
W760x147 BEAMS
SCALE 1:100



PROPOSED ELEVATION
S500 HOLLOWCORE SLAB
SCALE 1:100

BMROSS engineering better communities	**Municipality of Arran-Elderslie** **Existing and Proposed Structure Openings** Soper Bridge Replacement Sideroad 20 Tara Creek	**Date** Nov. 2021 **SCALE (11x17)** 1:100	**PROJECT No.** BR1372 **Figure No.** 2

4.0 DESIGN CRITERIA

Design criteria for the structure replacement include the following:

- Design storm frequency.
- Allowable vertical clearance between the design backwater elevation and the low concrete of the structure.
- Allowable increase in the flood elevation upstream of the structure.

4.1 Design Storms

Sideroad 20 in this block is a low volume road. MTO directive B-100 notes, that for structures located on local roads, a 10 year design storm is acceptable. Stream diversions and channelization for local roads must convey the 2 year event; but the combined channel and floodplain shall accommodate a 25 year flood, or the regional event, if increases in flooding may impact buildings or developable lands. Based on a field survey, there are no buildings within the section of the floodplain immediately upstream of the structure location.

4.2 Vertical Clearance – Soffit Clearance

As recommended in the Canadian Highway Bridge Design Code (Clause 1.10.7.1), the design clearance as measured from the lowest point of the structure soffit to the HWL corresponding to the design flood should be 0.3m. MTO directive B-100 suggests that the soffit elevation can be based on an existing opening; provided that it has proven to perform satisfactory in the past. Additionally, for local roads with low vulnerability structures, soffit clearance less than 0.3m is acceptable (Table 2 from the MTO directive, suggests a soffit clearance of 0 metres). There are no freeboard requirements for local volume roads.

Given the above, and based on an understanding that the existing bridge, with a similar soffit elevation, has performed well in the past, it is suggested that the new bridge be designed to provide a soffit clearance of 300mm during the design storm event.

4.3 Backwater Elevation

In accordance with good design practice there should be minimal if any increase in the flood elevations for the full range of design storms.

5.0 HYDROLOGIC ANALYSIS

5.1 Approach

Given the small size of the watershed, there are no streamflow records for this watercourse and as such, the selected design flows were developed by a number of different computational methods using the following theoretical methods:

i. HydroPak2 – Computer program developed by Jack W. MacPherson. Uses HYMO type calculations to estimate flows. This program has been approved for use in floodplain mapping and is a result of many years of use in Ontario as a hydrologic model.

ii. Regional Flood Analysis (FLOODONT) – provided by Environment Canada and developed under the Canada/Ontario Flood Damage Reduction Program was utilized for results related to the flood index method and the regional regression equations.
iii. OFAT III – Online calculator managed by the Ministry of Natural Resources.
iv. Rational Method – This method considers the entire drainage area as a single unit and estimates the peak discharge at the most downstream point of that area.

Appendix A includes a summary of the hydrologic parameters used in the analysis to define the watershed.

5.2 Meteorological Data

From rainfall perspective, meteorological data was obtained from the Wiarton station as summarized below:

Table 1
Point Rainfall Values

	Return Period Rainfall Amounts (mm)						
Duration	2 Yr	5 Yr	10 Yr	20 Yr	50 Yr	100 Yr	Hazel
6 Hour	41.2	56.7	67.0	80.0	89.6	99.2	212.0

5.3 Design Flow Summary

Appendix B includes the computation output from Hydropak, FLOODONT, OFAT III, and the Rational Method, for the full range of flows. A summary of the results for each computational method are summarized below in Table 2:

Table 2
Summary of Theoretical Flood Analysis

Data Source	**Frequency Event and Corresponding Flow (m^3/s)**						
	2	**5**	**10**	**20**	**50**	**100**	**Hazel**
HydroPak2	2.9	7.1	10.4	15.1	18.9	22.8	103.5
Flood Index Method	4.7	6.2	7.6	8.9	10.5	11.9	--
OAFT III – Flood Index	4.7	6.2	7.6	9.2	11.2	12.9	--
OFAT III – Regression Eq.	6.4	10.2	13.1	16.1	19.3	22.6	--
Transposed	10.4	13.2	15.0	16.5	18.4	19.7	--
Rational Method	7.5	9.0	10.5	13.5	15.0	16.5	--

The above values show a general consistency across each storm event and provide confidence in the results.

5.4 Design Storm Event

With consideration to the range of flows developed, the following design flood flow values were selected:

Table 3
Proposed Design Flood Flows

Design Storm	2 yr	5 yr	10 yr	20 yr	50 yr	100 yr	Hazel
Flow (m^3/s)	7.0	10.0	12.0	15.0	18.0	22.0	70.5

For the 10 year design flow, a peak flow of 12 m^3/s is suggested for use in conjunction with the evaluation of vertical soffit clearance for both the existing and proposed structures.

6.0 HYDRAULIC ANALYSIS

6.1 Overview

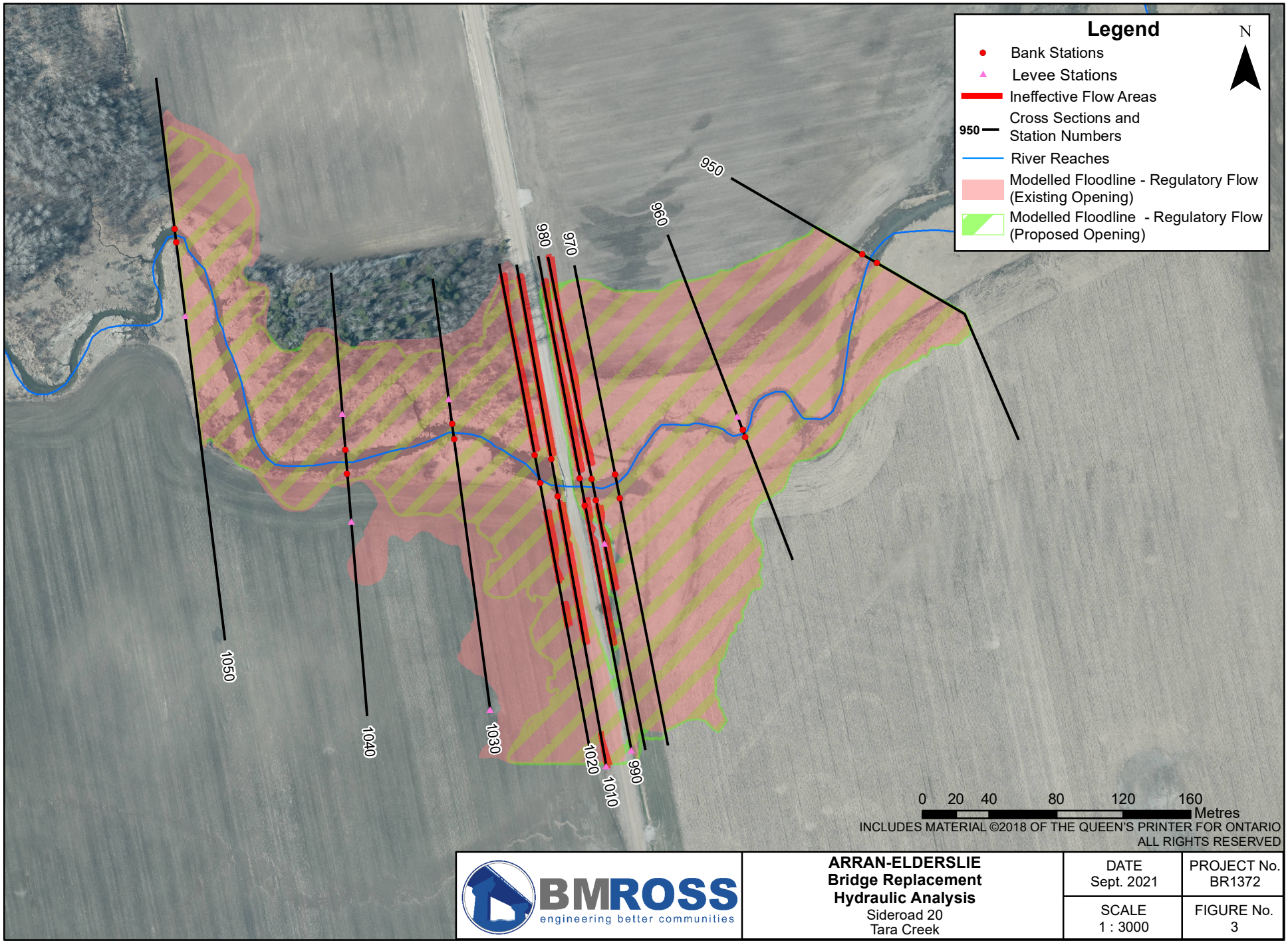
BMROSS carried out a hydraulic analysis of the existing and proposed conditions to quantify water surface elevation differences. The software used for the analysis was GeoHECRAS, produced by CivilGeo Engineering Software, version 3.1.0.1192. The HEC-RAS analysis engine was version 5.0.7. The GeoHECRAS hydraulic model used in this analysis is based upon computer generated cross-sections developed from the field survey information obtained by BMROSS and supplemented with DTM point information obtained from the Province. Existing channel properties and floodplain vegetation were noted in the model to produce the mathematical representations of the hydraulic properties of this section of Tara Creek. The analysis used the full range of river flows summarized in Table 3 including the Regional Storm Event (Hazel).

The location of the HEC-RAS cross sections is shown on Figure 3 and illustrates the Regional flood plain developed for the bridge site.

6.2 Model Calibration and Sensitivity

The lack of historical flood flows and levels at the structure site make it difficult to calibrate the model properly, however, the use of the GeoHECRAS analysis techniques gives confidence in the information produced by the software.

Based on casual observations by staff there is no history of road overtopping at the site.



BMROSS
engineering better communities

ARRAN-ELDERSLIE
Bridge Replacement
Hydraulic Analysis
Sideroad 20
Tara Creek

DATE	PROJECT No.
Sept. 2021	BR1372
SCALE	FIGURE No.
1 : 3000	3

6.3 Results

Both the existing and proposed models exhibit stable flow regimes and produce reliable computed water surface elevations. Table 4 summarizes the results of the water surface elevations as modeled for both of the existing and proposed structures. Both proposed options yielded the same calculated water surface elevations at each station and profile. For clarity, only one column is shown for these two proposed options.

The GeoHECRAS report for each of the developed models has been attached as digital files on USB, and provides further details related to water level, energy level, and expected velocities at each of the cross section points along the watercourse.

A review of the values provided in Table 4 (particular the sections above the bridge) reveals that there is no increase in the proposed water levels compared with that of the existing condition and in fact there is an overall decrease in the proposed water surface elevations because of the longer span. There is a minor water surface elevation increase the first section downstream Sideroad 20, the largest being for the regional storm of 230mm. This dissipates quickly with the next downstream cross section being only 9mm higher for the regional storm.

Table 5 summarizes the results of the hydraulic modeling for both the existing and proposed structures. The values generated at cross section 1010 are used for comparison purposes as this section is immediately upstream of the structure.

Table 4
Model Comparison – Flood Elevations

Reach Details			Water Surface		
River Sta	**Storm Event**	**Storm Flow** (m3/s)	**Existing Elevation** (m)	**Both Proposed Elevations** (m)	**Difference (Prop. vs Exist.)** (mm)
1040	2Yr	7	225.41	225.42	10
	5Yr	10	225.66	225.64	-20
	10Yr	12	225.80	225.78	-20
	20Yr	15	225.96	225.95	-10
	50Yr	18	226.05	226.03	-20
	100Yr	22	226.21	226.13	-80
	Reg	70.5	227.11	226.89	-220
1030	2Yr	7	225.03	224.85	-180
	5Yr	10	225.28	225.15	-130
	10Yr	12	225.43	225.30	-130
	20Yr	15	225.68	225.51	-170
	50Yr	18	225.90	225.75	-150
	100Yr	22	226.14	226.00	-140
	Reg	70.5	227.06	226.81	-250
1020	2Yr	7	225.11	224.97	-140
	5Yr	10	225.37	225.27	-100
	10Yr	12	225.53	225.44	-90
	20Yr	15	225.74	225.64	-100
	50Yr	18	225.92	225.81	-110
	100Yr	22	226.13	226.00	-130
	Reg	70.5	227.04	226.76	-280
1010	2Yr	7	225.10	224.97	-130
	5Yr	10	225.37	225.27	-100
	10Yr	12	225.53	225.43	-100
	20Yr	15	225.74	225.64	-100
	50Yr	18	225.91	225.81	-100
	100Yr	22	226.13	226.00	-130
	Reg	70.5	227.04	226.75	-290
1000	Bridge				
990	2Yr	7	224.94	224.95	10
	5Yr	10	225.23	225.25	20
	10Yr	12	225.39	225.41	20
	20Yr	15	225.59	225.61	20
	50Yr	18	225.75	225.77	20
	100Yr	22	225.94	225.96	20
	Reg	70.5	226.08	226.31	230

Note: Output from the GeoHECRAS model is presented in a downstream direction.

Table 5
Structure Comparison

Description		Structure			
		Existing		Proposed	
Road elev. at low point		226.4 m 150 m south of the structure			
Flow event at which road floods		> 100 yr		> 100 yr	
Road elev. at structure		227.0	m	Slab 227.0 Steel 227.3	m m
Flow event at which structure floods		Regional		> Regional	
Low concrete		226.22	m	226.22	m
Modeled Headwater Elevation at Structure					
2 Year		225.10	m	224.97	m
5 Year		225.37	m	225.27	m
10 Year		225.53	m	225.43	m
20 Year		225.74	m	225.64	m
50 Year		225.91	m	225.81	m
100 Year		226.13	m	226.00	m
Regional		227.04	m	226.75	m
Clearance to Low Concrete					
2 Year		1120	mm	1250	mm
5 Year		850	mm	950	mm
10 Year		690	mm	790	mm
20 Year		480	mm	580	mm
50 Year		310	mm	410	mm
100 Year		90	mm	220	mm
Regional		-820	mm	-530	mm
Velocity through structure	20 Yr	0.55	m/s	0.60	m/s
	100 Yr	0.61	m/s	0.65	m/s

Clearance, under a 10 year storm event, for both the existing and proposed low soffit is greater than 300 mm, and can maintain this level of clearance for the 20 year event. The proposed option increases the clearance under all storm events. Coupled with the fact there has been no historic issue of plugging/blockages reported under the existing bridge (which has similar clearance) the proposed clearance should be considered satisfactory.

6.4 Erosion Protection

Based on the output from the HEC-RAS model, the proposed structure will generate a velocity value, through the bridge, under a 100-year storm event of about 0.65 m/s. This value is low enough to not require erosion protection.

However, to ensure the proposed structure is protected, and using other velocity values at other cross sections, an arbitrary velocity of 2.5 m/s was used to estimate that moderately sized rip rap with a nominal diameter of 230 mm would be sufficient. Refer to Appendix C for rip rap sizing calculations.

7.0 CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the proposed bridge will not adversely affect any structures within the Design Storm floodplain. As analyzed using GeoHECRAS, sufficient clearance under the 20 year design flow of 15 m^3/s, will be available at the bridge site.

Erosion protection at the bridge site should be provided to protect the stream banks and slow the rate of scour in the watercourse. With velocities in the range of 0.65 m/s under a 100-year storm event, it is recommended that a nominal 230 mm stone rip rap be used where appropriate. The rip rap should be placed on the channel slopes at each end of the structure and under the deck to the design flood flow level.

It is therefore recommended that:

1. The proposed bridge replacement of either option be used for final design on Tara Creek at Sideroad 20 (Structure A25) in the Municipality of Arran-Elderslie.
2. Grey Sauble Conservation should be prepared to approve the proposed structure under their “Development Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation.”
3. Rip rap protection, nominal 230 mm stone, should be placed on the stream banks for erosion protection at the bridge site.

All of which is respectfully submitted.

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Dale Erb, P. Eng.

Per _____
:
Jeff Jones, P. Eng.

APPENDIX A

PHYSICAL AND HYDROLOGIC PARAMETERS AND STORM FLOW SUMMARY INFORMATION

1.1 WATERSHED INFILTRATION BREAKDOWN

The total watershed upstream is 27km^2.

Soil Type	Hydrologic Class	Land Area	Factored Area	A Horizon (cm)	S %	S_a - Surface Infiltration		F_c - Percolation	
						S_a	Weighted	mm/hr	Weighted
Harkaway Silt Loam									
Stony Phase	B	16.5	0.61	12.7	31.3	4.0	2.4	6.1	3.721
Muck	D	0.5	0.02	0.0	27.0	0.0	0.0	3.5	0.07
Chesley Silty Clay Loam	C-B	7.0	0.26	12.7	23.3	3.0	0.8	3.5	0.91
Brookston Clay Loam	B-C	3.0	0.11	17.8	25.7	4.6	0.5	3.5	0.385
		27.0					**3.7**		**5.1**

1.2 SOILS COMPLEX CURVE NUMBER - CONDITION II

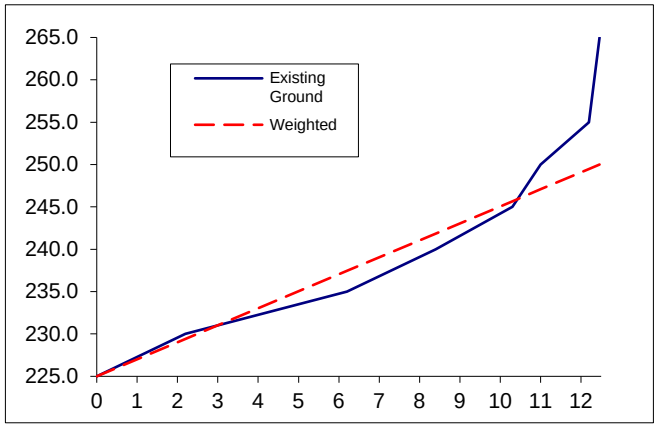
Land Use	Hydrologic Condition	Hydrologic Class	Area	Factored Area	Curve Number - Con.II	
					CN	Weighted
Wooded - Silt Loam	Imperfect	B	2.80	0.1	66	6.6
Wooded - Muck	Very Poor	D	0.25	0.01	83	0.8
Wooded - Silty Clay Loam	Imperfect	C-B	1.50	0.06	70	4.2
Wooded - Clay Loam	Poor	B-C	0.40	0.01	72	0.7
Agricultural, row crops - Silt Loam	Imperfect	B	13.70	0.51	81	41.3
Agricultural, row crops - Muck	Very Poor	D	0.25	0.01	91	0.9
Agricultural, row crops - Silty Clay Loam	Imperfect	C-B	5.50	0.2	83	16.6
Agricultural, row crops - Clay Loam	Poor	B-C	2.60	0.1	85	8.5
			27.00			**79.6**

1.3 SOILS COMPLEX CURVE NUMBER - CONDITION III

94.4

1.4 WATERSHED PROFILE

Dist. (km)	Ground Elev. (m)	Weighted Elev. (m)
0.0	225.0	225.0
2.2	230.0	229.4
6.2	235.0	237.4
8.4	240.0	241.9
10.3	245.0	245.7
11.0	250.0	247.1
12.2	255.0	249.5
12.5	265.0	250.0



1.5 WATERSHED DATA SHEET

1.5.1 Geographic Data

Divide Elevation	265.0	m	Subwat. Height	40.0	m
Outlet Elevation	225.0	m	Weighted Height	25.0	m
Subwat. Length	8.0	km	Hydraulic Length	12.5	km
Subwat. Width	5.0	km	Lgth./Width		
Drainage Area	27.00	km^2	Weighted Slope	0.00201	m/m
Equivalent Circle	50.2	km^2		2.01	m/km

1.5.2 Infiltration Data

CN (II)	80		
CN (III)	94		
Sa	3.7	mm	Surface Infiltration capacity
Sd	4.8	mm	Depression Storage
Fc	5.1	mm/hr	Deep Percolation Rate - Minimum Infiltration Rate (underlying soil)
A	0.1		Surface Layer Vegetal Factor - Surface Porosity (not significant)
MAR	500	mm	Mean Annual Runoff
MAP	1168	mm	Mean Annual Precipitation
bfi	0.45		Base Flow Index
	7%		Accumulated Lakes and Swamps
	3		Flood Index Region
	C		Multiple Regression Region

1.5.3 Unit Hydrograph Data

Tp	6.00	Hydrograph Time to Peak
Tr/Tp	3.03	Ratio of recession limb over time to peak
K	7.00	Unitgraph Recession K
B	0.12	Unit Volume Index

1.5.4 Sauble River Flood Flows Transposed to Soper Bridge Site - Based on Historic Data

Sauble Watershed = 312

Soper Br. Watershed = 27

Areal Reduction Formula = $Q_1/Q_2 = (A_1/A_2)^{factor}$ factor = 0.85

Sauble Storm Event (Year)	Sauble Design Flow (m^3/s)	**Transposed Soper Design Flow (m^3/s)**
2	83	**10.4**
5	106	**13.2**
10	120	**15.0**
20	132	**16.5**
50	147	**18.4**
100	158	**19.7**

1.5.5 Rainfall Data and Storm Event Flow

Rainfall Station: Wiarton (6-Hour SCS Type II Distribution)

Frequency Event	2	5	10	20	50	100	HAZEL
Precipitation (mm)	*41.2*	*56.7*	*67.0*	*80.0*	*89.6*	*99.2*	*212.0*
HydroPak2 (m^3/s)	2.9	7.1	10.4	15.1	18.9	22.8	70.5
Flood Index	4.7	6.2	7.6	8.9	10.5	11.9	0.0
OFATIII - Index	4.7	6.2	7.6	9.2	11.2	12.9	0.0
OFATIII - Regrssion	6.4	10.2	13.1	16.1	19.3	22.6	0.0
Transposed	10.4	13.2	15.0	16.5	18.4	19.7	0.0
Rational Method	7.5	9.0	10.5	13.5	15.0	16.5	0.0
Hydropak File No.	*1*	*2*	*3*	*4*	*5*	*6*	*6*

Design (m^3/s)	**7.0**	**10.0**	**12.0**	**15.0**	**18.0**	**22.0**	**70.5**

APPENDIX B

HYDROPAK2 / FLOODONT
INPUT AND OUTPUT DATA FILES

DEVELOPMENT OF HYDROGRAPH

```
HYDRO-PAK2 SCS CN Generator by J.MacPherson RR#3 Durham Ont.         PAGE   1
Licensed to B. M. Ross and Associates, Goderich, Ontario

        Data Disk Name
 watershed title              dT    drainage    weighted    watershed  hydraulic
                              hr      area       height       height    length
                                       sk          m           m         km
                           0.25      27.000      40.00        25.00     12.50

Trial   TYPE         TP   TR/TP    Qp    Vol      B     K       n   T eff
  1   <5%  ARS      5.21   4.48   0.45  23.75   0.09   9.24   2.15  28.54
  2   >9%  ARS      7.28   1.82   0.71  25.90   0.19   4.90   5.46  20.53
  3   CAB  SCS      2.67   1.67   2.11  26.98   0.21   3.34    7.12
  4   BPS  SCS      6.30   1.67   0.89  27.00   0.21   7.89   16.81
  5   CCP  SCS      3.17   1.67   1.77  26.98   0.21   3.97    8.46
  6        ARS      6.00   3.03   0.55  24.87   0.12   7.00   3.04  24.20
```

2 YEAR STORM EVENT

```
_____________________________________________________________________________
                                    Data Stored on File---- A:\LOC-1.DAT

 6 Hr SCS Distribution
Hourly Accumulated Precipitation in mm.
   2.1   5.4  30.1  36.7  39.6  41.2
Hourly Accumulated Runoff in mm.
   0.0   0.0   3.7   5.3   5.3   5.3
 Minimum Infiltration Rate is   5.10 mm/hr
ARS  UNITGRAPH       B=  0.12     K=  7.00 hrs.    TP=  6.00 hrs.
                D.A.= 27.000  sk       CN= 80.0     dT=0.25  hrs.

  *** LOCAL HYDROGRAPH ***
Hourly Flow Values in Cubic Metres per Second
    0.00    0.00    0.00    0.37    1.15    1.91    2.49    2.81    2.92    2.86
    2.68    2.44    2.15    1.87    1.62    1.41    1.22    1.06    0.92    0.79
    0.69    0.60    0.52    0.45    0.39    0.34    0.29    0.27    0.26    0.25
    0.23    0.22    0.21    0.20    0.19    0.19    0.18    0.17    0.16    0.15
Peak Flow=      2.92 cms     Peak Time=  9.0 hrs.   Volume=         132*1000 cm
```

5 YEAR STORM EVENT

```
_____________________________________________________________________________
                                      Data Stored on File---- A:\LOC-2.DAT

 6 Hr SCS Distribution
Hourly Accumulated Precipitation in mm.
   2.8   7.4  41.4  50.5  54.4  56.7
Hourly Accumulated Runoff in mm.
   0.0   0.0   8.9  12.9  12.9  12.9
 Minimum Infiltration Rate is   5.10 mm/hr
ARS  UNITGRAPH       B=  0.12     K=  7.00 hrs.    TP=  6.00 hrs.
                D.A.= 27.000  sk       CN= 80.0     dT=0.25  hrs.

  *** LOCAL HYDROGRAPH ***
Hourly Flow Values in Cubic Metres per Second
    0.00    0.00    0.01    0.90    2.75    4.61    6.00    6.81    7.08    6.95
    6.52    5.92    5.24    4.56    3.95    3.42    2.97    2.57    2.23    1.93
    1.68    1.45    1.26    1.09    0.95    0.82    0.71    0.66    0.63    0.60
    0.57    0.54    0.52    0.49    0.47    0.45    0.43    0.41    0.39    0.37
    0.02
Peak Flow=      7.08 cms     Peak Time=  9.0 hrs.   Volume=         320*1000 cm
```

10 YEAR STORM EVENT

```
                                        Data Stored on File---- A:\LOC-3.DAT

 6 Hr SCS Distribution
Hourly Accumulated Precipitation in mm.
   3.3   8.7  48.9  59.6  64.3  67.0
Hourly Accumulated Runoff in mm.
   0.0   0.0  13.1  18.7  18.9  18.9
 Minimum Infiltration Rate is   5.10 mm/hr
ARS  UNITGRAPH       B=  0.12     K=  7.00 hrs.    TP=  6.00 hrs.
                D.A.= 27.000  sk       CN= 80.0     dT=0.25  hrs.

  *** LOCAL HYDROGRAPH ***
Hourly Flow Values in Cubic Metres per Second
    0.00    0.00    0.03    1.33    4.02    6.74    8.78    9.97   10.37   10.17
    9.55    8.68    7.68    6.68    5.79    5.02    4.35    3.77    3.27    2.83
    2.46    2.13    1.85    1.60    1.39    1.20    1.04    0.97    0.92    0.88
    0.84    0.80    0.76    0.73    0.69    0.66    0.63    0.60    0.57    0.54
    0.05
Peak Flow=     10.37 cms     Peak Time=  9.0 hrs.   Volume=         469*1000 cm
```

25 YEAR STORM EVENT

```
                                        Data Stored on File---- A:\LOC-4.DAT

 6 Hr SCS Distribution
Hourly Accumulated Precipitation in mm.
   4.0  10.4  58.4  71.2  76.8  80.0
Hourly Accumulated Runoff in mm.
   0.0   0.0  19.1  26.8  27.4  27.4
 Minimum Infiltration Rate is   5.10 mm/hr
ARS  UNITGRAPH       B=  0.12     K=  7.00 hrs.    TP=  6.00 hrs.
                D.A.= 27.000  sk       CN= 80.0     dT=0.25  hrs.

  *** LOCAL HYDROGRAPH ***
Hourly Flow Values in Cubic Metres per Second
    0.00    0.00    0.05    1.95    5.81    9.75   12.73   14.47   15.08   14.80
   13.91   12.64   11.19    9.74    8.44    7.32    6.34    5.50    4.77    4.13
    3.58    3.11    2.69    2.33    2.02    1.75    1.52    1.41    1.34    1.28
    1.22    1.16    1.11    1.06    1.01    0.96    0.92    0.87    0.83    0.79
    0.08
Peak Flow=     15.08 cms     Peak Time=  9.3 hrs.   Volume=         682*1000 cm
```

50 YEAR STORM EVENT

```
                                        Data Stored on File---- A:\LOC-5.DAT

 6 Hr SCS Distribution
Hourly Accumulated Precipitation in mm.
   4.5  11.6  65.4  79.7  86.0  89.6
Hourly Accumulated Runoff in mm.
   0.0   0.0  23.9  33.1  34.3  34.3
 Minimum Infiltration Rate is   5.10 mm/hr
ARS  UNITGRAPH       B=  0.12     K=  7.00 hrs.    TP=  6.00 hrs.
                D.A.= 27.000  sk       CN= 80.0     dT=0.25  hrs.

  *** LOCAL HYDROGRAPH ***
Hourly Flow Values in Cubic Metres per Second
    0.00    0.00    0.07    2.45    7.25   12.15   15.87   18.06   18.83   18.49
   17.38   15.80   14.00   12.18   10.56    9.16    7.94    6.88    5.96    5.17
    4.48    3.89    3.37    2.92    2.53    2.19    1.91    1.76    1.67    1.60
    1.52    1.45    1.38    1.32    1.26    1.20    1.14    1.09    1.04    0.98
    0.12
Peak Flow=     18.83 cms     Peak Time=  9.3 hrs.   Volume=         853*1000 cm
```

100 YEAR STORM EVENT

```
                                        Data Stored on File---- A:\LOC-6.DAT

 6 Hr SCS Distribution
Hourly Accumulated Precipitation in mm.
   5.0  12.9  72.4  88.3  95.2  99.2
Hourly Accumulated Runoff in mm.
   0.0   0.0  28.9  39.7  41.6  41.6
 Minimum Infiltration Rate is   5.10 mm/hr
ARS  UNITGRAPH       B=  0.12     K=  7.00 hrs.    TP=  6.00 hrs.
                D.A.= 27.000  sk       CN= 80.0     dT=0.25  hrs.

  *** LOCAL HYDROGRAPH ***
Hourly Flow Values in Cubic Metres per Second
    0.00    0.00    0.09    2.99    8.75   14.66   19.17   21.84   22.79   22.39
   21.06   19.15   16.97   14.78   12.81   11.11    9.63    8.35    7.24    6.27
    5.44    4.71    4.09    3.54    3.07    2.66    2.31    2.14    2.03    1.94
    1.85    1.76    1.68    1.60    1.53    1.45    1.39    1.32    1.26    1.18
    0.15    0.01
Peak Flow=     22.80 cms     Peak Time=  9.3 hrs.   Volume=        1033*1000 cm
```

REGIONAL STORM EVENT

```
                                        Data Stored on File---- A:\LOC-7.DAT

HAZEL Regional Storm
Hourly Accumulated Precipitation in mm.
   6.4  10.6  17.0  29.7  46.6  59.4  82.7  95.4 108.1 161.1 199.3 212.0

Hourly Accumulated Runoff in mm.
   0.0   0.0   0.3   3.6  11.8  19.4  36.7  44.3  51.9  99.8 132.9 140.5

 Minimum Infiltration Rate is   5.10 mm/hr
ARS  UNITGRAPH       B=  0.12     K=  7.00 hrs.    TP=  6.00 hrs.
                D.A.= 27.000  sk       CN= 80.0     dT=0.25  hrs.

  *** LOCAL HYDROGRAPH ***
Hourly Flow Values in Cubic Metres per Second
    0.00    0.00    0.00    0.07    0.61    2.21    5.09    9.72   15.23   21.43
   31.43   44.74   57.28   65.99   70.06   70.03   66.93   61.84   55.69   49.17
   42.87   37.19   32.24   27.95   24.23   21.00   18.21   15.79   13.71   11.94
   10.45    9.23    8.19    7.36    6.83    6.47    6.17    5.88    5.61    5.35
    5.06    4.66    4.22    3.70    3.16    2.80    1.93    0.70    0.11
Peak Flow=     70.50 cms     Peak Time= 15.5 hrs.   Volume=        3494*1000 cm
```

FLOODONT

FLOOD FREQUENCY ESTIMATION IN REGION 3
BASIN: BR1372

INPUT DATA USED FOR BASIC INDEX FLOOD ESTIMATION

BASIN DRAINAGE AREA: 27.0 (sq.km)

INDEX FLOOD METHOD - REGION 3

RETURN PERIOD (YEARS)	MAXIMUM INSTANTANEOUS DISCHARGE (m3/s)
2	4.7
5	6.2
10	7.6
20	8.9
50	10.5
100	11.9
200	13.2
500	14.9

APPENDIX C

RIP RAP SIZING CALCULATIONS

Design Flow 22.0 m^3/s

Structure Exit Velocity: 2.5 m/s **Note**: Not based on calculations. Value is conservative.

Method No. 1 : Based on USEPA Tables:

Formula: $y=ax^b$ Where: a = 50.8719
b = 1.79527

Calculated Rock Size (USEPA): 264 mm

Method No. 2 : Based on MTO Chart I4-6

Formula: y=a+bx+cx^2+dx^3... Where: a = 2.0786
b = -20.2571
c = 33.3073
d = -1.51143

Calculated Rock Size (MTO): 183 mm

Selected Rock Size (Average USEPA / MTO charts) **223.5** mm

Use **230** mm

Maximum Stone Size	1.5	times D_{50}	**345**	mm
Thickness of Rip-Rap Layer	2.25	times D_{50}	**520**	mm

APPENDIX F

PUBLIC CONSULTATION PROGRAM

From:	Scott McLeod
To:	cnadministrator@nawash.ca
Cc:	crystal.buch@canada.ca; gordon.voogd@canada.ca; shainah.macfarlane@canada.ca; miguel.iriondo@canada.ca; meng.koh@canada.ca; cao@arran-elderslie.ca; "Carly""; "Neill, Andrea (OMAFRA)"
Subject:	Infrastructure Canada Consultation
Date:	Thursday, May 7, 2020 4:17:13 PM
Attachments:	Chippewas of Nawash .pdf

Dear Chief Greg Nadjiwon

Please see attached letter of consultation on the replacement of the Soper Bridge in Arran-Elderslie.

Thanks,

Scott McLeod

Municipality of Arran-Elderslie
Public Works Manager
works@arran-elderslie.ca
Office: 519-363-3039 Ext 115
Fax: 519-363-9337
Cell: 519-373-9781

From:	Scott McLeod
To:	sfn@saugeen.org
Cc:	crystal.buch@canada.ca; gordon.voogd@canada.ca; shainah.macfarlane@canada.ca; miguel.iriondo@canada.ca; meng.koh@canada.ca; cao@arran-elderslie.ca; "Carly""; "Neill, Andrea (OMAFRA)"
Subject:	Infrastructure Canada Consultation
Date:	Thursday, May 7, 2020 4:13:59 PM
Attachments:	Saugeen First Nation.pdf

Dear Chief Lester Anoquot

Please see attached letter of consultation on the replacement of the Soper Bridge in Arran-Elderslie.

Thanks,

Scott McLeod

Municipality of Arran-Elderslie
Public Works Manager
works@arran-elderslie.ca
Office: 519-363-3039 Ext 115
Fax: 519-363-9337
Cell: 519-373-9781

THE CORPORATION OF THE MUNICIPALITY OF ARRAN-ELDERSLIE
1925 Bruce Road 10, Box 70, Chesley, ON N0G 1L0
519-363-3039 Fax: 519-363-2203 info@arran-elderslie.ca

Chief: Greg Nadjiwon
Chippewas of Nawash First Nation
135 Lakeshore Blvd.
Neyaashiinigmiing, Ont
N0H 2T0

May 6, 2020

Subject: Replacement of Soper's Bridge

Dear: Chief Greg Nadjiwon

I am writing to notify you that the Municipality of Arran-Elderslie has been approved for financial support under Infrastructure Canada's (INFC) Investing in Canada Infrastructure Program (ICIP) – to replace the existing Soper Bridge. I am also writing to provide you with information on the proposed project and to provide you with the opportunity to convey any issues or concerns regarding possible impacts to Aboriginal rights or title or any other concerns that the Chippewas of Nawash First Nation may have with regard to this project.

This project will involve the replacement of the existing Soper's Bridge on Sideroad 20 in Arran. [Map attached]. The new structure will be a two-lane concrete girder bridge with an approximate span of 10 metres. Project work will include the removal of the existing structure. Approximately 50 m on each side of the bridge will be excavated, soil compacted and replaced to proper grade heights as well as widened to fit the alignment of the new bridge.

Prior to proceeding with this project, we would like to know if Chief Nadjiwon would have any questions or concerns regarding impacts to Aboriginal rights or title or if there any other concerns with regard to the proposed project. Furthermore, should you require additional information on the proposed project, please contact myself Scott McLeod Public Works Manager for Arran-Elderslie, by telephone at 519-373-9781 or by email at works@arran-elderslie.ca. I would appreciate hearing back from you by June 12, 2020 If it is not possible to respond within this time frame, would you kindly contact me to establish a mutually agreed upon time frame.

I would like to thank you in advance for your consideration to this request and look forward to hearing back from you.

Sincerely Yours,

Scott McLeod, Public Works Manager
Municipality of Arran-Elderslie

Cc: Crystal Buch crystal.buch@canada.ca
Gordon Voogd gordon.voogd@canada.ca
Shainah MacFarlane shaninah.macfarlane@canada.ca
Miguel Iriondo miguel.iriondo@canada.ca
Meng Koh meng.koh@canada.ca
Bill Jones cao@arran-elderslie.ca
Carly Steinhoff recreation@arran-elderslie.ca
Andrea Neill, Andrea.Neill@ontario.ca

THE CORPORATION OF THE MUNICIPALITY OF ARRAN-ELDERSLIE
1925 Bruce Road 10, Box 70, Chesley, ON N0G 1L0
519-363-3039 Fax: 519-363-2203 info@arran-elderslie.ca

Chief: Lester Anoquot
Saugeen First Nation
6493 Highway 21,
R.R. #1 Southampton, Ont
N0H 2L0

May 6, 2020

Subject: Replacement of Soper's Bridge

Dear: Chief Lester Anoquot

I am writing to notify you that the Municipality of Arran-Elderslie has been approved for financial support under Infrastructure Canada's (INFC) Investing in Canada Infrastructure Program (ICIP) – to replace the existing Soper Bridge. I am also writing to provide you with information on the proposed project and to provide you with the opportunity to convey any issues or concerns regarding possible impacts to Aboriginal rights or title or any other concerns that the Saugeen First Nation may have with regard to this project.

This project will involve the replacement of the existing Soper's Bridge on Sideroad 20 in Arran. [Map attached]. The new structure will be a two-lane concrete girder bridge with an approximate span of 10 metres. Project work will include the removal of the existing structure. Approximately 50 m on each side of the bridge will be excavated, soil compacted and replaced to proper grade heights as well as widened to fit the alignment of the new bridge.

Prior to proceeding with this project, we would like to know if Chief Anoquot would have any questions or concerns regarding impacts to Aboriginal rights or title or if there any other concerns with regard to the proposed project. Furthermore, should you require additional information on the proposed project, please contact myself Scott McLeod Public Works Manager for Arran-Elderslie, by telephone at 519-373-9781 or by email at works@arran-elderslie.ca. I would appreciate hearing back from you by June 12, 2020 If it is not possible to respond within this time frame, would you kindly contact me to establish a mutually agreed upon time frame.

I would like to thank you in advance for your consideration to this request and look forward to hearing back from you.

Sincerely Yours,

Scott McLeod, Public Works Manager
Municipality of Arran-Elderslie

Cc: Crystal Buch crystal.buch@canada.ca
Gordon Voogd gordon.voogd@canada.ca
Shainah MacFarlane shaninah.macfarlane@canada.ca
Miguel Iriondo miguel.iriondo@canada.ca
Meng Koh meng.koh@canada.ca
Bill Jones cao@arran-elderslie.ca
Carly Steinhoff recreation@arran-elderslie.ca
Andrea Neill, Andrea.Neill@ontario.ca

From: Lester Anoquot
To: works@arran-elderslie.ca
Subject: Super Bridge Arran Elderslie
Date: Friday, May 8, 2020 11:36:03 AM

Hi Scott, thanks for the update on the Soper Bridge in Arran Elderslie. Stay safe, Stay healthy.

MUNICIPALITY OF ARRAN-ELDERSLIE

CLASS ENVIRONMENTAL ASSESSMENT FOR REPLACEMENT OF SOPERS BRIDGE

NOTICE OF STUDY COMMENCEMENT

THE PROJECT:

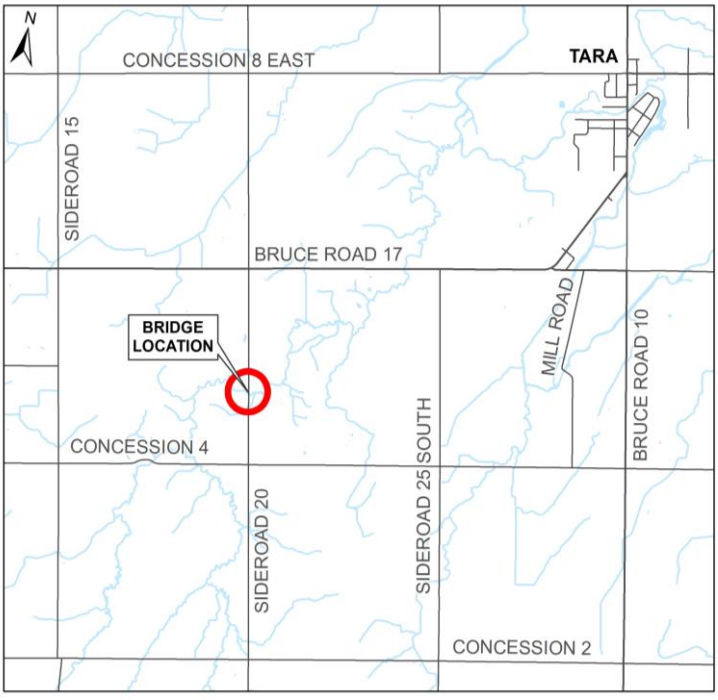
The Municipality of Arran-Elderslie has initiated a Class Environmental Assessment (Class EA) process to consider options associated with replacement of Sopers Bridge which spans Tara Creek along Sideroad 20, southwest of the community of Tara (as shown on the key plan). Recent engineering inspections of the structure have identified significant deterioration with many bridge components, necessitating replacement of the crossing. Due to the extent of work needed to replace the structure, it is anticipated that Sideroad 20 would be completely closed to traffic for a period of 4-5 months during construction. Detours would be provided on adjacent local roads. At this time, replacement of the crossing is tentatively scheduled for 2021.

THE ENVIRONMENTAL SCREENING PROCESS:

The planning for this project is following the planning process established for Schedule B activities under the Municipal Class Environmental Assessment (Class EA) document. Schedule B projects are approved subject to the completion of a screening process. The purpose of the screening process is to identify any potential environmental impacts associated with the proposal and to plan for appropriate mitigation of any impacts. The process includes consultation with the public, Aboriginal communities, stakeholders and review agencies. This notice is being issued to advise of the start of study investigations. There will be additional opportunities for public input and involvement as the study progresses.

PUBLIC INVOLVEMENT:

Public input and comments are invited for incorporation into the planning and design of this project and will be received until **October 30, 2020**, at the address listed below. Any comments collected in conjunction with the study, will be maintained on file for use during the project and may be included in project documentation. With the exception of personal information, all comments will become part of the public record. For further information on this project, or to review the Municipal Class EA process, please contact the project engineers: B.M. Ross and Associates Ltd.: 62 North Street, Goderich, Ontario, N7A 2T4. Telephone: (519) 524-2641. Fax: (519) 524-4403. Kelly Vader, Environmental Planner (e-mail: kvader@bmross.net).



Scott McLeod, Public Works Manager
Municipality of Arran-Elderslie

This Notice issued September 30, 2020

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street, Goderich, ON N7A 2T4
p. (519) 524-2641 **www.bmross.net**

File No. BR1372

September 30, 2020

Review Agency
(see attached list)

RE: Class EA to Replace Sopers Bridge
Municipality of Arran-Elderslie

The Municipality of Arran-Elderslie has initiated a Class Environmental Assessment (Class EA) process to consider options associated with replacement of Sopers Bridge which spans Tara Creek along Sideroad 20, southwest of the community of Tara (as shown on the attached plan). Recent engineering inspections of the structure have identified significant deterioration with many bridge components, necessitating replacement of the crossing. Due to the extent of work needed to replace the structure, it is anticipated that Sideroad 20 would be completely closed to traffic for a period of 4 - 5 months during construction. Detours would be provided on adjacent local roads. At this time, replacement of the crossing is tentatively scheduled for 2021.

The planning for this project is following the planning process established for Schedule "B" activities as described in the Municipal Engineers Association Municipal Class Environmental Assessment (Class EA) document. The purpose of the Environmental Assessment process is to identify any potential environmental impacts associated with the project and to plan for appropriate mitigation of any impacts. The process includes additional consultation with the public, First Nation and Métis communities, project stakeholders and government review agencies.

Your organization has been identified as possibly having an interest in this project and we are soliciting your input. Please forward your response to our office by November 6, 2020. If you have any questions or require further information, please contact the undersigned at kvader@bmross.net or by phone at 1-888-524-2641.

Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

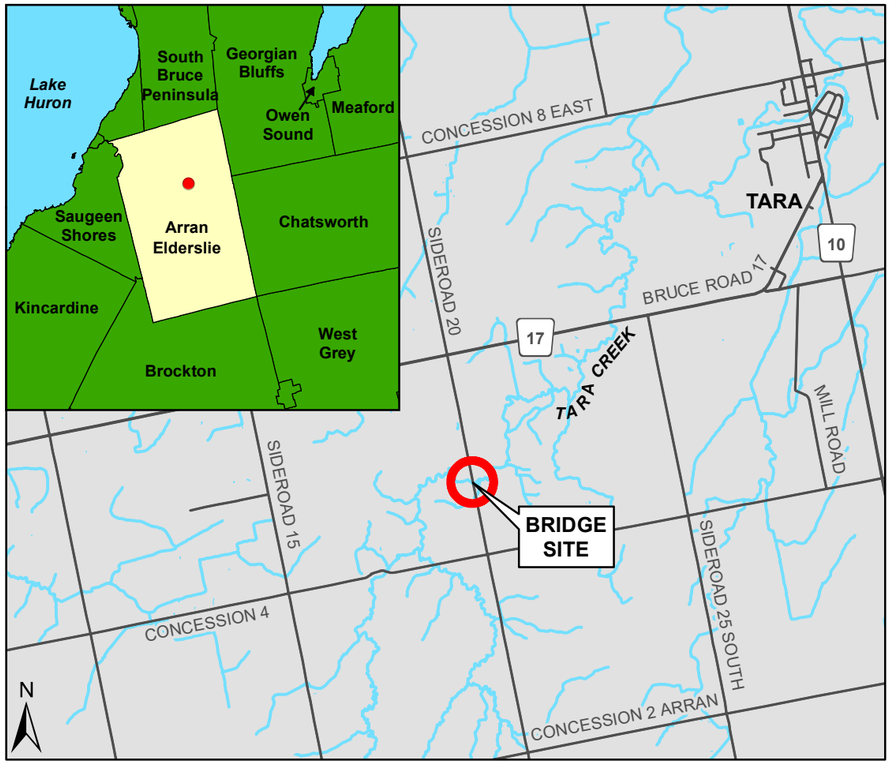
KV:hv
Encl.
cc. Scott McLeod, Arran-Elderslie

Z:\BR1372-Arran-Elderslie-Soper_Bridge_A25\WP\Class EA\Agency\BR1372-2020-09-30-Agency Let.docx

MUNICIPALITY OF ARRAN-ELDERSLIE
CLASS EA FOR REPLACEMENT OF SOPERS BRIDGE

REVIEW AGENCY CIRCULATION LIST

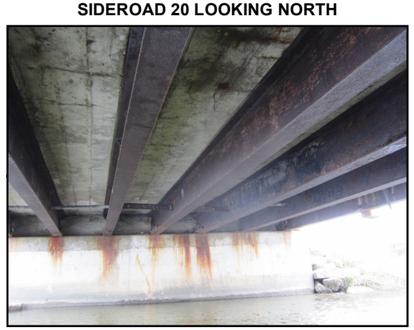
REVIEW AGENCY	INVOLVEMENT
Ministry of the Environment, Conservation & Parks (SW District) - EA Coordinator - email	Mandatory Contact
Ministry of Natural Resources and Forestry Guelph	Potential Impact on Natural Features
Ministry of Heritage, Sport, Tourism and Culture Industries - email	Potential Impact to Cultural Heritage Features
Bruce County - Highways Department - email	- General Information
Grey-Sauble Conservation Authority - email	Potential Impact on Natural Features
Arran-Elderslie	Proponent
Department of Fisheries and Oceans Canada	Burlington
Bruce Grey Catholic District School Board Transportation Services	Impact on Transportation
Bluewater District School Board	Impact on Transportation



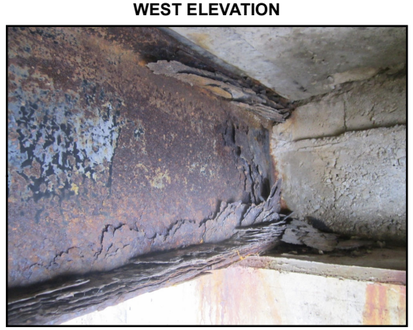
KEY PLAN
NOT TO SCALE

SIDEROAD 20 LOOKING NORTH

WEST ELEVATION



DECK SOFFIT



TYPICAL BEAM CORROSION

SITE PHOTOS TAKEN IN APRIL 2017

AERIAL PHOTOGRAPHY OF PROJECT AREA
SCALE 1 : 2,500

BMROSS engineering better communities

MUNICIPALITY OF ARRAN-ELDERSLIE

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOR REPLACEMENT OF SOPERS BRIDGE

GENERAL LOCATION PLAN

DATE	PROJECT No.
SEPT. 25, 2020	BR1372
SCALE	FIGURE No.
AS SHOWN	1

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street, Goderich, ON N7A 2T4
p. (519) 524-2641 **www.bmross.net**

File No. BR1372

VIA EMAIL ONLY

October 15, 2020

Aboriginal Community
(see attached list)

RE: Class EA to Replace Sopers Bridge
Municipality of Arran-Elderslie

The Municipality of Arran-Elderslie has initiated a Class Environmental Assessment (Class EA) process to consider options associated with replacement of Sopers Bridge which spans Tara Creek along Sideroad 20, southwest of the community of Tara (as shown on the attached plan). Recent engineering inspections of the structure have identified significant deterioration with many bridge components, necessitating replacement of the crossing. Due to the extent of work needed to replace the structure, it is anticipated that Sideroad 20 would be completely closed to traffic for a period of 4 - 5 months during construction. Detours would be provided on adjacent local roads. At this time, replacement of the crossing is tentatively scheduled for 2021.

The planning for this project is following the planning process established for Schedule "B" activities as described in the Municipal Engineers Association Municipal Class Environmental Assessment (Class EA) document. The purpose of the Environmental Assessment process is to identify any potential environmental impacts associated with the project and to plan for appropriate mitigation of any impacts. The process includes additional consultation with the public, First Nation and Métis communities, project stakeholders and government review agencies.

Your community has been identified as possibly having an interest in this project. For your convenience, a response form is enclosed. Please forward your response to our office by November 25, 2020. If you have any questions or require further information, please contact the undersigned at 519-524-2641 or by e-mail at kvader@bmross.net.

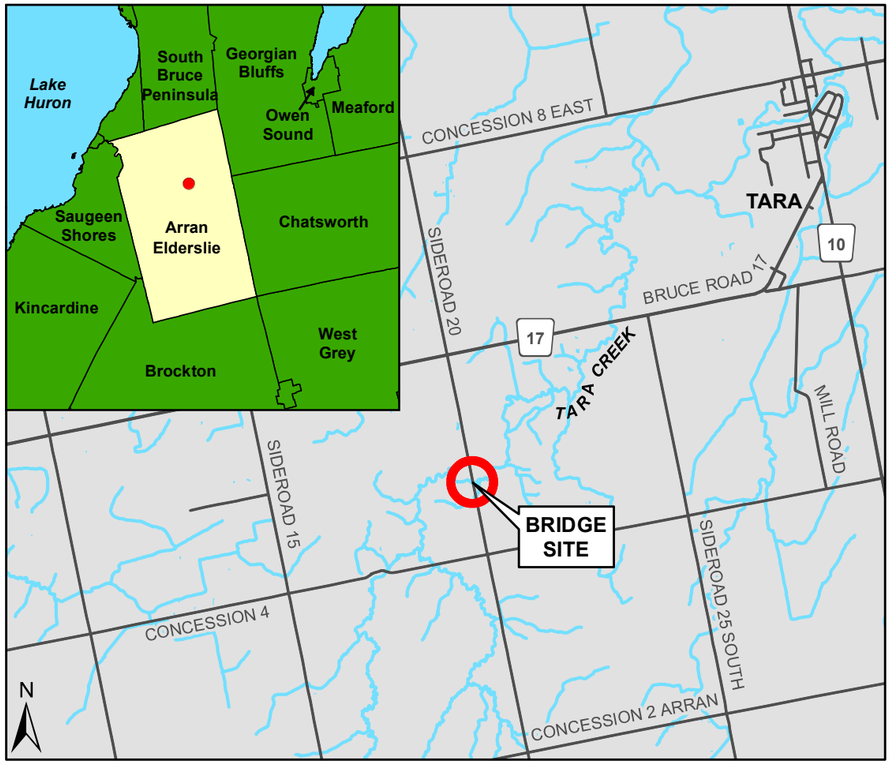
Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:hv
Encl.
cc. Scott McLeod, Municipality of Arran-Elderslie

Z:\BR1372-Arran-Elderslie-Soper_Bridge_A25\WP\Class EA\Aboriginal\BR1372-2020-10-15-Aboriginal Let.docx



KEY PLAN
NOT TO SCALE

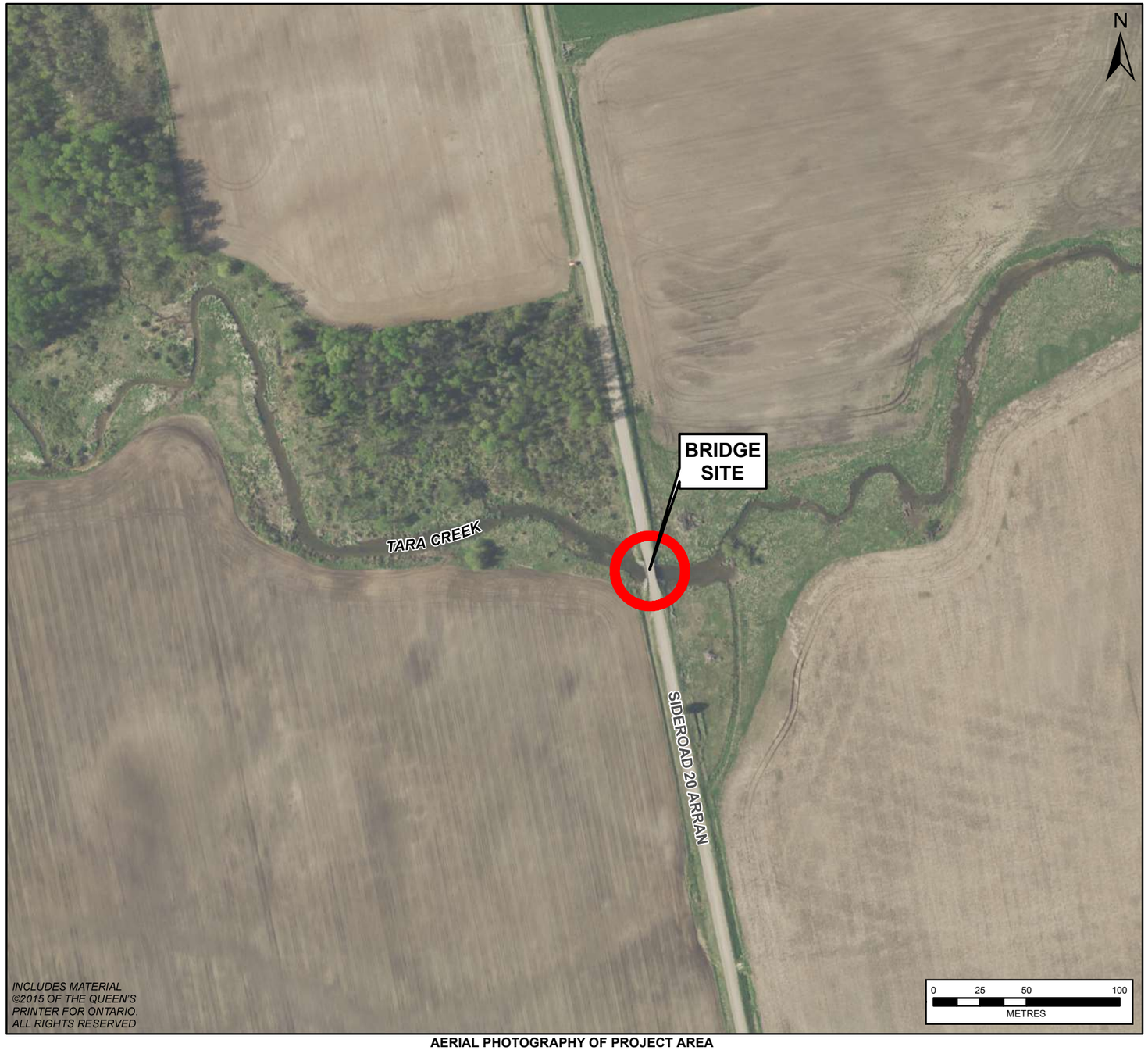
SIDEROAD 20 LOOKING NORTH

WEST ELEVATION

DECK SOFFIT

TYPICAL BEAM CORROSION

SITE PHOTOS TAKEN IN APRIL 2017



AERIAL PHOTOGRAPHY OF PROJECT AREA
SCALE 1 : 2,500

BMROSS engineering better communities

MUNICIPALITY OF ARRAN-ELDERSLIE

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOR REPLACEMENT OF SOPERS BRIDGE

GENERAL LOCATION PLAN

DATE	PROJECT No.
SEPT. 25, 2020	BR1372
SCALE	FIGURE No.
AS SHOWN	1

Response Form

Project Name: Class EA for Sopers Bridge

Project Description: Class EA to Identify Preferred approach for replacing Sopers Bridge in Arran-Elderslie, spanning Tara Creek.

Project Location: Municipality of Arran-Elderslie

(Key Plan of Project Location attached)

Please Detach and Return in Envelope Provided

Name of Aboriginal Community: _____

Please check appropriate box

☐ **Please send additional information on this project**

☐ **We would like to meet with representatives of this project.**

☐ **We have no concerns with this project and do not wish to be consulted further**

MUNICIPALITY OF ARRAN-ELDERSLIE

CLASS ENVIRONMENTAL ASSESSMENT FOR REPLACEMENT OF SOPERS BRIDGE

NOTICE OF STUDY COMMENCEMENT

THE PROJECT:

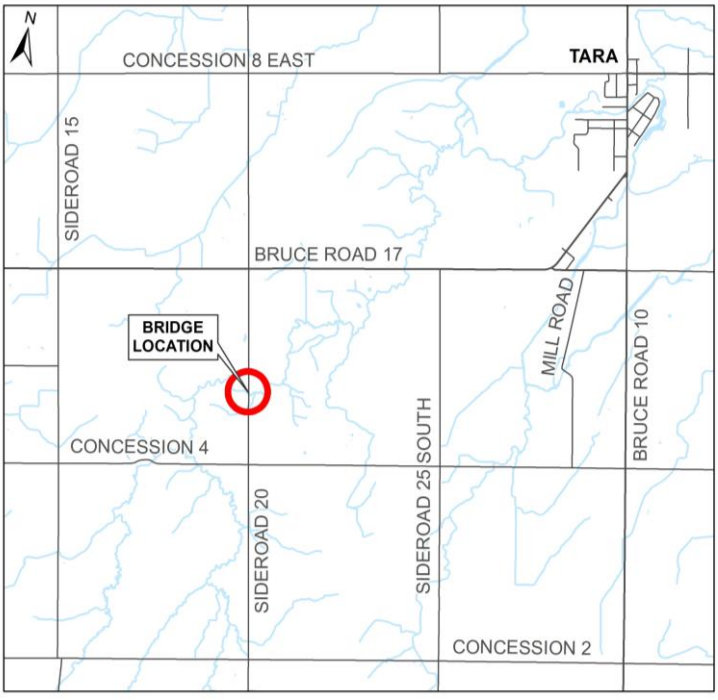
The Municipality of Arran-Elderslie has initiated a Class Environmental Assessment (Class EA) process to consider options associated with replacement of Sopers Bridge which spans Tara Creek along Sideroad 20, southwest of the community of Tara (as shown on the key plan). Recent engineering inspections of the structure have identified significant deterioration with many bridge components, necessitating replacement of the crossing. Due to the extent of work needed to replace the structure, it is anticipated that Sideroad 20 would be completely closed to traffic for a period of 4-5 months during construction. Detours would be provided on adjacent local roads. At this time, replacement of the crossing is tentatively scheduled for 2021.

THE ENVIRONMENTAL SCREENING PROCESS:

The planning for this project is following the planning process established for Schedule B activities under the Municipal Class Environmental Assessment (Class EA) document. Schedule B projects are approved subject to the completion of a screening process. The purpose of the screening process is to identify any potential environmental impacts associated with the proposal and to plan for appropriate mitigation of any impacts. The process includes consultation with the public, Aboriginal communities, stakeholders and review agencies. This notice is being issued to advise of the start of study investigations. There will be additional opportunities for public input and involvement as the study progresses.

PUBLIC INVOLVEMENT:

Public input and comments are invited for incorporation into the planning and design of this project and will be received until **October 30, 2020**, at the address listed below. Any comments collected in conjunction with the study, will be maintained on file for use during the project and may be included in project documentation. With the exception of personal information, all comments will become part of the public record. For further information on this project, or to review the Municipal Class EA process, please contact the project engineers: B.M. Ross and Associates Ltd.: 62 North Street, Goderich, Ontario, N7A 2T4. Telephone: (519) 524-2641. Fax: (519) 524-4403. Kelly Vader, Environmental Planner (e-mail: kvader@bmross.net).



Scott McLeod, Public Works Manager
Municipality of Arran-Elderslie

This Notice issued September 30, 2020

MUNICIPALITY OF ARRAN-ELDERSLIE
CLASS EA FOR REPLACEMENT OF
SOPERS BRIDGE: BR1372

ABORIGINAL CIRCULATION LIST

Chippewas of Nawash Unceded First Nation
Chief: Gregory Nadjiwon
R.R. #5
Wiarton, ON N0H 2T0
executiveassistant@nawash.ca

Chippewas of Saugeen First Nation
Chief: Lester Anoquot
Hwy. 21, R.R. # 1
Southampton, ON N0H 2L0
sfn@saugeen.org

Saugeen Ojibway Nation (SON) – Chippewas of Saugeen &
Chippewas of Nawash
Land Use Planning: Juanita Meekins
25 Maadookii Subdivision
Neyaashiinigmiing, ON N0H 2T0
juanita.meekins@saugeenojibwaynation.ca

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
62 North Street, Goderich, ON N7A 2T4
p. (519) 524-2641 **www.bmross.net**

File No. BR1372

VIA EMAIL ONLY

September 30, 2020

Grey Sauble Conservation Authority
237897 Inglis Falls Road, R. R. 4
Owen Sound, ON N4K 5N6

RE: Class EA to Replace Sopers Bridge
Municipality of Arran-Elderslie

The Municipality of Arran-Elderslie has initiated a Class Environmental Assessment (Class EA) process to consider options associated with replacement of Sopers Bridge which spans Tara Creek along Sideroad 20, southwest of the community of Tara (as shown on the attached plan). Recent engineering inspections of the structure have identified significant deterioration with many bridge components, necessitating replacement of the crossing. Due to the extent of work needed to replace the structure, it is anticipated that Sideroad 20 would be completely closed to traffic for a period of 4 - 5 months during construction. Detours would be provided on adjacent local roads. At this time, replacement of the crossing is tentatively scheduled for 2021.

The planning for this project is following the planning process established for Schedule "B" activities as described in the Municipal Engineers Association Municipal Class Environmental Assessment (Class EA) document. The purpose of the Environmental Assessment process is to identify any potential environmental impacts associated with the project and to plan for appropriate mitigation of any impacts. The process includes additional consultation with the public, First Nation and Métis communities, project stakeholders and government review agencies.

Your organization has been identified as possibly having an interest in this project and we are soliciting your input. Please forward your response to our office by November 6, 2020. If you have any questions or require further information, please contact the undersigned at kvader@bmross.net or by phone at 1-888-524-2641.

Yours very truly

B. M. ROSS AND ASSOCIATES LIMITED

Per _____
Kelly Vader, MCIP, RPP
Environmental Planner

KV:hv
Encl.
cc. Scott McLeod, Arran-Elderslie

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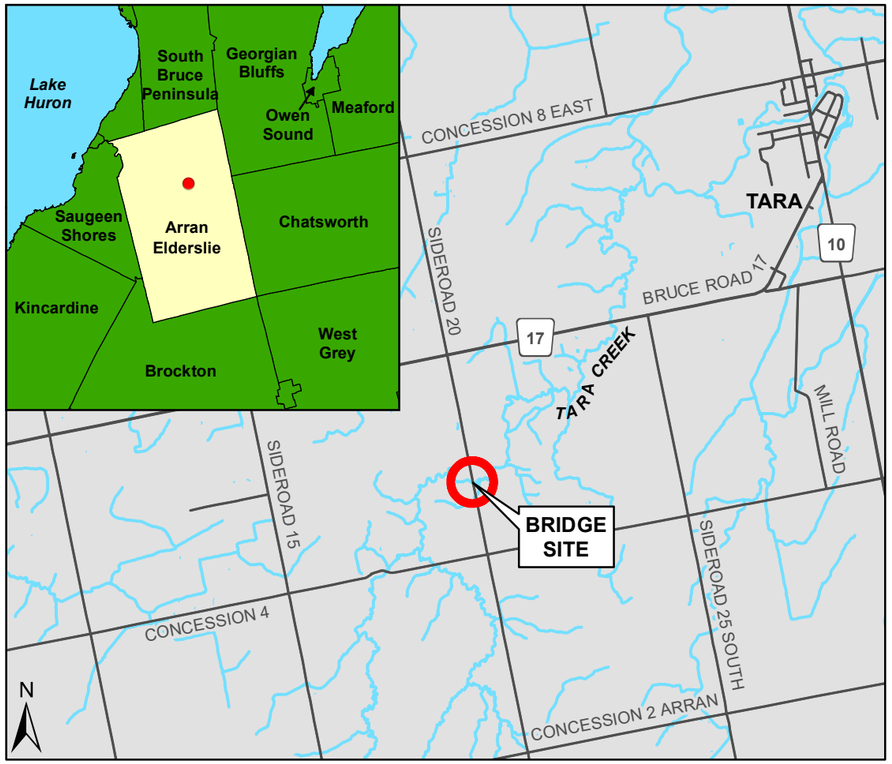
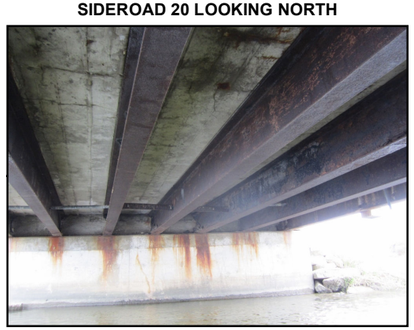


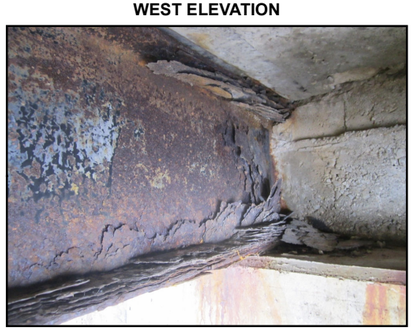
KEY PLAN
NOT TO SCALE

SIDEROAD 20 LOOKING NORTH

WEST ELEVATION



DECK SOFFIT



TYPICAL BEAM CORROSION

SITE PHOTOS TAKEN IN APRIL 2017

AERIAL PHOTOGRAPHY OF PROJECT AREA
SCALE 1 : 2,500

BMROSS engineering better communities

MUNICIPALITY OF ARRAN-ELDERSLIE

MUNICIPAL CLASS ENVIRONMENTAL ASSESSMENT
FOR REPLACEMENT OF SOPERS BRIDGE

GENERAL LOCATION PLAN

DATE	PROJECT No.
SEPT. 25, 2020	BR1372
SCALE	FIGURE No.
AS SHOWN	1

Ministry of the Environment, Conservation and Parks

Environmental Assessment Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des évaluations environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

365-366-8185
Via email only

October 7, 2020

Ms. K. Vader
BM Ross and Associates

Dear Ms. Vader:

Re: Replacement of Soper Bridge
Municipality of Arran-Elderslie
MEA Schedule "B" Project
Response to Notice of Commencement

This letter is in response to the Notice of Commencement for the above noted project. The Ministry of the Environment, Conservation and Parks (MECP) acknowledges that the municipality of Arran-Elderslie has indicated that its study is following the process for Schedule "B" projects as provided for by the MEA Class EA. It is understood that the purpose of this study is to determine the replacement of the Soper Bridge due to its advanced deterioration and need to maintain this crossing.

It is our expectation that as part of the study process, the following will be considered in the identification of impacts and necessary mitigation:

- Climate change adaptation and mitigation. A resource to assist with this is provided;
- Identification of, and mitigation relating to Species at Risk. In this regard, you are encouraged to contact the Species at Risk staff at SARSOntario@ontario.ca by providing a full description of the project and its location; and

- Identification of required permits and approvals to enable the implementation of each alternative and a discussion of the additional information that will be required to support these approvals.

The Crown has a legal duty to consult Aboriginal communities when it has knowledge, real or constructive, of the existence or potential existence of an Aboriginal or treaty right and contemplates conduct that may adversely impact that right. Before you may proceed with this project, the Crown must ensure that its duty to consult has been fulfilled, where such a duty is triggered. Although the duty to consult with Aboriginal peoples is a duty of the Crown, the Crown may delegate procedural aspects of consultation to project proponents while retaining oversight of the process.

Your proposed project may have the potential to affect Aboriginal or treaty rights protected under section 35 of Canada's *Constitution Act 1982*. Where the Crown's duty to consult is triggered in relation to your proposed project, **the MECP is delegating the procedural aspects of rights-based consultation to you through this letter.** The Crown intends to rely on the delegated consultation process in discharging its duty to consult and maintains the right to participate in the consultation process as it sees fit.

Based on information you have provided to date and the Crown`s preliminary assessment you are required to consult with the following communities who have been identified as potentially affected by your proposed project:

- Chippewas of Nawash First Nation
- Saugeen First Nation

Steps that you may need to take in relation to Aboriginal consultation for your proposed project are outlined in the "Code of Practice for Consultation in Ontario's Environmental Assessment Process" which can be found at the following link: https://www.ontario.ca/document/consultation-ontarios-environmental-assessment-process Additional information related to Ontario's *Environmental Assessment Act* is available online at: www.ontario.ca/environmentalassessments

You must contact the Director of Environmental Assessment and Permissions Branch (Director) under the following circumstances subsequent initial discussions with the communities identified by MECP:

- Aboriginal or treaty rights impacts are identified to you by the communities;
- You have reason to believe that your proposed project may adversely affect an Aboriginal or treaty right;
- Consultation has reached an impasse;
- A Part II Order request or elevation request is expected.

The Director can be notified either by email, fax or mail using the information provided below:

Email:	enviropermissions@ontario.ca Subject: Potential Duty to Consult
Fax:	416-314-8452
Address:	Environmental Assessment and Permissions Branch 135 St. Clair Avenue West, 1st Floor Toronto, ON, M4V 1P5

The MECP will then assess the extent of any Crown duty to consult for the circumstances and will consider whether additional steps should be taken, including what role you will be asked to play should additional steps and activities be required.

Royal Assent was given on July 22nd to Bill 197 which made changes to the provincial Environmental Assessment process. Proponents are still required to submit a Notice of Completion providing a minimum 30-day period during which documentation may be reviewed and comment and input can be submitted to the Proponent. Now however, the Notice of Completion is to advise that outstanding concerns are to be directed to the proponent for a response, and that in the event there are outstanding concerns regarding **potential adverse impacts to constitutionally protected Aboriginal and treaty rights**, Part II Order requests on those matters should be addressed in writing to:

Minister Jeff Yurek
Ministry of Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

and

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor

Toronto ON, M4V 1P5
ClassEAnotices@ontario.ca

Please note that you cannot proceed with the project until at least 30 days after the end of the comment period provided for in the Notice of Completion. Further, you may not proceed after this time if:

- a Part II Order request has been submitted to the ministry regarding **potential adverse impacts to constitutionally protected Aboriginal and treaty rights**, or
- the Director has issued a Notice of Proposed Order regarding the project.

If other concerns with the project file and/or EA process are made known to the minister, or determined following a review of the document, the Ministry reserves the right to issue an order on his or her own initiative within a specified time period. Within the 30 days following the Notice of Completion, the Director would first issue a Notice of Proposed Order to you if the Minister is considering an order for the project. At this time, the Director may request additional information from you. Once the requested information has been received, the Minister will have 30 days within which to make a decision or impose conditions on your project.

This concludes our comments. If you have any questions or require clarification on any of the points provided herein, please contact me at (365) 366-8185 or via email at Barbara.slattery@ontario.ca

With best regards,

EA/Planning Coordinator

Encl.

Ministry of Heritage, Sport, Tourism and Culture Industries

Programs and Services Branch
401 Bay Street, Suite 1700
Toronto, ON M7A 0A7
Tel: 613.242.3743

Ministère des Industries du Patrimoine, du Sport, du Tourisme et de la Culture

Direction des programmes et des services
401, rue Bay, Bureau 1700
Toronto, ON M7A 0A7
Tél: 613.242.3743

Ontario

October 26, 2020 EMAIL ONLY

Kelly Vader
Environmental Planner
B.M. Ross Associates Ltd.
62 North Street
Goderich, ON M7A 0A7
kvader@bmross.net

MHSTCI File	**:**	**0013207**
Proponent	**:**	**The Municipality of Arran-Elderslie**
Subject	**:**	**Notice of Commencement – Schedule B – Municipal Class EA**
Project	**:**	**Class EA to Replace Sopers Bridge**
Location	**:**	**The Municipality of Arran-Elderslie**

Dear Kelly Vader:

Thank you for providing the Ministry of Heritage, Sport, Tourism and Cultural Industries (MHSTCI) with the Notice of Commencement for the above-referenced project. MHSTCI's interest in this environmental assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- archaeological resources (including land and marine)
- built heritage resources (including bridges and monuments)
- cultural heritage landscapes

Project Summary
The Municipality of Arran-Elderslie has initiated a Class Environmental Assessment (Class EA) process to consider options associated with replacement of Sopers Bridge which spans Tara Creek along Sideroad 20, southwest of the community of Tara. The planning for this project is following the planning process established for Schedule "B" activities as described in the Municipal Engineers Association Municipal Class Environmental Assessment (Class EA) document.

Identifying Cultural Heritage Resources
While some cultural heritage resources may have already been formally identified, others may be identified through screening and evaluation. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to these communities. Municipal Heritage Committees, historical societies and other local heritage organizations may also have knowledge that contributes to the identification of cultural heritage resources.

Municipal Heritage Bridges: Cultural, Heritage & Archaeological Resources Assessment Checklist

Under the EA process, the proponent is required to determine a project's potential impact on cultural heritage resources. The Municipal Engineers Association provides screening criteria for work on bridges that falls under the Municipal Class EA with a *checklist* and *background material* available online, developed in coordination with MHSTCI.

Part A – Municipal Class EA Activity Selection

The *checklist* and *background material* is used to determine the Municipal Class EA schedule (A, A+, B or C) for the project. Completing the remainder of this checklist determines what technical cultural heritage studies may be required.

Part B - Cultural Heritage Assessment

If Part B of the checklist determines that the bridge or study area warrants the preparation of a Cultural Heritage Evaluation Report (CHER), and the undertaking of a Heritage Impact Assessment (HIA), our ministry's *Info Sheet #5: Heritage Impact Assessments and Conservation Plans* outlines the scope of HIAs. CHERs and HIAs are to be prepared by qualified consultants. Please send HIAs to MHSTCI for review and make copies available to local organizations or individuals who have expressed an interest in cultural heritage.

Part C – Heritage Assessment

If Part C of the checklist determines that the CHER has identified heritage features on the project and recommends that a Heritage Impact Assessment (HIA) be undertaken, our Ministry's *Info Sheet #5: Heritage Impact Assessments and Conservation Plans* outlines the scope of HIAs. CHERs and HIAs are to be prepared by qualified consultants. Please send HIAs to MHSTCI for review and make copies available to local organizations or individuals who have expressed an interest in cultural heritage.

Part D – Archaeological Resources Assessment

If Part D of the checklist establishes that an archaeological assessment is required, it is to be conducted by an archaeologist licenced under the *Ontario Heritage Act* (*OHA*), who is responsible for submitting the report directly to MHSTCI for review. MHSTCI archaeological sites data are available at *archaeology@ontario.ca*.

After completing the checklist, please update MHSTCI on the project Class EA schedule and whether any technical cultural heritage studies will be completed for the project. Please provide all technical heritage studies to MHSTCI before issuing a Notice of Completion or commencing any of work on site.

Environmental Assessment Reporting

All technical cultural heritage studies and their recommendations are to be addressed and incorporated into EA projects. If the screening has identified no known or potential cultural heritage resources, or no impacts to these resources, please include the completed checklists and supporting documentation in the EA report or file.

Thank you for consulting MHSTCI on this project. Please continue to do so through the EA process, and contact me for any questions or clarification.

Sincerely,

Joseph Harvey
Heritage Planner
joseph.harvey@Ontario.ca

From: Shelley Crummer
To: Kelly Vader
Subject: RE: Bluewater DSB Comments for Class EA to Replace Sopers Bridge, Municipality of Arran-Elderslie
Date: Friday, November 13, 2020 8:57:15 AM
Attachments: image001.png

Kelly,
Our transportation department has confirmed that the bus does not currently travel that section of the roadway. There was a misunderstanding that it was for a removal of the bridge so needed to consider the future.

With the clarification of only temporary during 2021, there are no comments at this time.

Shelley Crummer **- Business Analyst, Business Services**
Bluewater District School Board
351 1st Avenue North, Chesley ON N0G 1L0
519-363-2014 ext. 2101 shelley_crummer@bwdsb.on.ca

Learning Today, Leading Tomorrow

From: Kelly Vader <kvader@bmross.net>
Sent: Thursday, November 12, 2020 9:33 AM
To: Shelley Crummer <shelley_crummer@bwdsb.on.ca>
Subject: RE: Bluewater DSB Comments for Class EA to Replace Sopers Bridge, Municipality of Arran-Elderslie

Hi Shelley:

Can you confirm if the bus goes down this road? There is only one residence on the affected road section. The bus could turn around in the driveway if it is a scheduled stop.

Kelly Vader, MCIP, RPP
B. M. Ross and Associates Limited
Engineers and Planners
62 North Street
Goderich, ON N7A 2T4

Ph: (519) 524-2641
C: (519) 525-2170
kvader@bmross.net
https://link.edgepilot.com/s/5fe58ec6/slRGh8LCW0C-5Q9uhLxJCw?u=http://www.bmross.net/

From: Shelley Crummer [mailto:shelley_crummer@bwdsb.on.ca]
Sent: November 12, 2020 9:15 AM
To: kvader@bmross.net
Subject: Bluewater DSB Comments for Class EA to Replace Sopers Bridge, Municipality of Arran-Elderslie

Our comment at this time would be that we would expect that there is a large turn-around on each side of the waterway for buses to turn so that families are not required to walk to the next concession for bus pick-up.

Thank you,

Shelley Crummer - Business Analyst, Business Services
Bluewater District School Board
351 1st Avenue North, Chesley ON N0G 1L0
519-363-2014 ext. 2101 shelley_crummer@bwdsb.on.ca

Learning Today, Leading Tomorrow

(O) This message and/or attachment is intended for the sole use of the individual to which it is addressed and may contain information that is privileged and confidential. If the reader of this message is not the intended recipient or an authorized representative of the intended recipient, you are hereby notified that any dissemination of this communication is strictly prohibited. If you have received this communication in error, please notify me immediately and delete the message and any attachments from your system

MUNICIPALITY OF ARRAN-ELDERSLIE

CLASS ENVIRONMENTAL ASSESSMENT FOR REPLACEMENT OF SOPERS BRIDGE

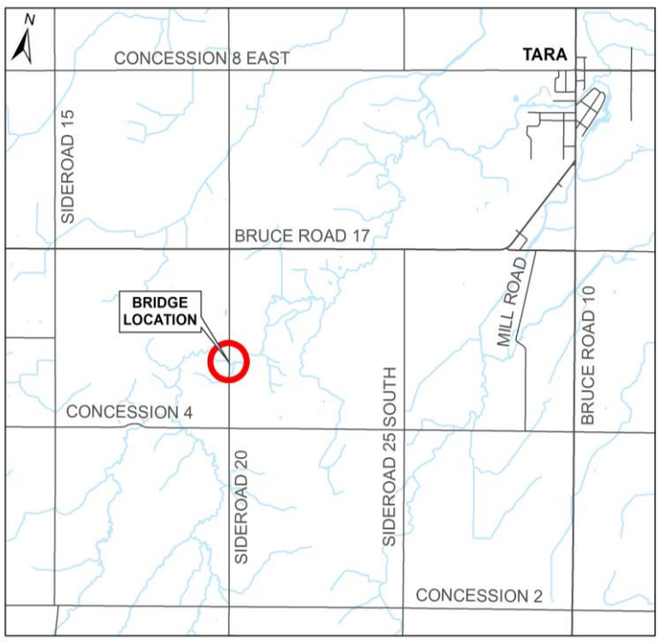
NOTICE OF STUDY COMPLETION

THE PROJECT:

The Municipality of Arran-Elderslie initiated a Class Environmental Assessment (Class EA) process in September 2020 to consider options associated with Sopers Bridge, which spans Tara Creek along Sideroad 20 southwest of the community of Tara (as shown on the accompanying key plan). Recent engineering inspections of the structure identified significant deterioration with many bridge components, necessitating replacement of the crossing. The new bridge will be a 2 lane slab girder bridge constructed in the same location. Due to the extent of work needed to replace the structure, it is anticipated that Sideroad 20 would be completely closed to traffic for a period of 4-5 months during construction. Detours would be provided on adjacent local roads. At this time, replacement of the crossing is scheduled for spring of 2022.

THE ENVIRONMENTAL SCREENING PROCESS:

The planning for this project is following the environmental screening process set out for Schedule B activities under the Municipal Class Environmental Assessment (Class EA) document. The Class EA process involves consultation with the public and review agencies to ensure that the project can be carried out in an environmentally-sound manner. The environmental assessment process has now been completed. There were no negative impacts identified with the project that could not be mitigated.



PUBLIC INVOLVEMENT:

For further information on this project, please contact the project engineers: B.M. Ross and Associates: 62 North Street, Goderich, Ontario, N7A 2T4. Telephone (Toll Free): (888) 524-2641. Kelly Vader, Environmental Planner (e-mail: kvader@bmross.net), prior to January 21, 2022. Information will be collected in accordance with the Municipal Freedom of Information and Protection of Privacy Act. With the exception of personal information, all comments will become part of the public record. An Environmental Screening Report, documenting the environmental assessment conducted for this process, will be available for public review on the Arran-Elderslie website at www.arran-elderslie.ca as of December 22, 2021.

Interested persons may provide written comments to the project team by January 21, 2022. All comments and concerns should be sent directly to Mr. Scott McLeod, Manager of Public Works at the Municipality of Arran-Elderslie at 519-363-3039 x-115 or by email at works@arran-elderslie.ca. In addition, a request may be made to the Ministry of the Environment, Conservation and Parks for an order requiring a higher level of study (i.e. requiring an individual/comprehensive EA approval before being able to proceed), or that conditions be imposed (e.g. require further studies), only on the grounds that the requested order may prevent, mitigate or remedy adverse impacts on constitutionally protected Aboriginal and treaty rights. Requests on other grounds will not be considered. Requests should include the requester contact information and full name for the ministry.

Requests should specify what kind of order is being requested (request for additional conditions or a request for an individual/comprehensive environmental assessment), how an order may prevent, mitigate or remedy those potential adverse impacts, and any information in support of the statements in the request. This will ensure that the ministry is able to efficiently begin reviewing the request. The request should be sent in writing or by email to:

Minister of the Environment, Conservation and Parks
Ministry of Environment, Conservation and Parks
777 Bay Street, 5th Floor
Toronto ON M7A 2J3
minister.mecp@ontario.ca

&

Director, Environmental Assessment Branch
Ministry of Environment, Conservation and Parks
135 St. Clair Ave. W, 1st Floor
Toronto ON, M4V 1P5
EABDirector@ontario.ca

Requests should also be sent to the Municipality of Arran-Elderslie by mail or by e-mail.

Scott McLeod, Manager of Public Works
Municipality of Arran-Elderslie

This Notice issued December 22, 2021