PLANNING COMMITTEE AGENDA

Monday, April 26, 2021
Tom Davies Square

Councillor Kirwan, Chair

1:00 p.m. Open Session Council Chamber / Electronic Participation

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Pages

1. Call to Order

2. Roll Call

3. Declarations of Pecuniary Interest and the General Nature Thereof

4. Public Hearings

5. Members' Motions

6. Addendum

7. Civic Petitions

8. Question Period

9. Adjournment

Kivi Park, Sudbury

Presented To:	Planning Committee
Meeting Date:	April 26, 2021
Type:	Public Hearing
Prepared by:	Wendy Kaufman Planning Services
Recommended by:	General Manager of Growth and Infrastucture
File Number:	751-6/20-27

Report Summary

This report provides a recommendation regarding an application for rezoning in order to permit a privately owned park permitting passive and active recreational uses and associated accessory uses including but not limited to maintenance and servicing of the park, the provision of food for park users, the rental and storage of sports related equipment and boats for park users, and parking areas for park users, Kivi Park, Sudbury – Clifford and Lily Fielding Charitable Foundation

This report is presented by Wendy Kaufman, Senior Planner.

Resolution

THAT the City of Greater Sudbury approves the application by the Clifford and Lily Fielding Charitable Foundation, to amend Zoning By-law 2010-100Z by changing the zoning classification from “R1-2”, Low Density Residential One, “SLS”, Seasonal Limited Service, and “RU”, Rural, to “OSP(S)”, Open Space Private Special on those lands described as PINs 73477-0274, 73477-0285, 73471-0015, 73471-0016, 73476-0513 & part of PIN 73476-0810, Parcels 1352, 13863, 1659, 1095, 39067, 29357 & 29680, Part 11, Plan 53R-6151, Part 1, Plan 53R-5370, Parts 1 & 2, Plan 53R-12323, Part 1 & 2, Plan 53R-20876, Lots 4 & 5, Concessions 2 & 3, Township of Broder, as outlined in the report entitled “Kivi Park, Sudbury”, from the General Manager of Growth and Infrastructure, presented at the Planning Committee meeting on April 26, 2021, subject to the following conditions:

1. That the amending zoning by-law for the “OSP(S)”, Open Space Private Special zoning include the following site-specific provisions:

   i. the only permitted use shall be a privately owned park permitting passive and active recreational uses and associated accessory uses including but not limited to maintenance and servicing of the park, the provision of food for park users, the rental and storage of sports related equipment and boats for park users, and parking areas for park users;

   ii. permit a maximum of four shipping containers on lands comprising PIN 73476-0513, two shipping containers on lands comprising PIN 73471-0015, and three shipping containers on lands comprising PIN 73471-0016, for storage only, where shipping containers would not be permitted;

   iii. permit a minimum front yard setback of 3 m for a shipping container on lands comprising PIN 73476-

0513 where a 10 m setback would be required;

iv. permit a minimum 0.5 m building separation between shipping containers where a 3.0 m separation distance would be required;

v. permit a minimum 1.5 m building separation between two warming hut buildings located on lands comprising PIN 73476-0810, where a separation distance of 3 m would be required;

vi. permit a minimum 0 m building separation between two washroom buildings on lands comprising PIN 73471-0015 where a separation distance of 3 m would be required;

vii. permit buildings on the basis of private road access on lands comprising PINs 73476-0015 and 73476-0016 where buildings shall not be erected on a lot that does not have frontage on an assumed road;

viii. permit a shelter structure to be located within the shoreline buffer area on lands comprising PIN 73471-0016 where a 12 m setback would be required;

ix. permit a minimum westerly interior side yard setback of 0 m for a fire pit and firewood storage structure on lands comprising PIN 73476-0810, where a 10 m setback would be required;

x. no landscaped area shall be provided adjacent to a public road for a parking lot, where a 3.0 m landscaped area would be required;

xi. require a minimum 30 m landscaped area, which shall be permitted to include cleared areas for trails, adjacent to the west side of Edward Avenue where a 3.0 m landscaped area would be required; and

xii. require a minimum exterior side yard setback of 35 m adjacent to Edward Avenue where a 10 m setback would be required.

2. That prior to the enactment of the amending by-law, that the owner apply for all required building permits for existing structures to the satisfaction of the Chief Building Official.

3. That prior to the enactment of the amending by-law, that the owner provide sewage system permits issued by Public Health Sudbury & Districts for each of the four existing washrooms with holding tanks, to the satisfaction of the Director of Planning Services.

4. That prior to the enactment of the amending by-law, that the owner provide confirmation that there is an adequate source of potable water available to the satisfaction of the Director of Planning Services.

5. Conditional approval shall lapse on May 11, 2023 unless Conditions 2, 3, and 4 above have been met or an extension has been granted by Council.

Relationship to the Strategic Plan / Health Impact Assessment

The application to amend the Zoning By-law is an operational matter under the Planning Act to which the City is responding. The application aligns with the 2019-2027 City of Greater Sudbury Strategic Plan goal to create a healthier community by investing in infrastructure to support community recreation with a focus on quality of life.

Financial Implications

Based on the information available, staff is unable to quantify the financial implications relating to property taxes and development charges as there would be a demolition credit available towards development charges on the new building to be constructed from the existing buildings to be demolished, and the

assessed value would be determined by MPAC (Municipal Property Assessment Corporation).

Report Summary

An application for rezoning has been submitted to change the zoning classification on the subject lands from “R1-2”, Low Density Residential One, “SLS”, Seasonal Limited Service, and “RU”, Rural, to “OSP(S)”, Open Space Private Special in order to permit a privately owned park permitting passive and active recreational uses and associated accessory uses including but not limited to maintenance and servicing of the park, the provision of food for park users, the rental and storage of sports related equipment and boats for park users, and parking areas for park users. Site-specific provisions are required to enable the development, or have been specifically requested to promote land use compatibility. The subject lands are designated Rural Area and Living Area 2 in the Official Plan.

Staff recommends approval of the application on the basis that it is consistent with the Provincial Policy Statement, conforms to the Growth Plan for Northern Ontario, the Official Plan for the City of Greater Sudbury, has regard for matters of provincial interest, and represent good planning.

Staff Report

Proposal:

Kivi Park is a unique facility comprised of both municipal parkland and private recreational land. The municipal parkland owned by the City is not subject to this rezoning application.

The application proposes to amend By-law 2010-100Z, being the Zoning By-law for the City of Greater Sudbury, for approximately 162 ha (400 acres) of land owned by the Clifford and Lily Fielding Foundation, to permit a privately owned park permitting passive and active recreational uses and associated accessory uses including but not limited to maintenance and servicing of the park, the provision of food for park users, the rental and storage of sports related equipment and boats for park users, and parking areas for park users. Site-specific provisions are required to enable the development, or have been specifically requested to promote land use compatibility.

An existing dwelling, garage and shed on PIN 73476-0513 are intended to be demolished. A new 300 square metre maintenance/storage building with staff washroom is intended to be constructed in this area (using the existing septic system and well associated with the existing dwelling if possible).

Existing buildings and structures that are intended to remain include:

- two warming huts
- nine shipping containers used for storage (four at Long Lake Road and five at Crowley Lake)
- three small storage sheds
- two above-ground fuel storage tanks
- two playgrounds with play structures
- two small shelter structures (Crowley Lake lands)
- four washrooms with holding tanks (two on Crowley Lake lands)

Six parking lots providing 99 parking spaces are provided along Raft Lake Road on the subject lands, and 15 spaces are provided at Crowley Lake.

The subject lands include approximately 56 km of trails for snowshoeing, classic and skate cross-country skiing, fat biking, mountain biking, hiking, and walking, and a winter skating path. Beach access as well as kayak, canoe and paddleboard rentals are available at Crowley Lake.

The municipal parkland owned by the City in this location consists of the former Long Lake Public School site and approximately seven acres of land adjacent to the former Long Lake Playground. The City purchase of the school and seven acres of land in the fall of 2015 was achieved through a donation from the Foundation. The Foundation buildings currently on these lands include two office trailers with an access ramp, a third trailer that is used as a rental office for sports equipment), a storage structure, and three washrooms with holding tanks (permitted through a Right of Occupation agreement with the City). The City is responsible for the operation and maintenance of the outdoor rink, sport fields, field house (in coordination with the Neighbourhood Association), parking lots and basketball court on this property.

A 2019 report prepared by Leisure Services for the Community Services Committee is available online: https://agendasonline.greatersudbury.ca/index.cfm?pg=feed&action=file&agenda=report&itemid=2&id=1357. This report provided an update regarding Kivi Park operations, an overview of operating costs, responsibilities and considerations relating to Kivi Park and municipal support.

Existing Zoning: "R1-2", Low Density Residential One, "SLS", Seasonal Limited Service, and "RU", Rural

The current R1-2 zoning is limited to PIN 73476-0513 being 0.5 ha in size and fronting on Long Lake Road. The residential zoning of these lands prevents their use for park purposes. The existing dwelling, garage and shed in this area are intended to be replaced with a new 300 square metre maintenance/storage building with staff washroom (3-5 staff at the park at once).

The current SLS zoning is limited to PIN 73471-0016 being 0.88 ha in size and fronting on Crowley Lake. The only uses permitted in the SLS zone include a seasonal dwelling and accessory private cabin. The sketch illustrates the existing structures on these lands, being two shelter structures and three shipping containers. No new structures are proposed in this area.

The RU zone applies to the majority of the lands and permits a range of residential and rural uses.

Requested Zoning: "OSP(S)", Open Space Private Special

The requested OSP(S) zoning would permit a privately owned park permitting passive and active recreational uses and associated accessory uses including but not limited to maintenance and servicing of the park, the provision of food for park users, the rental and storage of sports related equipment and boats for park users, and parking areas for park users. Site-specific provisions are required to enable the development, or have been specifically requested to promote land use compatibility.

Location and Site Description:

The subject property is described as PINs 73477-0274, 73477-0285, 73471-0015, 73471-0016, 73476-0513 & part of PIN 73476-0810, Parcels 1352, 13863, 1659, 1095, 39067, 29357 & 29680, Part 11, Plan 53R-6151, Part 1, Plan 53R-5370, Parts 1 & 2, Plan 53R-12323, Part 1 & 2, Plan 53R-20876, Lots 4 & 5, Concessions 2 & 3, Township of Broder. The subject lands are generally located to the south of Long Lake and McFarlane Lake Roads and east and west of Raft Lake Road. Most of the lands comprising Kivi Park are contiguous with the exception of a parcel located to the north side of Crowley Lake, which is separated from the balance of the Kivi Park lands by Crown Land.

The lands are not serviced with municipal sewer or water services. Access to one portion of the subject lands is via Long Lake Road and the municipally maintained portion of Raft Lake Road. The portion of the site adjacent to Crowley Lake is accessible via Raft Lake Road and Kasten Lake Road, which are not maintained by the City and are considered to be private access roads. Maintenance of the private access road that the applicant advises has been completed include, for Raft Lake Road, drilling and blasting to widen and straighten the road at the top of the hill (in the vicinity of parking lot 5), installation of culverts and recycled

asphalt pavement, drainage and ditching, and grading. Planned improvements for Kasten Lake Road in the spring of 2021 include adding three pull over stops, 6-10 new culverts, grading and re-gravelling.

Surrounding Land Uses:

The area surrounding the site includes:

North:	low density residential, landscape contractor's yard, and vacant rural land (Long Lake Road, McFarlane Lake Road, Edward Drive)
East:	low density residential, vacant rural land, Crown land (Ristimaki Road, Raft Lake Road, Kasten Lake Road)
South:	Crown land, Crowley Lake
West:	City-owned Park, low density residential, Crown land

The existing zoning & location map indicate the location of the subject lands to be rezoned and the zoning in the immediate area. Aerial photography is also included to show the site in context with the surrounding uses.

Site photos show the existing recreational and storage facilities, parking areas, location of the proposed maintenance building, adjacent uses on City-owned lands, and low density residential uses along Long Lake Road and Edward Avenue.

Public Consultation:

Notice of the application was circulated to the public and surrounding property owners on January 27, 2021. Notice of Public Hearing was circulated to the public and surrounding property owners on April 15, 2021. The applicant hand-delivered notices to residents of the Pennala subdivision, and along Long Lake Road, Edward Drive & McFarlane Lake Road.

As of the date of this report, five phone calls and one letter have been received. Comments range from general support, to questions about the maintenance of the private access road, and specific concerns with the volume, noise and speed of traffic along the curve of Long Lake Road in the area of the main parking lot, as well as overflow parking onto Long Lake Road.

Policy and Regulatory Framework:

The property is subject to the following policy and regulatory framework:

- 2020 Provincial Policy Statement
- 2011 Growth Plan for Northern Ontario
- Official Plan for the City of Greater Sudbury, 2006
- Zoning By-law 2010-100Z

Provincial Policy Statements and geographically specific Provincial Plans, along with municipal Official Plans, provide a policy framework for planning and development in the Province. This framework is implemented through a range of land use controls such as zoning by-laws, plans of subdivision and site plans.

Provincial Policy Statement:

Municipalities in the Province of Ontario are required under Section 3 of the Planning Act to ensure that decisions affecting planning matters are consistent with the Provincial Policy Statement.

Section 1.1.5 of the PPS includes policies for rural lands in municipalities, and permits resource-based recreational uses. Recreational, tourism and other economic opportunities should be promoted.

Development that is compatible with the rural landscape and can be sustained by rural service levels should be promoted. Development shall be appropriate to the infrastructure, which is planned or available, and avoid the need for the unjustified and/or uneconomical expansion of this infrastructure.

Section 1.5.1(b) and (c) state that healthy, active communities should be promoted by 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, and providing opportunities for public access to shorelines.

Section 1.6.6.4 states that where municipal sewage services and municipal water services or private communal sewage services and private communal water services are not available, planned or feasible, individual on-site sewage services and individual on-site water services may be used, provided that site conditions are suitable for the long-term provision of such services with no negative impacts.

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

Growth Plan for Northern Ontario:

Municipalities in the Province of Ontario are required under Section 3 of the Planning Act to ensure that decisions affecting planning matters conform to the Growth Plan for Northern Ontario. There are no applicable land use planning policies that would be relevant to the current application, though the application aligns with policies support the development of the tourism sector.

Official Plan for the City of Greater Sudbury:

A small portion of the subject lands along Long Lake Road is designated Living Area 2 in the Official Plan. The objectives for the Living Area designations, as listed in Section 3.1 of the Official Plan, include item (d) to ensure that Communities and Non-Urban Settlements permit a variety of complementary and compatible land uses, including community facilities, small-scale commercial uses and open space areas. Section 3.2 states that the Living Area II designation is comprised of several residential clusters in non-urban areas that evolved based on the City's historical pattern of settlement. While some of these Non-Urban Settlements are partially serviced by municipal water, most households rely on private systems. There is no intention to expand services to these areas. Policy 3.2(4) states that parks and open space are permitted in all Living Area designations.

The majority of the lands are designated Rural Area in the Official Plan. Section 5.2 states that Rural Areas contain a variety of land uses, such as farms, woodlots and forests, small industry, and clusters of rural residential development. These areas also provide for outdoor recreation opportunities such as snowmobiling, skiing, hiking, canoeing, and other activities in natural areas. Policy 5.2(1)(c) lists conservation, open space and natural resource management activities as permitted uses within the Rural Areas designation.

Section 5.2.4 states that Rural Areas can accommodate a number of uses that are compatible with the natural setting and extensive open space areas, as well as existing uses such as farming. Activities related to outdoor recreation, agriculture, and natural resource management are considered appropriate within a rural setting. Policy 5.2.4(1) states that Rural Areas may be used for recreational purposes that are primarily outdoor-oriented.

While the use that is being proposed is not considered to be a resort or shoreline commercial resort use, the criteria used to evaluate these types of developments are listed in Section 5.2.6, and are considered relevant in that they guide the consideration of private uses that are permitted in rural and waterfront areas as a means of expanding the tourism sector and providing increased recreational opportunities. These uses are controlled through rezoning and site plan control processes, which confirm the following:

a) the site is suitable for the use proposed in terms of density, intensity, location of buildings and structures,

and type of facilities;
b) where development occurs in areas not fully serviced, resort and shoreline developments are to be serviced by an adequate sewage disposal system;

c) a hydrogeological assessment may be required to assess the impacts of development and ensure an adequate supply of potable water;
d) access routes can accommodate additional traffic if required;
e) the proposed use is compatible with surrounding properties and will provide adequate buffering if required; and,
f) impacts on the lake that result from the year-round activities associated with the resort development are considered and mitigated.

Policy 12.2.3(1) regarding sewer and water systems, states that where development is proposed outside fully serviced areas, the proponent must prove that the soil conditions of the proposed site are suitable for a waste sewage disposal system and that there is a proven source of potable water available. A hydrogeological assessment is required where the minimum lot size is less than 0.8 hectare (2 acres).

Zoning By-law 2010-100Z:

Development standards for the requested 'OSP' zone include a maximum height of 10 m, maximum lot coverage of 5%, and minimum landscaped open space of 40%. The minimum required yard on all sides is 10 m. A 3 m building separation is required between buildings. The parking rate is 1/20 square metres net floor area.

Site Plan Control:

A site plan control agreement will be required to be registered on title to the lands owned by the applicants prior to issuance of any required building permits. The site plan will focus on the portions of the site with buildings and structures, and will also plan for the City-owned lands used by the applicant through a Right of Occupation agreement (though will not be registered on title to lands owned by the City). The applicant has completed pre-consultation with the City regarding site plan control, which is required prior to the applicant making a formal site plan control application.

The entire City is subject to site plan control, as outlined in the Site Plan Control By-Law 2010-220, excepting certain zoned areas and classes of development. Generally, detached homes, semi-detached homes, duplexes, seasonal dwellings such as a camps and cottages, buildings with four units or less and accessory buildings (sheds or garages) are not subject to site plan control. A property can be rezoned for a use without requiring a site plan control agreement to be registered on title. The trigger for a site plan control agreement is tied to the building permit stage of development. In this manner, a property owner has certainty that a site can be used for their intended purpose prior to investing in the detailed design required for site plan control. However, a common misconception remains that development proposals can proceed simply because they have satisfied existing zoning requirements rather than being appropriately planned and designed in the context of site plan control. This is especially common for uses that either do not require a building permit or where the property owner has failed to obtain a building permit, given a building permit is the typical trigger for site plan control. To address this issue, City staff may recommend that that a site plan control agreement be registered on title prior to a rezoning by-law being passed. The legislative authority for municipalities to implement the site plan control process is found in Section 41 of the Planning Act.

Department/Agency Review:

Planning staff circulated the development application to all appropriate internal departments and external agencies. Responses received are included as Appendix 1 and have been used to assist in evaluating the application.

Building Services has provided comments regarding additional site-specific zoning provisions that should be added to the bylaw, the buildings and structures that will require building permits (shipping containers,

warming huts, washroom structures, and shelter structures at Crowley Lake) and technical comments regarding fuel storage tanks.
Conservation Sudbury has advised that they do not have records permitting works on-site to date, and that any future works within their regulated area will require a permit pursuant to Section 28 of the Conservation Authorities Act.

Development Engineering has confirmed that the site is not presently serviced with municipal water or sanitary sewer. Any concerns regarding servicing, lot grading and stormwater management will be reviewed through the site plan process.

Infrastructure Capital Planning Services has advised that road and road drainage requirements will be reviewed through the site plan process.

Environmental Planning Initiatives has commented that there is a high potential for portions of the subject lands to serve as habitat for species that are protected under the Endangered Species Act, including but not necessarily limited to the Eastern Whip-poor-will. The owner is solely responsible for ensuring that activities relating to vegetation removal, site alteration and development undertaken on the subject lands do not result in a contravention of the Endangered Species Act.

Public Health Sudbury & Districts has advised that the lands are suitable for installation of a septic tank and leaching bed system.

Planning Analysis:

The PPS (2020), the Growth Plan (2011), and the Greater Sudbury Official Plan, and other relevant policies and supporting guidelines were reviewed in their entirety. The following section provides a planning analysis of the application in respect of the applicable policies, including issues raised through agency circulation.

The applicant is proposing a park with passive and active recreational uses, and associated accessory uses including but not limited to maintenance and servicing of the park, the provision of food for park users, the rental and storage of sports related equipment and boats for park users, and parking areas for park users. The applicant has characterized the use as a significant recreational amenity for the use and enjoyment of the residents of the City of Greater Sudbury as well as visitors to the City.

The application aligns with Growth Plan for Northern Ontario policies that support the development of the tourism sector. The proposed use is consistent with PPS polices 1.5.1(b) and 1.5.1(c), which strive to promote health and active communities, by providing opportunities for recreation including the use of facilities, parklands, trails and water-based resources, as well as access to shorelines.

The Official Plan designates the majority of the subject lands as Rural Area, and a small portion along Long Lake Road are designated Living Area 2. Official Plan policies for the Living Area 2 designation, and particularly Policy 3.2(4), specifically permit park and open space uses. Section 1.1.5 of the PPS includes policies for rural lands in municipalities, and permits resource-based recreational uses. It states that recreational, tourism and other economic opportunities should be promoted while considering compatibility with the rural landscape and rural service levels. The Official Plan policies for Rural Areas (Section 5.2 and 5.2.4) permit outdoor-oriented recreational opportunities. The proposed location of the use is consistent with PPS and Official Plan policies that establish the permitted uses in this rural area.

The subject lands can be characterized as mainly vacant rural lands with trails, varying in topography. The subject lands are considered to be suitable in terms of accommodating the number of existing and proposed buildings and structures, which are considered to be minimal considering the size of the lands.

Staff recommends that the requested “OSP”, Open Space Private zone is the appropriate base zoning for the proposed use. Staff also recommends that that the proposed uses contemplated by the application be expressly permitted in the site-specific zoning provisions given the only use permitted in that zone is a public park.

A number of minor requests to accommodate existing structures have been requested and are recommended to be appropriate:

- The requested reduced building separation between shipping and storage containers, warming huts, and washroom facilities, which will be further addressed through the building permit process.
- The requested setback of 4 m and 0 m setback from the City-owned for a fire pit and a small wood storage structure (located on PIN 73476-0810) is not expected to have a negative impact on the adjacent lands.

Shipping Containers

The City's approach to shipping containers, as articulated in the zoning by-law, is based on prohibiting them in certain zones in order to protect the quality and character of residential areas and other areas that define our community image. Shipping and storage containers are permitted in most industrial zones and in the Agricultural and Rural zones as an accessory structure in conjunction with a permitted agricultural, extractive, transport terminal or warehouse use. They are also permitted for the purposes of rental, sale, or distribution in a Light Industrial or Heavy Industrial Zone for use off site. Shipping and storage containers are permitted on a temporary basis to support construction activities, or for up to 14 days to support moving activities. By contrast, shipping and storage containers are not permitted on Residential, Commercial, Business Industrial and Mixed Light Industrial/Service Commercial zoned lots. These zones are associated with the areas of our City where residents live, shop and work, in our higher profile locations such as key nodes and corridors that define our community.

Staff recommends that the use of shipping and storage containers for practical storage purposes, as an accessory structure to a private park use in a rural area is appropriate. The existing containers are considered to be compatible with the character of the park, and, if limited to the existing structures, will not have a negative impact on the surrounding rural residential uses. The four containers located south of Long Lake Road are well screened and are not visible from Long Lake Road or from Edward Drive or the residential use to the east. It is recommended that the requested 3 m front yard setback (where 10 m is required) and number of containers requested be permitted in the site-specific zoning for the property. This would be in keeping with the City's approach to permitting shipping and storage containers on certain lands.

Shipping containers are designed to be in motion and used for the transport of good and materials. The application requests them to be permitted as permanent structures for storage purposes only. Given the containers have an area over 10 square metres they require a building permit which will address snow and wind loading, the foundation, and other Building Code requirements related to fire and life safety.

Parking

Parking for Kivi Park is provided through a combination of the main parking lot located on the City-owned lands, six parking lots located on the Foundation Lands adjacent to Raft Lake Road and a parking area at Crowley Lake. The City-owned parking lot accommodates approximately 90 parking spaces. The six parking lots along Raft Lake Road accommodate approximately 99 parking spaces, and 15 spaces are available at Crowley Lake.

The applicant has indicated that the parking lot with the highest usage is the parking lot located on the City-owned lands, as it is adjacent to the park office and rental facilities, playgrounds and skating path. Parking lots 5 and 6, which are located just beyond the public section of Raft Lake Road at the top of the ridge, are also well-used given the proximity to trails and scenic views.

The existing parking lots have proven over the past few years of the parks operation to be adequate for accommodating parking demands. The applicant has indicated that, as has been done in the past, parking for a large sporting event will be reduced by providing alternative parking location(s) with shuttle service. It is recommended that the existing parking facilities are adequate for the proposed use.

Servicing

The site is not serviced by municipal water or sanitary sewer. When development is proposed on the basis of individual systems, the Official Plan requires the proponent to demonstrate that the soil conditions of the proposed site are suitable for a waste sewage disposal system and that there is a proven source of potable water available.

In terms of waste sewage disposal, Public Health Sudbury & Districts (PHSD) conducts inspections and issues sewage system permits in the City. PHSD has confirmed that the site, in general, is suitable for the installation of a private sewage system. The new maintenance building with staff washroom facility is proposed to use the existing septic system associated with the former residential dwelling on the property. The applicant has indicated that if a new septic system needs to be installed, the required approvals will be obtained from PHSD. There are also four existing washrooms with holding tanks on the subject lands for park users. A permit from PHSD is required to install this type of septic system (called a 'Class 5' system). Holding tanks are only allowed under certain circumstances as directed by the PHSD. Overall, while PHSD has confirmed site suitability, no sewage system permits have been provided with the application to confirm the appropriateness of the four existing washrooms with holding tanks.

In terms of potable water, the owner anticipates using the existing well associated with the former residential dwelling on the property to provide potable water to the new maintenance building for park staff. The applicant has not provided confirmation that there is an adequate supply of potable water available for this, which is required by Section 12.2.3(1) of the Official Plan and is necessary to confirm the suitability of the site. Though not proposed at this time, should the applicant decide to make drinking water available to the public, the water system may be considered to be a small drinking water system. These systems are under the jurisdiction of PHSD, whose role is to assess the system and determine what owners and operators must do to keep their drinking water safe, including requirements for water testing, treatment options and training.

Access

Traffic to the site results mainly from staff and park users. The applicant has indicated that no heavy truck traffic is generated as part of the typical day-to-day operations of the park. Limited heavy truck traffic is expected during the construction of the proposed maintenance building.

Access to the main portion of the subject lands via Long Lake Road and the municipally maintained portion of Raft Lake Road can accommodate the anticipated level of traffic and is considered to be appropriate for the proposed development. It is acknowledged that staff has provided a number of comments with respect to road and road drainage requirements that will be addressed through the site plan control process.

Section 1.6.7.1 of the PPS identifies that transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs. The zoning by-law states that no buildings can be erected on a lot unless it fronts on a road that has been assumed and is maintained year round by either the City or the Province in the case of provincial highways, with some exceptions e.g. for seasonal dwellings.

Access to the portion of the subject lands at Crowley Lake, which is open 10 a.m. – 4 p.m. on weekends, is on the basis of a private access road via Raft Lake Road and Kasten Lake Road which are not maintained by the City. The applicant has provided information regarding completed and planned maintenance activities in this area. The uses contemplated for this area by the applicant, and which are restricted through the proposed zoning, are expected to result in relatively low vehicle traffic volumes. It is expected that given the level of maintenance of the road in this area that emergency vehicles would be able to use the private access road. It is recommended that the proposed private road access is appropriate for the uses proposed, and that the site-specific zoning provisions include provisions for development on the basis of private road access.

Land Use Compatibility

The main area of the subject lands with the most use is located adjacent to the main parking area, and is set back a significant distance from Long Lake Road. In general, the park use is considered compatible with the surrounding uses, which include low density residential use as well as vacant rural/Crown land.

A new maintenance building is proposed to be located at the northeast portion of the subject lands on PIN 73476-0513. Staff agrees with the applicant's request that the site-specific zoning provisions include the requirement to provide a 30 m wide landscape strip including a trail on the east side of PIN 73476-0513, as well as required a 35 m building setback (rather than 10 m) in order to promote compatibility with the adjacent residential uses along Edward Avenue to the east.

The applicant has requested to eliminate the requirement for a 3 m landscaped area to be provided adjacent to a public right-of-way for the three parking lots that abut the public portion Raft Lake Road. There is no surveyed road allowance for Raft Lake Road, which makes it difficult to define the boundary between the road and the parking lots. The request is recommended to be appropriate given the majority of the lands are being maintained in a natural state.

Impacts on Crowley Lake

The City has developed an approach to the management of lakes, and the Official Plan establishes policies for lakes with phosphorous enrichment concerns. Crowley Lake is not a lake with phosphorous concerns, and is categorized as a 'standard' management lake from a phosphorous management perspective. This means that it has a low responsiveness to phosphorous and relatively low phosphorous loading. For all lakes in the City, the zoning by-law requires a 12 m development setback and vegetative buffer, except for some limited clearing and accessory shoreline structures (e.g. sauna, gazebo, boathouse), in order to protect water quality and shoreline habitat.

The application proposes limited development of the lands adjacent to Crowley Lake, including two shelter structures, 5 shipping and storage containers and two washrooms. This level of development is not expected to have significant impact on Crowley Lake. The applicant has requested relief to permit an existing 4x5 m shelter structure within the 12 m buffer area. It is understood that this existing structure was placed on the foundation of a previous structure on the lands that did not benefit from a building permit. Given the relatively low level of development overall, and that the shelter structure could be considered to be similar in nature to shoreline structures that would be permitted in the shoreline buffer area, this request is recommended to be appropriate and should be included in the site-specific zoning provisions.

Conditions

Staff has considered in this case whether it would be appropriate to require the site plan control agreement to be registered on title prior to enactment of the amending by-law. Staff does not recommend that that this would be necessary given the applicant's plans to construct a maintenance building, which will require a building permit. The building permit for the maintenance building cannot be issued until a site plan control agreement has been registered on title for the entire site.

The following conditions are recommended prior to the enactment of the amending by-law:

- The existing shipping and storage containers, warming huts, and shelter structures at Crowley Lake have been placed on the property without the benefit of a building permit to address matters including structural integrity and life safety. It is recommended that prior to the enactment of the amending by-law, that the owner apply for all required building permits for existing structures to the satisfaction of the Chief Building Official.

- The application indicates that there are four existing washrooms with holding tanks, which are only allowed under certain circumstances, as directed by Public Health Sudbury & Districts. At this time, it has not been confirmed that these sewage disposal systems are adequate. It is recommended that prior to the enactment of the amending by-law, that the owner provide sewage system permits issued by Public Health Sudbury & Districts for each of the four existing washrooms with holding tanks, to the satisfaction of the Director of Planning Services.

- The applicant has not provided confirmation that there is a proven source of potable water available for the new maintenance building with washroom for parks operations staff, as required by the Official Plan. It is recommended that prior to the enactment of the amending by-law, that the owner provide confirmation that there is a source of potable water available (e.g. in the form of a report from a qualified professional engineer or hydrogeologist), to the satisfaction of the Director of Planning Services.

Conclusion:

The Planning Division undertook a circulation of the application to ensure that all technical and planning matters have been satisfactorily addressed.

The following are the principles of the proposed site specific Zoning By-law Amendment:

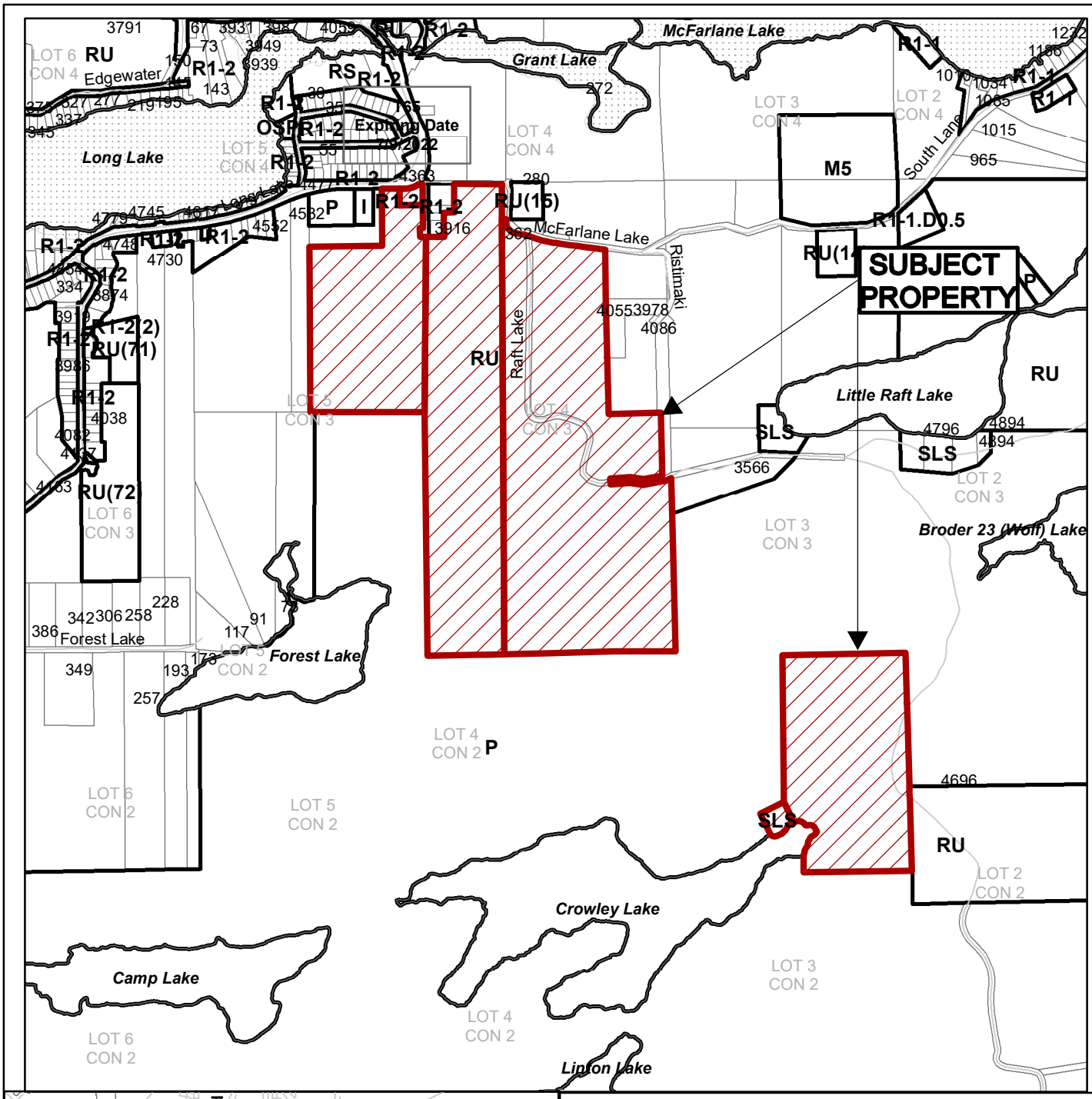
- To permit a privately owned park permitting passive and active recreational uses and associated accessory uses including but not limited to maintenance and servicing of the park, the provision of food for park users, the rental and storage of sports related equipment and boats for park users, and parking areas for park users.
- To include site-specific provisions to enable the development, or to promote land use compatibility with adjacent uses.

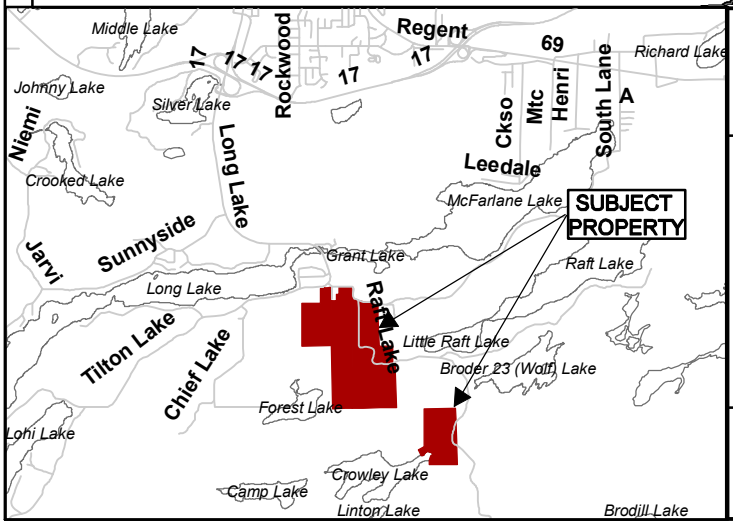
The development of the subject lands achieves a number of policy directives, including the promotion of healthy and active communities, amongst other matters, a full range of factors through a detailed review when forming the recommendation of approval for this application.

Staff is of the opinion that the proposed amendment is appropriate based on the following:

- The proposed use is permitted in Rural Areas and will provide opportunities for outdoor-oriented recreational activities.
- The site is suitable for the use proposed in terms of the intensity, types and location of buildings and structures.
- The existing parking facilities and road access are appropriate and can accommodate the expected demand.
- Adequate sewage waste disposal and water services can be provided.
- The use is compatible with surrounding properties and adequate buffering will be required.

Staff recommends approval of the application, subject to the conditions identified in the resolution, on the basis that it is are consistent with the Provincial Policy Statement, conforms to the Growth Plan for Northern Ontario, the Official Plan for the City of Greater Sudbury, has regard for matters of provincial interest, and represents good planning.





Growth and Infrastructure Department

N

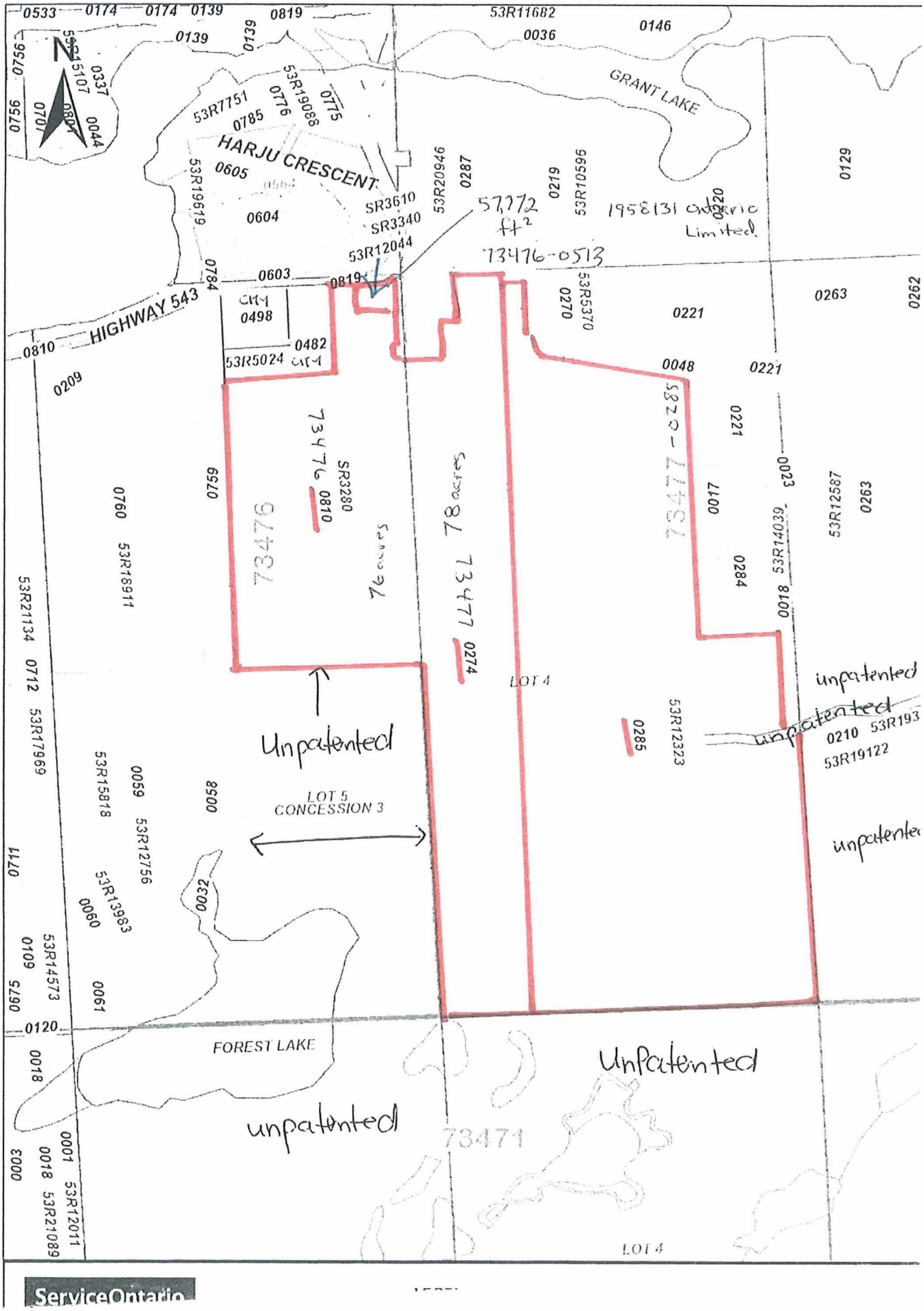
Subject Property being PINs 73477-0274, 73477-0285, 73471-0015, 73471-0016, 73476-0513 & part of PIN 73476-0810, Parcels 1352, 13863, 1659, 1095, 39067, 29357 & 29680, Part 11, Plan 53R-6151, Part 1, Plan 53R-5370, Parts 1 & 2, Plan 53R-12323, Part 1, Plan 53R-20876 & Part 2, Plan 53R-20876, Lots 4 & 5, Concessions 2 & 3, Township of Broder, 0 & 4376 Long Lake Road, 0 Edward Drive, 0, 4693 & 4689 Raft Lake Road, Sudbury, City of Greater Sudbury

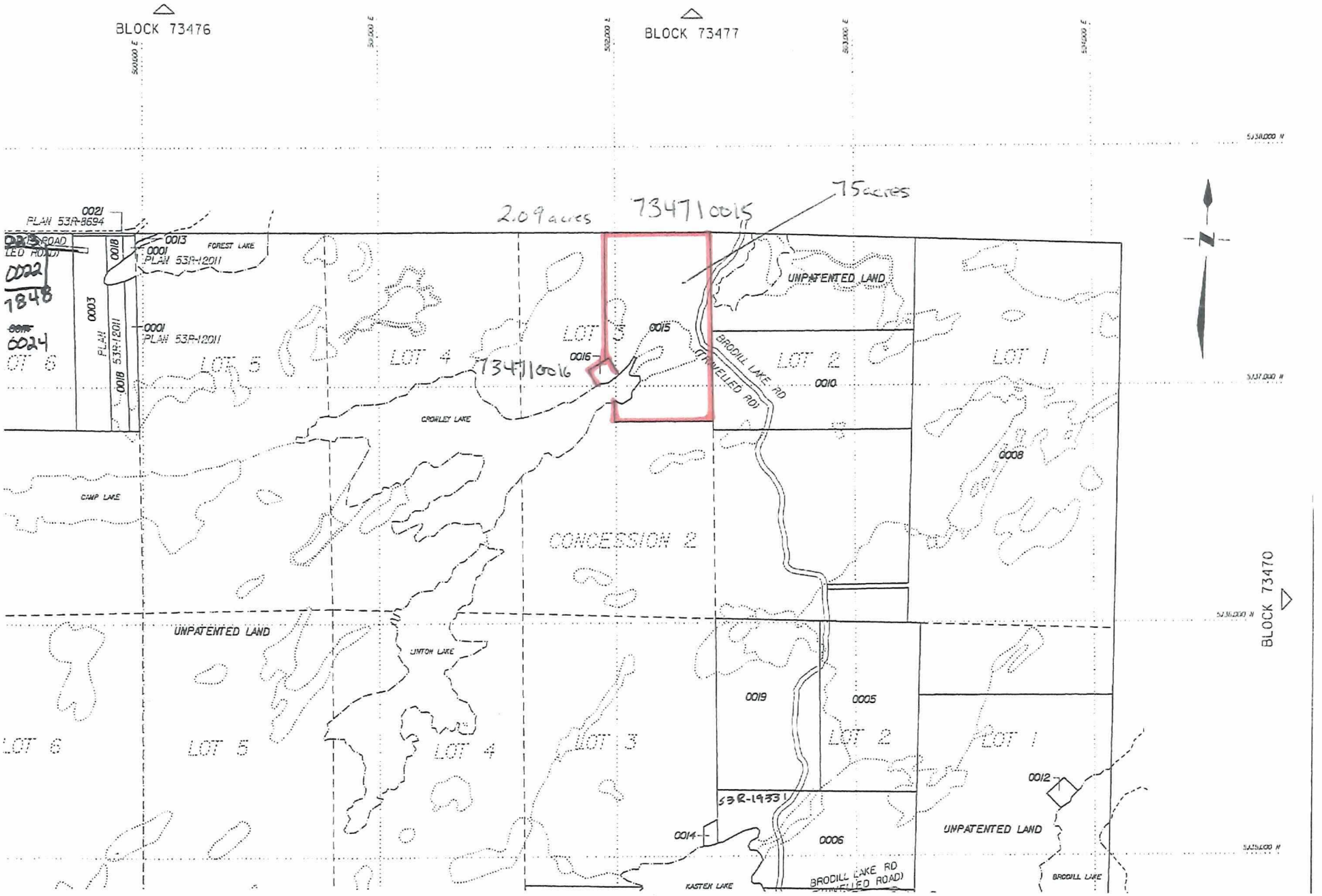
NTS

Sketch 1

751-6/20-27

Date: 2021 01 20


HARJU CRESCENT
HIGHWAY 543
GRANT LAKE
FOREST LAKE
LOT 5
CONCESSION 3
LOT 4
57772 ft²
1958131 Ontario Limited
73476-0513
78476
73476
73477
78 acres
Unpatented
unpatented
unpatented
Unpatented
unpatented
73471
ServiceOntario


BLOCK 73476
BLOCK 73477
BLOCK 73470
2.09 acres
73471 0015
75 acres
0021
PLAN 53R-8694
0013
0001
PLAN 53R-12011
FOREST LAKE
0022
1848
0024
0003
0018
0015
0016
LOT 6
LOT 5
LOT 4
LOT 3
LOT 2
LOT 1
UNPATENTED LAND
BRODILL LAKE RD
(TRAVELLED RD)
CROWLEY LAKE
CAMP LAKE
UNION LAKE
KASTEN LAKE
CONCESSION 2
0010
0008
0019
0005
0012
53R-19331
0014
0006
BRODILL LAKE
N

LOT 5 CONCESSION 4

TRAVELLED ROAD KNOWN AS LONG LAKE ROAD

(FORMERLY SECONDARY HIGHWAY 543)

PART 5

LINE BETWEEN CONCESSIONS 3 & 4

(M.T.O. PLAN P-3198-1)
PLAN P-3198-24
PIN 73476-0819

PART 3
PLAN P-3198-24
PIN 73476-0810

PART 4

PART 2

PART 1
PLAN P-3198-24

ENTRANCE

ENTRANCE

UTILITY POLE

OVERHEAD UTILITY WIRES

63.3±

30.5±

24.5±

34.9±

3.3±

ISLAND

SIGN

CONCRETE CUB

WALKING TRAIL

PART 1
PLAN 53R-20975

SEA CAN

SEA CAN

SEA CAN

SEA CAN

STORAGE SHED

STORAGE SHED

STORAGE SHED

PIN 73476-0513

(CLIFFORD AND LILY FIELDING CHARITABLE FOUNDATION)

OUTLINE OF A 1 STOREY DWELLING ON A CONCRETE FOUNDATION

GARAGE

SHED

PART 1, PLAN SR-3280
PIN 73476-0810
(CLIFFORD AND LILY FIELDING CHARITABLE FOUNDATION)

PARKING AREA

PIN 73476 - 0498
(CITY OF GREATER SUDBURY)

PIN 73476-0482
(CITY OF GREATER SUDBURY)

CONCRETE CUB

GAZEBO

WALKWAY

LOT 5

122.9±

122.9±

PART 1
PLAN 53R-5024
PIN 73476-0482
(CITY OF GREATER SUDBURY)

196.1±

PIN 73476-0810
(CLIFFORD AND LILY FIELDING CHARITABLE FOUNDATION)

PARKING AREA

PARKING AREA

PIN 73476-0482

FIRE WOOD STORAGE

SEA-CANS WITH ROOF OVER TOP

4.8±

FIRE PIT

DECK & RAMP

DECK

TRAILER(A)

TRAILER(B)

TRAILER(C)

STAIRS

DECK & STEPS

10.9±

DECK

DECK

WARMING HUTS

3.0±

RAMP

PRIVY'S

CONCESSION 3

LOT 5 CONCESSION 3

TOWNSHIP OF BRODER

PART 1
PLAN 53R-5024
PIN 73476-0482
(CITY OF GREATER SUDBURY)

FIRE PIT

PIN 73476 - 0725

N

W

E

S

TULLOCH GEOMATICS INC.

SKETCH OF
PART OF LOT 5
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF BRODER
CITY OF GREATER SUDBURY
DISTRICT OF SUDBURY

TERRY DEL BOSCO, O.L.S.

2020

PART 1, PLAN SR-3280
PIN 73476-0810
(CLIFFORD AND LILY FIELDING CHARITABLE FOUNDATION)

STRUCTURE SUMMARY		
CITY OF GREATER SUDBURY		
STRUCTURE	DIMENSIONS(M±)	AREA(SQ.M.±)
GAZEBO	6.72 * 4.90	32.9
TRAILER(A)	3.62 * 12.18	44.1
TRAILER(B)	3.07 * 9.90	30.4
TRAILER(C)	3.07 * 9.90	30.4
SEA-CAN'S WITH ROOF OVERHANG	9.20 * 12.21	112.3
CLIFFORD AND LILY FIELDING CHARITABLE FOUNDATION		
SEA-CANS(4)	2.40 * 12.18	29.2
1 STOREY	8.96 * 9.86	88.3
SHEDS(3)	2.27 * 3.32	7.5
GARAGE	6.75 * 7.34	49.5
SHED	3.78 * 3.87	14.6
WARMING HUTS(2)	3.76 * 4.80	18.0

NOTE

THIS IS NOT A PLAN OF SURVEY
THE INFORMATION SHOWN ON THIS SKETCH HAS BEEN COMPILED FROM THE RECORDS OF TULLOCH GEOMATICS INFORMATION OBTAINED AT THE LAND REGISTRY OFFICE AND FIELD OBSERVATIONS

SCALE 1 : 400

0 10 20 30 METRES

NOTE

DISTANCES SHOWN HEREON ARE IN METERS AND CAN BY CONVERTED TO FEET BY DIVIDING BY 0.3048.

TULLOCH

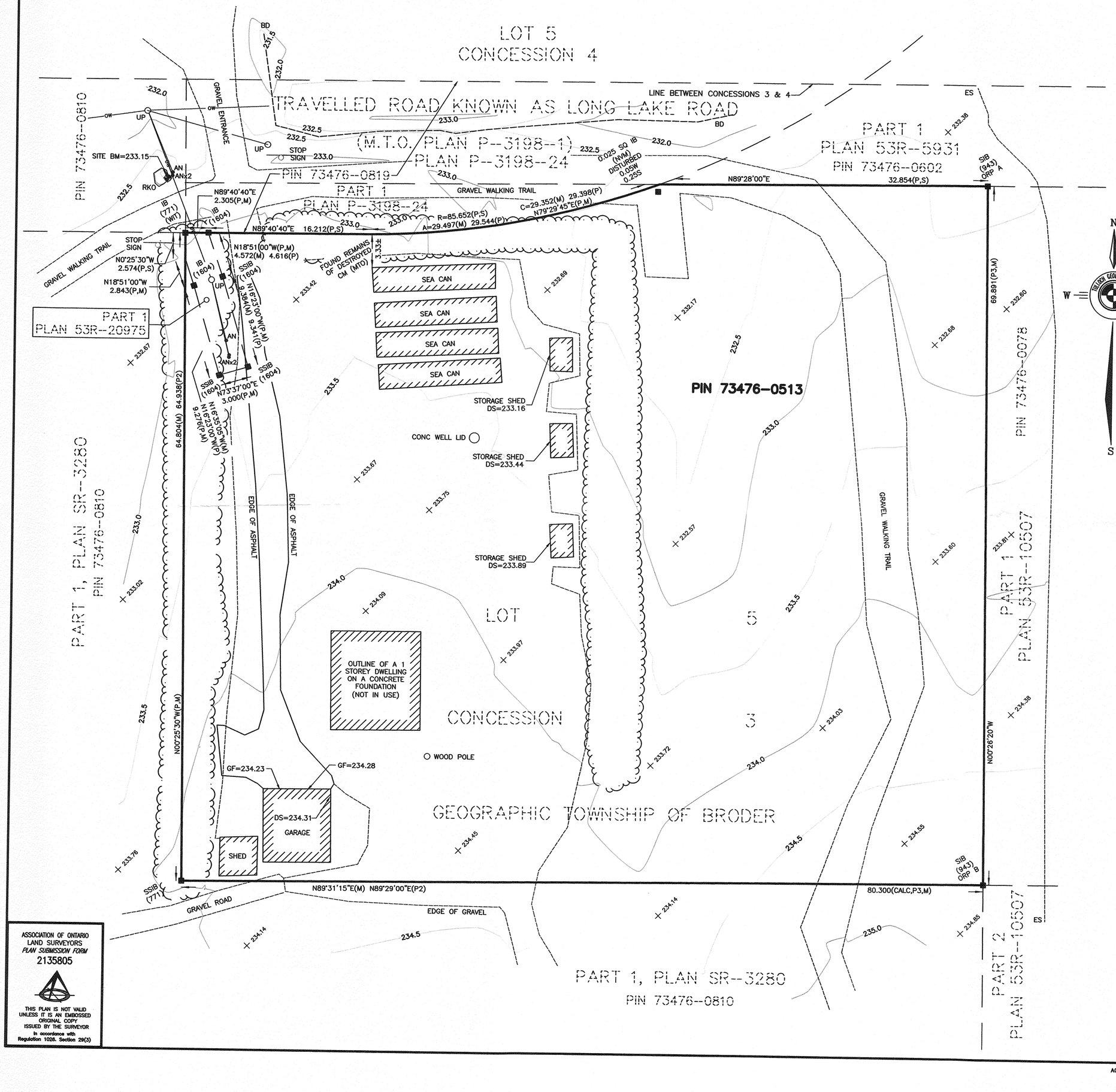
1942 REGENT STREET SUDBURY, ONTARIO
UNIT L P3E 5V5 705-671-2295

TOPOGRAPHIC PLAN OF SURVEY OF PART OF LOT 5, CONCESSION 3 GEOGRAPHIC TOWNSHIP OF BRODER CITY OF GREATER SUDBURY DISTRICT OF SUDBURY

SCALE 1:250

0 3 6 9 12 METRES

TULLOCH GEOMATICS INC., O.L.S.
2020



BEARING NOTE:
BEARINGS ARE UTM GRID DERIVED FROM OBSERVED REFERENCE POINTS A AND B BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17 (81° WEST LONGITUDE) NAD83 (CSRS) (2010.0).

METRIC:
DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

DISTANCE NOTE:
GROUND DISTANCES SHOWN HEREON CAN BE CONVERTED TO UTM GRID DISTANCES BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999569.

ELEVATION NOTE:
ELEVATIONS SHOWN HEREON ARE GEODETIC, ARE REFERRED TO THE CANADIAN GEODETIC VERTICAL DATUM OF 1928 (CGVD28) AND ARE DERIVED FROM THE CITY OF GREATER SUDBURY VERTICAL CONTROL MONUMENT No. 027800042 USING REAL TIME NETWORK (RTN) HAVING AN ELEVATION OF 227.544m.

SITE BENCHMARK NOTE:
SITE BENCHMARK (BM) IS A CONCRETE PIN SET IN BOULDER HAVING AN ELEVATION OF 233.15m.

LEGEND:

■	DENOTES FOUND MONUMENT
□	DENOTES PLANTED MONUMENT
SIB	DENOTES STANDARD IRON BAR 0.025 x 0.025 x 1.22
SSIB	DENOTES SHORT STANDARD IRON BAR 0.025 x 0.025 x 0.61
IB	DENOTES IRON BAR 0.015 x 0.015 x 0.90
CM	DENOTES CONCRETE MONUMENT
ORP	DENOTES OBSERVED REFERENCE POINT
PIN	DENOTES PROPERTY IDENTIFICATION NUMBER
WIT	DENOTES WITNESS
M	DENOTES MEASURED
S	DENOTES SET
NVM	DENOTES NO VISIBLE MARKINGS
P	DENOTES PLAN 53R–20975
P2	DENOTES PLAN SR–3280
P3	DENOTES PLAN 53R–10507
CALC	DENOTES CALCULATION FROM P2 & P3
771	DENOTES E.J. LACKSTROM, O.L.S.
943	DENOTES D.W. ENDLEMAN, O.L.S.
1604	DENOTES TULLOCH GEOMATICS INC., O.L.S.
BD	DENOTES BOTTOM OF DITCH
CONC	DENOTES CONCRETE
CP	DENOTES CONCRETE PIN
DS	DENOTES DOOR SILL
ES	DENOTES EDGE OF SHOULDER
GF	DENOTES GARAGE FLOOR
MTO	DENOTES MINISTRY OF TRANSPORTATION OF ONTARIO
RKO	DENOTES ROCK OUTLINE
SQ	DENOTES SQUARE
OUP	DENOTES UTILITY POLE
● AN	DENOTES ANCHOR
⊕	DENOTES BENCHMARK
----------	DENOTES EDGE OF GRAVEL
——OW——	DENOTES OVERHEAD WIRES
~~	DENOTES WOOD OUTLINE

INTEGRATION COORDINATE TABLE		
COORDINATES ARE DERIVED FROM GPS OBSERVATION USING REAL TIME NETWORK (RTN) AND ARE REFERRED TO UTM ZONE 17 (81° WEST LONGITUDE), NAD83 (CSRS) (2010). COORDINATE VALUES ARE TO URBAN ACCURACY IN ACCORDANCE WITH SECTION 14 (2) OF O.REG 216/10.		
OBSERVED REFERENCE POINTS	NORTHING	EASTING
A	5139246.149	500736.747
B	5139176.288	500737.273
COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE–ESTABLISH THE CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.		

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

(1) THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.

(2) THE SURVEY WAS COMPLETED ON THE 15th DAY OF OCTOBER, 2020.

NOVEMBER 5, 2020
DATE

TERRY DEL BOSCO
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
2135805

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR
In accordance with Regulation 1026, Section 29(3)

TULLOCH GEOMATICS
TULLOCH GEOMATICS INC.
1942 REGENT ST.
UNIT L
SUDBURY, ON
P3E 5V5
T. 705 671.2295
F. 705 671.9477
800 810.1937
sudbury@tulloch.ca

DRAWN BY: EM | FILE: 20–2689

ACAD FILE: J:\2020 Projects\Geomatics\202689 Topo.Boundary.Kivi Park.Long Lake Road_GEOMATICS\001–Project Drawings

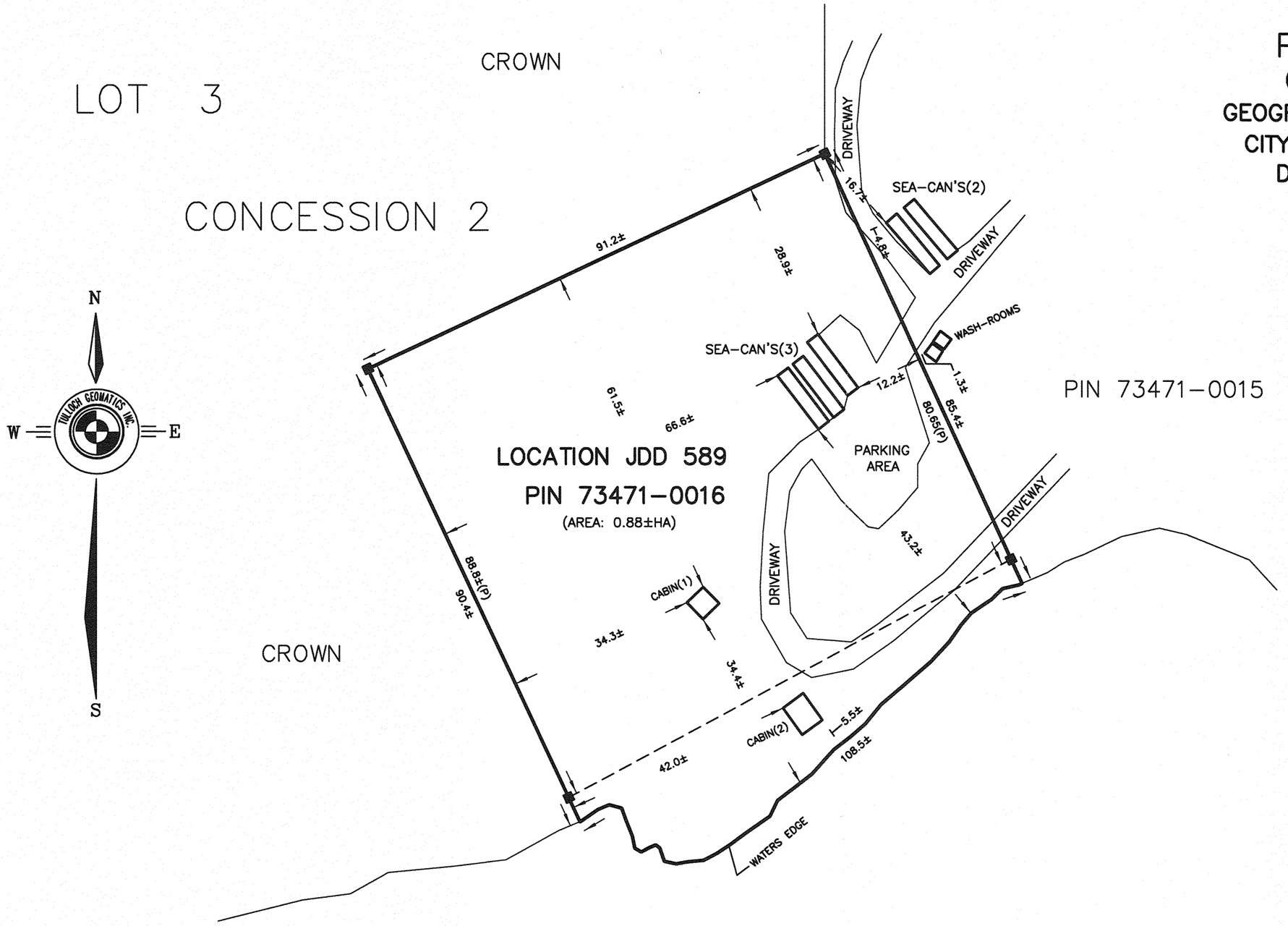
SKETCH OF CROWLEY LAKE PROPERTY

PART OF LOT 3 CONCESSION 2

GEOGRAPHIC TOWNSHIP OF BRODER
CITY OF GREATER SUDBURY
DISTRICT OF SUDBURY

TERRY DEL BOSCO, O.L.S.

2020



STRUCTURE SUMMARY

STRUCTURE	DIMENSIONS(M±)	AREA(SQ.M.±)
SEA–CAN(5)	12.18 * 2.40	29.2
CABIN(1)	4.08 * 4.16	16.0
CABIN(2)	4.53 * 5.96	10.5
WASH–ROOMS(2)	2.43 * 2.43	5.9

LEGEND

■	DENOTES	SURVEY MONUMENT FOUND
□	DENOTES	SURVEY MONUMENT SET
SIB	DENOTES	STANDARD IRON BAR
SSIB	DENOTES	SHORT STANDARD IRON BAR
IB	DENOTES	IRON BAR
RB	DENOTES	ROCK BAR
RPL	DENOTES	ROCK PLUG
P	DENOTES	LETTERS PATENT

SCALE 1 : 750

0 20 40 60 METRES

NOTE

DISTANCES SHOWN HEREON ARE IN METERS AND CAN BY CONVERTED TO FEET BY DIVIDING BY 0.3048.

TULLOCH
1942 REGENT STREET SUDBURY, ONTARIO
UNIT L P3E 5V5 705–671–2295

FILE 202880 CROWLEY LAKE PREPARED BY TDB

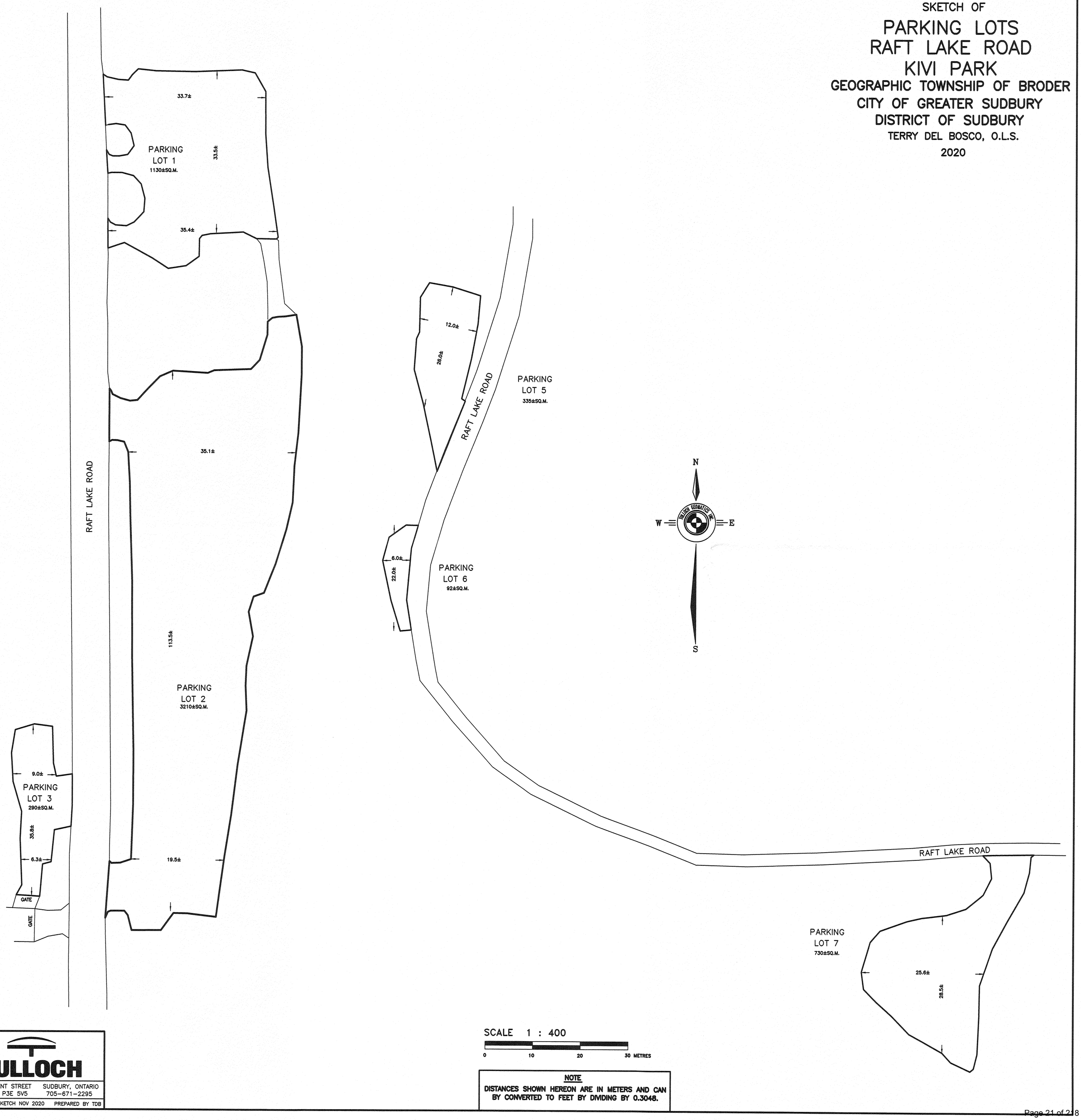
SKETCH OF

PARKING LOTS
RAFT LAKE ROAD
KIVI PARK

GEOGRAPHIC TOWNSHIP OF BRODER
CITY OF GREATER SUDBURY
DISTRICT OF SUDBURY

TERRY DEL BOSCO, O.L.S.

2020



SCALE 1 : 400

0 10 20 30 METRES

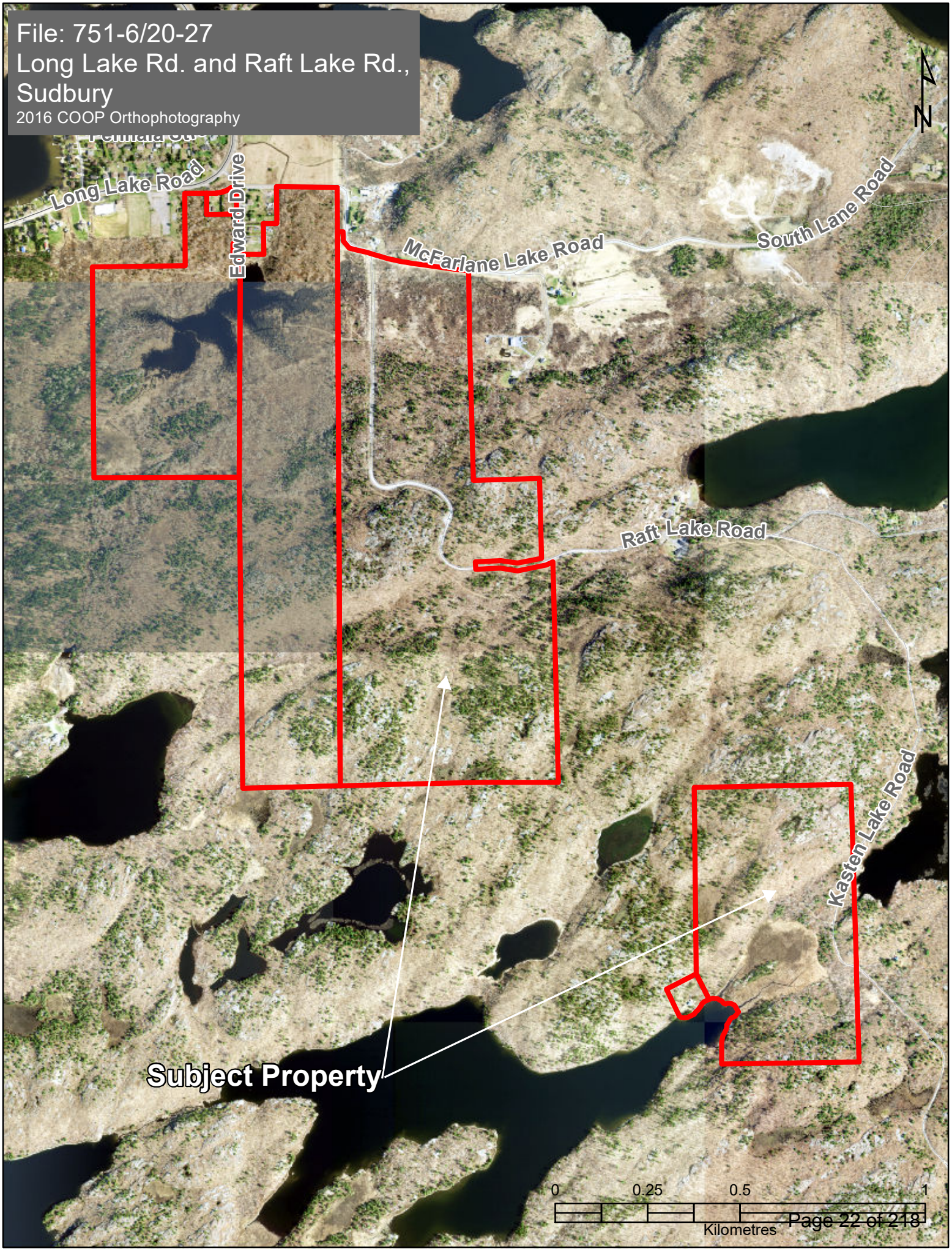
NOTE

DISTANCES SHOWN HEREON ARE IN METERS AND CAN BY CONVERTED TO FEET BY DIVIDING BY 0.3048.

TULLOCH

1942 REGENT STREET SUDBURY, ONTARIO
UNIT L P3E 5V5 705-671-2295

FILE 202880 SKETCH NOV 2020 PREPARED BY TDB


File: 751-6/20-27
Long Lake Rd. and Raft Lake Rd., Sudbury
2016 COOP Orthophotography
N
Long Lake Road
Edward Drive
McFarlane Lake Road
South Lane Road
Raft Lake Road
Kasten Lake Road
Subject Property
0
0.25
0.5
1
Kilometres

Eric Taylor, RPP 2031 Latimer Crescent Sudbury, ON P3E 5N6 ph.705-669-9532

January 19, 2021

MEMORANDUM

To: Wendy Kaufman, MCIP, RPP, Senior Planner, City of Greater Sudbury

From: Eric Taylor, RPP

RE: Rezoning Application Cliff and Lily Fielding Charitable Foundation PINs 73476-0513 and 73476-0810 in Lot 5, Concession 3 and PINs 73477-0274 and 73477-0285, in Lot 4, Concession 3 and PINS 73471-0015, 73471-0016 in Lot 3, Concession 2, Broder Township, City of Greater Sudbury

On June 18, 2020, an application for pre-consultation was submitted to the City of Greater Sudbury to rezone the above-noted lands from a combination of RU, Rural, R1-2 Low Density Residential One and "SLS", Seasonal Limited Service zones to an OSP(S) Open Space Private (Special) zone to permit a private park use, (Kivi Park). The application was considered at a meeting of the Sudbury Planning Application Review Team, (SPART), held on July 8, 2020 and a pre-consultation meeting with Planning Services staff and the applicant was held on July 23, 2020.

This memorandum is being provided to the City, to respond to the information that was requested by Planning Services during the pre-consultation process.

Accompanying this memorandum is a document entitled "Overview of Kivi Park", dated December 2020, which sets out the history, facilities, programming, events and governance related to the park.

Location

The lands owned by the Cliff and Lily Fielding Charitable Foundation encompass approximately 162 ha (400 acres) in the south end of the City of Greater Sudbury generally located to the south of Long Lake and McFarlane Lake Roads and east and west of Raft Lake Road. The lands abut a mix of private and Crown owned lands. A City owned park is located immediately abutting the northwesterly portion of the property next to Long Lake Road. Most of the lands comprising Kivi Park are contiguous with the exception of a parcel located to the north side of Crowley Lake, which is separated from the balance of the Kivi Park lands by Crown Land.

Kivi Park Use

Kivi Park is a privately owned and operated multi-use sports and outdoor park which came into existence and operates as a result of the generous donation of the Fielding family and the Cliff and Lily Fielding Charitable Foundation, (The Foundation). The lands comprising Kivi Park were acquired approximately over the past five years along with the creation of over 35 kilometres of cross-country skiing, hiking, biking and snow shoeing trails, an ice-skating path, and the construction of several parking areas. The property has hosted several sporting competitions and fund-raising events. Three office trailers and other structures (including shipping containers) for storage are located on the property.

The park includes approximately 56 km of trails for snowshoeing, classic and skate cross-country skiing, fat biking, mountain biking, hiking, and walking along with a winter skating path (Nina's Way), warming facilities, change area, fireplaces, and storage facilities. The City-owned lands also includes a playground stucture with a mega tower and gravity rail, being the first of its kind in Northern Ontario.

The lands at Crowley Lake offer kayaking, canoeing and paddle board rentals. Currently, Crowley Lake can be accessed by car or bike via Raft Lake Road. With private road access to this scenic lake, it provides access for swimming, day camping, portaging, and other summertime land and water adventures.

Kivi Park can be accessed twenty-four hours a day, seven days a week, however the trails are not lit, with the exception of the skating path, and signage on the parking lots on Raft Lake Road discourage use after dusk. Access to the Crowley Lake Outpost is restricted by a gate which is locked outside of the hours when it is open from 10 am to 4 pm on Saturday and Sunday. It is noted that hours of operation are subject to change and weather dependent subject to closures during storms and threats of lightning.

Kivi Park is accessible for all ages and abilities. Special considerations have been included throughout the park to ensure features are wheelchair accessible including access to the main office, washrooms and extra wide crusher dust trails.

The lands subject to the rezoning application abut City-owned lands adjacent to Long Lake Road which provide parking and access to an ice rink, basketball courts, baseball diamond, field house and multi-use sports field. These amenities are owned by the City of Greater Sudbury and run by the Kivi Park Neighbourhood Association made of up local volunteers.

There are typically three people working at the park with up to five during trail grooming operations.

Agreement with the City

The City and the Foundation entered into an agreement dated December 19, 2016 allowing for the construction of temporary buildings for the storage of equipment and machinery related to the grooming of trails and warming facilities and the placement of portable washrooms on a portion of the City owned lands. The agreement provided that the Foundation is responsible for obtaining the required permits and for the cost of construction of all improvements. The agreement also provides for the use of the City owned parking lot, by Kivi park users and employees. The agreement expired at the end of 2017 and was replaced by a similar agreement dated January 2, 2018, which expires at the end of 2020. The Foundation and the City are in the process of negotiating a new agreement to cover a time period beyond the end of 2020.

Buildings and Structures

City owned lands – subject to the occupation agreement

In February 2017 a building permit was issued by the City for the 2 trailers and related access ramp and for the storage structure in which the trail groomer is stored. A third trailer is located abutting the two office trailers, which is used as a rental office by Adventure365 which provides rentals for bikes, cross country skis and snowshoes.

Three washrooms with holding tanks are located to the south of the trailers.

A gazebo is located to the east of the main parking area which dates from when Long Lake School occupied the property.

The Foundation lands - Long Lake Road

Just to the east of the City-owned lands are two warming huts located near the skating path and fire pit.

Further to the east are three structures formerly used as a dwelling and accessory garage and storage shed. These buildings are planned to be demolished. Four shipping containers and three small storage sheds, (each 7.5 m^2) are also located on these lands. It is planned that the three storage sheds and shipping containers will remain on this area of the park, to continue to be used for storage purposes. Two above ground fuel storage tanks are also located on this portion of the property, just to the south of the storage sheds. The owner plans to construct a new maintenance building with an area of approximately 300 m^2 on this portion of Kivi Park, which would include a washroom for the use of park maintenance staff. The new maintenance building would allow for the storage of materials and equipment including the zamboni indoors.

There are also two playgrounds with play structures located on the Foundation lands just to the south of the City-owned lands. Two washrooms are located along the multi-use trails on the Foundation lands.

Foundation Lands - Crowley Lake

Two small former camp structures are located on the Crowley Lake lands. The camp structures can be accessed by park uses for shelter however, no sleeping or overnight accommodation is permitted. Five shipping containers are located on these lands which are only accessible by park staff for the storage of canoes and kayaks. The shipping containers are intended to remain in their current use and location. Two washrooms with holding tanks are also located on these lands.

Parking

Parking for Kivi Park is provided through a combination of the main parking lot located on the City-owned lands and six parking lots located on the Foundation Lands adjacent to Raft Lake Road and a parking area at the Crowley Lake property. All of the parking lots are gravel surfaced. The City-owned parking lot is subject to the agreement with the City permitting park users to park their vehicles in the lot. The City-owned parking lot accommodates approximately 90 parking spaces. The six parking lots along Raft Lake Road accommodate approximately 99 parking spaces. It is noted that at one time seven parking lots were located along Raft Lake Road, however access to parking lot number 4 was blocked by the owner subsequent to being advised that the City had visibility concerns with its access location.

The number of parking spaces in each lot has been estimated based on a parking space size of 3m by 6m and minimum aisle widths of 6m. The estimates have also taken into account that the parking lots are gravel surfaced and as such the efficiency in maximizing the number of parking spaces in each is not as optimal as would be possible in paved parking lots with markings. It is also noted that the configuration of the parking lots in some cases result aisle widths greater than 6m. As such, the estimates below are considered to be conservative and reflective of what can reasonably be achieved in each lot.

The highest used parking lot is the parking lot located on the City-owned lands as it is adjacent to the park office and rental facilities, playgrounds and skating path. For all but the largest sporting events, the existing parking lots have proven over the past few years of the parks operation to be more than adequate for accommodating parking demands.

Parking Lots	Number of Spaces
Off-Site City owned lands	90
Raft Lake Road	
1	18
2	52
3	4
5	6
6	3
7	16
Crowley Lake	10*
Crowley Lake	5
TOTAL	204

1. Parking Lot 4 on Raft Lake Road no longer used.
2. Parking lots are as shown on plans prepared by Tulloch submitted to the City with the application for rezoning. Crowley Lake parking lot with 10 spaces adjacent to trail system on lands zoned Rural not delineated on Tulloch plan.

The largest sporting event that Kivi Park has hosted was the 2019 Ontario Federation of Secondary School Athletic Association, (OFSAA), cross-country running championships, which saw 1800 athletes from 300 high schools from across the province compete at the facility along with coaches, volunteers and spectators. To assist in reducing the number of vehicles at the park, shuttle services were provided by Greater Sudbury Transit (GOVA) from the Bell park, parking lots on Paris Street. A communication plan was enacted to encourage participants and spectators to access the site using the shuttle service.

For similar events in the future, that would exceed the park's ability to accommodate on-site parking, Kivi Park would seek to make arrangements with the City or other parties for use of their parking lots with a shuttle service being provided. Park volunteers could also assist as parking attendants to ensure that on-site parking is maximized in the gravel surfaced lots.

The parking lots adjacent to Raft Lake Road are not as heavily used as the main parking lot on Long Lake Road. It is noted that parking lots 5 and 6 which are located just beyond the public section of Raft Lake Road at the top of the ridge, tend to be especially well used, as they provide a convenient terminus for hikers seeking to take advantage of the nearby views which the trails in this area provide.

No heavy truck traffic is generated as part of the typical day to day operations of the park. Some limited heavy truck traffic for the delivery of construction materials is expected for a short period time during the construction of the maintenance building.

Lighting

Lighting on the site is limited with none of the parking lots lit. Motion sensor lights are located at the rear of the trailers and on the structure to the east of the trailers in which the snow groomer is stored. The 1.3 km long Nina's Way Ice Path has LED lights for evening skating with the lighting turned off at 9 pm.

The closest residential properties to the skating path are located over 50 m to the north on the north side of Long Lake Road with approximately 30 m of forested area between the path and Long Lake Road. There does not appear to be any off-site lighting impacts associated with the skating path.

The maintenance/operations yard is not currently lit. The owner does plan to install two motion sensor lights in this area. As part of the site plan process for the new maintenance building, lighting options will be reviewed in this area with the City to ensure that there are no off-site impacts.

Servicing

The main site is serviced by three washroom privies with holding tanks located on the City-owned lands, adjacent to the office and rental trailers. Another washroom with a holding tank is located on the trail system on Foundation lands. Two washrooms with holding tanks are also located on the Crowley Lake lands.

A well is located on the portion of the Foundation lands which serviced the former dwelling at 4376 Long Lake Road. The owner anticipates using this well to provide potable water to the new maintenance building for parks operations staff. An existing septic system is located to the east of the former dwelling which if possible, would also service the future maintenance building. Should it be determined that a new septic system needs to be installed, the required approvals will need to be obtained from Public Health Sudbury and District.

Requested Zoning

All of the subject lands are currently zoned "RU" Rural with the exception of 0.5 ha zoned "R1-2" Low Density Residential Two and 0.88 ha adjacent to Crowley Lake zoned "SLS" Seasonal Limited Service. The owner is requesting that all of the lands be placed in an "OSP" Open Space Private Zone with the following special provisions:

That the permitted use be for a privately owned park permitting passive and active recreational uses and associated accessory uses and structures including but not limited to those for maintenance and servicing, the provision of food and the rental and storage of sports related equipment and boats for park users and parking areas.

Shipping Containers

There are currently a total of nine shipping containers located on the Foundation lands, with five of the containers located on the Crowley Lake lands and four located just south of Long Lake Road. The owner would like to retain all of the existing shipping containers on site in their current location. The four containers located south of Long Lake Road are located in the maintenance/operations yard area for the park and are well screened and are not visible to the travelling public along Long Lake Road and are also not visible from Edward Drive or the residents to the east. It is noted that at one time, six shipping containers had been located on this portion of the property, but two containers have since been removed by the owner.

The five shipping containers located on the Crowley Lake property are set back approximately 43 m from the Lake and are well removed from any nearby residents and are screened from views from the lake and nearby Crown-lands by the existing vegetation.

An exception is requested to permit a maximum of four shipping containers on the lands comprising PIN 73476-0513 and two shipping containers on lands comprising PIN 73471-0015 and three shipping containers on lands comprising PIN 73471-0016.

Front yard setback – Long Lake Road

The shipping container at its closest to the front lot line adjacent to Long Lake Road is setback approximately 3.3 m whereas the Zoning By-law requires a setback of 10 m. It is noted that as a result of the curve in Long Lake Road and the configuration of the road allowance, there is a distance of approximately 32 m from the property to the travelled portion of Long Lake Road which is heavily vegetated with the exception of a walking trail. In addition to the treed area on the boulevard, mature evergreens are located on the Foundation lands within the approximate 3 m immediately adjacent to the front lot line. In consideration of the unique circumstances of the significant setback to the travelled portion of the road and screening provided by the vegetation, a 3 m setback to the shipping containers is considered appropriate in this case and is requested to be included as an exception to the By-law.

Building Separation

The existing shipping containers are located at distances between them which are less than the required 3 m building separation with the smallest distance between the containers being 0.5 m. As a result, the owner is requesting an exception to permit a minimum distance separation of 0.5 m between adjacent shipping containers.

The two warming huts located on PIN 73476-0810, next to Nina's Way skating path are also located less than 3 m from each other at 1.52 m. An exception to permit a minimum distance separation of 1.5 m between these existing structures is requested.

The two washrooms located on PIN 73471-0015 (Crowley Lake property), are located immediately adjacent to each other and as such a minimum distance separation of 0 m is requested for these existing structures.

Side Yard Setback

A fire pit and a small unenclosed structure used for storing firewood are located on PIN 73476-0810. These structures are located at approximately 4.8 m and 0 m from the side yard with the City-owned lands to the west, both being less than the required 10 m setback. An exception is requested to permit these structures at 4 m and 0 m setback from the interior side yard.

Landscape Strips

The dwellings located on the east side of Edward Street are the closest to the maintenance/operations area of the park. The three small storage sheds located to the south of the shipping containers are setback approximately 40 m from Edward Street. The intervening area is forested with the exception of a trail which crosses the area. In order to ensure that this area continues to be adequately screened and buffered in the future from Edward St. it is recommended that an exception be included in the By-law requiring a minimum 30 m wide landscape strip, which would also permit a trail to be located within it.

An exception to the landscaping provisions of the By-law is also requested to recognize the absence of landscaped strips adjacent to the three parking lots that abut the public portion of Raft Lake Road. It is noted that while the northerly portion of Raft Lake Road is considered to be a publicly maintained road from McFarlane Lake Road to just to the north of the entrance to parking lot 5 on the Foundation lands, it appears to be still legally in the title of the Foundation in PIN 73477-0285. As a result of there being no defined surveyed limit for Raft Lake Road in this area, and that the owners have not provided a specific landscaped treed buffer adjacent to the parking area and the travelled road, an exception to the Zoning By-law standard is being requested. Further, given the abundance of natural vegetation being preserved and maintained by the owner as a

private park and the relatively small portion of the frontage of the public road with parking lots adjacent to it, an exception is considered to be appropriate and warranted.

Building Setback – Edward Street

The minimum building setback of 10 m from Edward Street is proposed to be increased to 35 m in order to ensure compatibility with the residents to the east and the maintenance/operations area and provide for a minimum 30 m wide landscape strip as recommended above.

Statement with respect to the Official Plan for the City of Greater Sudbury, Provincial Policy Statement and Growth Plan for Northern Ontario

The private park use is considered to conform to the City's Official Plan in providing a significant recreational amenity for the use and enjoyment of the residents of the City of Greater Sudbury as well as visitors to the City. Such uses are permitted within the Rural and Living Area designations of the City's Official Plan.

The application for rezoning is also considered to be consistent with the Provincial Policy Statement. In this regard, specifically Policy 1.5.1 b) which provides that healthy active communities should be promoted by 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. Policy 1.51.c) of the Plan, also promotes the provision of opportunities for public access to shorelines.

The application does not appear to conflict with any aspects of the Growth Plan for Northern Ontario.

Conclusion

The information contained herein, along with the accompanying plans prepared by Tulloch respond to the items identified by the City in the pre-consultation understanding form, respecting the use, buildings and structures, parking, servicing, lighting, buffering from adjacent uses, along with exceptions being requested to the standard zone provisions.

Should you have any questions or require further clarification, please contact me.

Eric Taylor, RPP

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THE RAFT LAKE RATEPAYERS ASSOCIATION

Established in 1974

RECEIVED
FEB 1 2021
PLANNING SERVICES

To: Alex Singbush
Manager of Development Approvals
Planning Services Division
The City of Greater Sudbury

Mr. Singbush:

I am writing this letter as President of the Raft Lake Ratepayers Association in regards to the notice of application file number 751-6/20-27 submitted by the Clifford and Lily Fielding Charitable Foundation. The application is to amend the zoning bylaw for Kivi Park property, a portion of which encompasses part of Raft Lake Road.

Please note that the Raft Lake Ratepayers Association is in support of this application to amend the zoning status of the subject lands to Open Space Private Special (OSP(S)). This designation would help preserve the subject properties in a relatively natural state while providing recreational activities and outdoor experiences with the facilities already in place in Kivi Park.

As members of our association are property owners along the South and North shores of Raft Lake, the South and West shores of Little Raft Lake, as well as along Kasten Lake Road and Raft Lake Road, we would ask to be informed of any proposed changes, zoning or otherwise, to properties in our area. Information can be funneled through me as the President of the association. My contact information is provided below. I would be pleased to disseminate any information provided to our membership.

Sincerely,

Michael A Mirka
President
Raft Lake Ratepayers Association

5628 Raft Lake Road
Sudbury ON P3G 1M4

[redacted] (home)
[redacted] (cell)

Photo 1: East side of the subject lands from the end of Edward Avenue looking north. Photo taken March 18, 2021, File #751-6/20-27.

Photo 2: Single detached dwelling at the end of Edward Drive, east of the subject lands looking southeast. Photo taken March 18, 2021, File #751-6/20-27.

Photo 3: Parking Lot #1 east of Raft Lake Road looking east. Photo taken March 18, 2021, File #751-6/20-27.

Photo 4: Parking Lot #2 east of Raft Lake Road looking southeast. Photo taken March 18, 2021, File #751-6/20-27.

Photo 5: Parking lot #3 west of Raft Lake Road looking southwest. Photo taken March 18, 2021, File #751-6/20-27.

Photo 6: Parking Lot #5 east of Raft Lake Road looking southwest. Photo taken March 18, 2021, File #751-6/20-27.

Photo 7: Parking Lot #6 east of Raft Lake Road looking west. Photo taken March 18, 2021, File #751-6/20-27.

Photo 8: Parking Lot #7 south of Raft Lake Road looking south. Photo taken March 18, 2021, File #751-6/20-27.

Photo 9: Former residential dwelling and garage at 4376 Long Lake Road looking south. Photo taken March 18, 2021, File #751-6/20-27.

Photo 10: Four shipping containers at 4376 Long Lake Road looking north. Photo taken March 18, 2021, File #751-6/20-27.

Photo 11: Warming huts and fire pit on PIN 73476-0810, east of lands owned by the City looking south. Photo taken March 18, 2021, File #751-6/20-27.

Photo 12: Wood storage structure on PIN 73476-0810 east of lands owned by the City, looking west. Photo taken March 18, 2021, File #751-6/20-27.

Photo 13: Kivi Park main entrance and parking area on City-owned lands, looking south. Photo taken March 18, 2021, File #751-6/20-27.

Photo 14: Kivi Park structures on City-owned lands, looking southeast. Photo taken March 18, 2021, File #751-6/20-27.

Photo 15: Low density residential dwellings on the north side of Long Lake Road, opposite Kivi Park main entrance, looking northeast. Photo taken March 18, 2021, File #751-6/20-27.

Photo 16: Low density residential dwellings on the north side of Long Lake Road, opposite Kivi Park main entrance, looking northwest. Photo taken March 18, 2021, File #751-6/20-27.

Photo 17: Kasten Lake Road at the Kivi Park entrance at Crowley Lake looking north. Photo taken February 28, 2021, File #751-6/20-27.

Photo 18: Driveway into Crowley Lake looking west. Photo taken February 28, 2021, File #751-6/20-27.

Photo 19: Shelter structures at Crowley Lake looking south. Photo taken February 28, 2021, File #751-6/20-27.

Photo 20: Shelter structure at Crowley Lake near the shoreline looking west. Photo taken February 28, 2021, File #751-6/20-27.

Photo 21: Shelter structure at Crowley Lake looking northwest. Photo taken February 28, 2021, File #751-6/20-27.

Photo 22: Washroom structures at Crowley Lake looking east. Photo taken February 28, 2021, File #751-6/20-27.

Photo 23: Shipping containers and washroom structures at Crowley Lake looking east. Photo taken February 28, 2021, File #751-6/20-27.

Municipal Road 80, Val Therese

Presented To:	Planning Committee
Meeting Date:	April 26, 2021
Type:	Public Hearing
Prepared by:	Mauro Manzon Planning Services
Recommended by:	General Manager of Growth and Infrastucture
File Number:	751-7/20-04

Report Summary

This report provides a recommendation regarding a rezoning application in order to permit an elementary school and day care centre, Municipal Road 80, Val Therese – Georgette Paquette

This report is presented by Mauro Manzon, Senior Planner.

Resolution

THAT the City of Greater Sudbury approves the application by Georgette Paquette to amend Zoning By-law 2010-100Z by changing the zoning classification from "FD", Future Development to "I", Institutional and “OSP”, Open Space Private on lands described as Part of PIN 73505-0340, Part of Part 2, Plan 53R-5645 in Lot 7, Concession 2, Township of Hanmer, as outlined in the report entitled “Municipal Road 80, Val Therese”, from the General Manager of Growth and Infrastructure, presented at the Planning Committee meeting on April 26, 2021, subject to the following conditions:

a) That the owner provides the Development Approvals Section with a final plan of survey in order to enact the amending by-law;

b) That the lands be rezoned in accordance with the preliminary survey plan prepared by D.S. Dorland Limited and dated January 21, 2021 as follows:

   i) Part 1 to be rezoned “I”, Institutional;
   ii) Part 2 to be rezoned “OSP”, Open Space Private.

c) That the following matters shall be addressed as part of the Site Plan Control Agreement based on the recommendations of the Traffic Impact Study:

   i) The owner shall be required to install a full set of traffic signals at the intersection of Municipal Road 80 and Shirley Avenue prior to the opening of the school; and further, that the cost of the design and installation of the traffic signals be fully funded by the owner; and,
   ii) A paved pedestrian/bike path on the west side of Municipal Road 80 (removed from the vehicular roadway) shall be provided from the school driveway to Jeanne d'Arc Street.

d) Conditional approval shall lapse on May 11, 2023 unless Condition a) above has been met or an extension has been granted by Council.

Relationship to the Strategic Plan / Health Impact Assessment

The application to amend the Zoning By-law is an operational matter under the Planning Act to which the City is responding. The application contributes towards the goals and objectives of the 2019-2027 City of Greater Sudbury Strategic Plan by enhancing the City's educational sector.

Financial Implications

This report has no financial implications.

Report Summary

An application for rezoning has been submitted in order to permit a new elementary school and day care centre on undeveloped lands located on the west side of Municipal Road 80 opposite Shirley Avenue in Val Therese. The new school is being developed by the Conseil scolaire catholique du Nouvel-Ontario (CSCNO) and is intended to replace École Ste-Thérèse, École St-Joseph and École Notre-Dame.

The main land use considerations are related to access and the designated flood plain. The construction of the Hope Municipal Drain has realigned the boundaries of the flood plain, which is now contained within the channel of the municipal drain. There is no conflict with the Provincial Policy Statement, which does not permit elementary schools on lands subject to flooding.

In terms of providing safe access for all modes of transportation, it has been determined that the school cannot operate without benefit of full signalization at Shirley Avenue. In order to facilitate walking and cycling for those students within walking distance of the school, the Board will institute various programming elements to encourage active transportation in a safe manner. As a condition of approval, it is recommended that the installation of full signalization be required and that the cost of the design and installation of the traffic signals be fully funded by the owner.

The application demonstrates conformity with the Living Area policies of the Official Plan and presents consistency with Provincial policies applied to new institutional uses in designated growth areas.

Staff Report

Proposal:

An application for rezoning has been submitted in order to permit a 5,472 m^2 elementary school and day care centre on vacant lands located on the west side of Municipal Road 80 opposite Shirley Avenue in Val Therese. The proposed 6.57 ha lot will have approximately 349 metres of frontage on MR80 and would be accessed by a driveway that is aligned with the Shirley Avenue intersection.

The proposed elementary school will accommodate up to Grade 8 and have an enrolment of approximately 570 students and 74 staff, as well as a day care centre for 73 children with 28 staff. The new school is being developed by the Conseil scolaire catholique du Nouvel-Ontario and is intended to replace École Ste-Thérèse, École St-Joseph and École Notre-Dame.

As part of a complete application, the proponents provided the following background materials in support of the application:

- Traffic Impact Study, Proposed New Elementary School, Municipal Road 80, Val Therese (Tranplan Associates – November 2019);

- Ecological Site Assessment, Lot 7, Concession 2, Township of Hanmer, Val Therese, Ontario (DST

Consulting Engineers – August 12, 2019); and,

- Sewer and Water Capacity Analysis (September 24, 2019).

Existing Zoning: "FD", Future Development

The subject land is currently zoned “FD”, Future Development, which is typically applied to lands within settlement areas that are earmarked for future development in conformity with the underlying land use designation in the Official Plan. A single detached dwelling is permitted as an interim use on a legal existing lot zoned FD.

Requested Zoning: "I", Institutional and “OSP”, Open Space Private

The proposed zoning would allow all uses permitted in the “I”, Institutional zone as follows:

Children’s home, a day care centre, a place of worship, a hospital, a private club, a non-profit or charitable institution, a group home type 1, a group home type 2, a special needs facility, a recreation and community centre, an arena, a public museum, a public library, a public business, a public fire hall, a public or private school other than a trade school, or any public use other than a public utility.

It is further proposed to rezone the southerly and easterly portions of the lands to “OSP”, Open Space Private in recognition of the Hope Municipal Drain and the associated flood plain. In OSP zones, the only permitted use is a park. Public uses such as a municipal drain are permitted in all zones.

Location and Site Description:

Part of PIN 73505-0340, Part of Part 2, Plan 53R-5645 in Lot 7, Concession 2, Township of Hanmer (Municipal Road 80, Val Therese)

The subject property forms the southeast portion of a large undeveloped parcel located opposite Shirley Avenue in Val Therese. The area is fully serviced by municipal water and sanitary sewer. MR80 is not urbanized at this location, as there are no curbs, gutters or sidewalks. There is a centre turn lane along this portion of MR80, as well as transit stops located at Shirley Avenue on both sides of the road.

Total area of the land to be rezoned is 6.57 ha, with 349 metres of frontage on MR80. The land is currently vacant and noted for its open space areas and intermittent treed areas. The Hope Municipal Drain extends along the easterly limit of the property, extending westerly on the southerly portion of the land. This area forms part of a designated flood plain as illustrated on the attached regulation area map. It should be noted that the watercourse that bisected the parcel has been realigned to the easterly limit of the subject land, which remains part of a regulated area.

Low density housing is located on the east side of MR80. Vacant lands designated as Living Area 1 that form the remainder of the parent parcel are located to the west and north. Pinecrest Gardens subdivision abuts the southerly limit of the property. One (1) phase of the planned subdivision has been registered, with 34 lots remaining with draft approved status.

Public Consultation:

Notice of complete application was circulated to the public and surrounding property owners on March 2, 2020. The statutory notice of the public hearing was provided by newspaper along with a courtesy mail-out circulated to the public and surrounding property owners within 244 metres of the property on April 8, 2021.

The applicant was advised of the City’s policy recommending that applicants consult with their neighbours, ward councillor and key stakeholders to inform area residents on the application prior to the public hearing.

The Board conducted consultation with parents and other stakeholders as part of the site selection process. In regards to the rezoning process, a public open house was initially proposed at École Ste-Thérèse prior to

the restrictions on public gatherings. Due to the emergency order, the proponents subsequently conducted an online virtual meeting.

As of the date of this report, two (2) phone calls have been received seeking clarification. No written submissions have been received.

Policy and Regulatory Framework:

The property is subject to the following policy and regulatory framework:

- 2020 Provincial Policy Statement
- 2011 Growth Plan for Northern Ontario
- Official Plan for the City of Greater Sudbury, 2006
- Zoning By-law 2010-100Z

Provincial Policy Statements and geographically specific Provincial Plans, along with municipal Official Plans, provide a policy framework for planning and development in the Province. This framework is implemented through a range of land use controls such as zoning by-laws, plans of subdivision and site plans.

Provincial Policy Statement (PPS):

Municipalities in the Province of Ontario are required under Section 3 of the *Planning Act* to ensure that decisions affecting planning matters are consistent with the Provincial Policy Statement.

Settlement areas are defined as the full extent of lands designated for development as delineated in the Official Plan. Designated growth areas are lands within settlement area boundaries that are designated to accommodate growth but are not yet fully developed.

Under Section 1.1 of the PPS, the municipality shall accommodate an appropriate range and mix of uses, including institutional uses such as schools. The focus of growth and development shall be settlement areas. New development in designated growth areas should occur adjacent to the existing built-up area.

A portion of the property falls within a designated flood plain. Under Section 3.1.5, development shall not be permitted to locate in hazardous lands and hazardous sites where the use is an institutional use, including pre-schools, school nurseries, day cares and schools.

Growth Plan for Northern Ontario (GPNO):

Municipalities in the Province of Ontario are required under Section 3 of the *Planning Act* to ensure that decisions affecting planning matters conform with the Growth Plan for Northern Ontario.

The GPNO contains policies intended to strengthen educational attainment and expand learning opportunities for residents. Most notably, Section 3.2.4 states that the Province will work with school boards and other partners to support an educational system (kindergarten to grade 12) that continues to accommodate the unique needs and circumstances of all Northern Ontario communities.

Official Plan for the City of Greater Sudbury:

The subject lands have a split land use designation. The central and northerly portions of the property are designated as Living Area 1, which encompass the area proposed to be developed. A southerly portion of the property is designated as Parks and Open Space, which essentially aligns with the designated flood plain.

Living Area 1

Local institutional uses that are compatible with the residential function of neighbourhoods are allowed in all Living Area designations subject to rezoning, including elementary schools and day care centres. In reviewing applications for rezoning in Living Areas, the following criteria under Section 3.2.1 of the Official Plan are to be considered:

a. the site is suitable in terms of size and shape to accommodate the proposed density and building form;
b. the proposed development is compatible with the surrounding neighbourhood in terms of scale, massing, height, siting, setbacks, and the location of parking and amenity areas;
c. adequate on-site parking, lighting, landscaping and amenity areas are provided; and,
d. the impact of traffic on local streets is minimal.

Built boundary

Schedule 3 of the Official Plan identifies the limits of the settlement area and the built boundaries of the City. Under Section 2.3.2 of the Official Plan, intensification and development within the built boundary is encouraged. Notwithstanding the above, development outside of the built boundary may be considered in accordance with the policies of this Plan.

At this location, the westerly limit of the MR80 right-of-way forms the built boundary. As a result, the subject site is located within the settlement area but is just outside the built boundary of the Valley East urban area.

Policies applied to Species at Risk under Section 9.2.2

Development and site alteration are not permitted in habitat of endangered species and threatened species except in accordance with Provincial and Federal requirements.

Development and site alteration are not permitted on lands adjacent to habitat of endangered species and threatened species 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 feature or their ecological functions. Adjacent lands to endangered species and threatened species may vary depending on general habitat descriptions. Habitat descriptions can be obtained through the Ministry of Natural Resources and Forestry. This area can be modified if justified by a study completed by a qualified professional.

Flooding hazards

The Parks and Open Space designation encompasses a flood plain associated with the municipal drain that traverses the property. Flood plain boundaries are illustrated on the attached regulation area map. Lands with identified natural hazards are generally not suitable for development.

Under Section 10.2, institutional uses such as hospitals, long-term care facilities, retirement homes, pre-schools, elementary schools and secondary schools; essential emergency services and industrial uses involving the disposal, manufacture, treatment or storage of hazardous substances are not permitted on lands subject to flooding or erosion hazards.

Policies applied to Roads and Active Transportation

Under Section 11.2.3, proposed developments that may affect the function of any municipal road may require a traffic study to assess such impacts and to propose mitigating measures.

Municipal Road 80 is designated as a Primary Arterial Road and is subject to the policies outlined under

Chapter 11, Table 2: Road Classifications. The key policies applied to Primary Arterial Roads are summarized as follows:

- Main function is to connect communities and major activity areas within the City;
- Traffic movement is a primary consideration;
- Access is restricted to other Arterial Roads, Collector Roads and driveways to major regional activity centres;
- Design speed ranges from 60 – 100 km/h; and,
- No on-street parking is permitted and buffers are required between the roadway and adjacent uses.

Section 11.7 of the Official Plan addresses active transportation components including sidewalks and cycling infrastructure. Development proposals will be reviewed to ensure that there is adequate pedestrian access in new developments. The City may acquire lands to provide pedestrian facilities as a condition of approval. Wherever possible, the provision of adequate bicycle facilities will be encouraged.

It is policy of this Plan to provide sidewalks on both sides of urban Arterial Roads and Collector Roads adjacent to developed lands on new and reconstructed roads, when feasible.

Zoning By-law 2010-100Z:

There are no issues related to zoning compliance. The proposed severance exceeds the minimum requirements of the Institutional zone. The building layout does not require any site-specific relief.

Site Plan Control:

A Site Plan Control Agreement is required prior to the issuance of a building permit.

Department/Agency Review:

Development Engineering has confirmed that municipal services are adequate for the site following a sewer and water capacity review, including fire flows.

Conservation Sudbury have noted the realignment of the flood plain and have commented accordingly.

Transportation & Innovation Section recommend that approval be contingent upon the installation of a full set of traffic signals at the intersection of MR80 and Shirley Avenue prior to the opening of the school and that the cost of the design and installation of the traffic signals be fully funded by the owner.

Planning Analysis

There are various layers of Official Plan policies that are applicable to this proposal, as detailed in the above section. This is due to the locational characteristics of the site, being a vacant parcel designated for future development on a major arterial road that is not constructed to an urban standard. Furthermore, the subject property contains a municipal drain and an associated flood plain on a portion of the land.

The review of this proposal is largely focused on two (2) key land use considerations:

- Access to the site, encompassing all modes of transportation; and,
- The presence of a designated flood plain, which is a matter of Provincial interest concerning the siting of new institutional uses.

Land use compatibility

The new school will have direct access to a major arterial road, unlike the elementary schools that are being replaced, which are embedded in low density residential areas. This is a reflection of the increasingly large school catchment areas within the City, for which new schools typically require larger sites on Collector and

Arterial Roads.

No land use conflicts with adjacent low density housing are envisioned with this proposal. The subdivision to the south directly abuts land that will be rezoned as parkland in recognition of the municipal drain and associated flood plain.

Although the lands were historically farmed, the subject site is not designated as part of the Agricultural Reserve, which is located approximately 106 metres to the west and is delineated by the “A”, Agricultural zoning on the location map. There are no large-scale farming operations in the vicinity that may result in adverse impacts based on a review of assessment data.

Suitability of site

The proposed lot to be severed from the parent parcel is adequately sized to accommodate the new school and associated accessory uses, including a day care centre and an expansive outdoor play area to the south. There are no concerns related to parking requirements and all building setbacks can be addressed, including the required 45-metre setback from the municipal drain along the easterly limit of the property.

The overall layout has been configured to accommodate future development on the retained lands to the west and north, which are also designated as Living Area 1. The proposed access is 20 metres wide, which is sufficient right-of-way width for a future pubic road. An access easement is proposed at the consent stage in order to provide driveway access to the school that will align with Shirley Avenue.

The Board advised that the subject site meets their locational criteria as part of the site selection process conducted with parents and staff, and further, that Provincial funding for the project has been approved.

Species at Risk (SAR)

The Ministry of Natural Resources and Forestry (MNRF) advised that the site may be utilized by Barn Swallow, Bobolink and Eastern Meadowlark, all of which are bird species listed as threatened under the Endangered Species Act. An Ecological Site Assessment was therefore required as part of a complete application (attached for review).

Four (4) field surveys were conducted in June 2019. The site is described as being an agricultural field consisting of grass, sedges, and forbs. Forested areas mainly comprised of Trembling Aspen, Black Spruce and Birch are present on the westerly portion of the property. No evidence of Barn Swallow, Eastern Meadowlark, Bobolink or their habitat was observed at the time of the field surveys. The field surveys did not identify potential habitat for any of the listed species.

Based on the results of the submitted report as reviewed by the Manager of Environmental Planning Initiatives, there are no concerns related to Species at Risk.

Flood plain

The southerly and easterly portions of the property contain the Hope Municipal Drain and an associated flood plain. It is important to note that the limits of the flood plain have been modified and are not reflected by the current flood plain mapping. The watercourse that bisected the parcel has been realigned along the easterly limit of the parcel.

Based on the Engineering Report for the Hope Drain (K. Smart Associates Ltd., June 20, 2006), the Regional Storm Event is contained by the banks of the improved channel, and as a result, the flood plain does not encroach onto the property. The study recommends a 45-metre setback from the top of the bank of the Hope Drain for any future development. This matter has been reviewed by Conservation Sudbury as outlined in the appendix to this report.

Based on the above information, the proposal addresses an important matter of Provincial interest, which stipulates that institutional uses such as schools and day cares shall not be permitted to locate in hazardous lands and hazardous sites, including flood plains.
As a condition of approval, it is therefore recommended that the municipal drain and associated flood plain be zoned restrictively to “OSP”, Open Space Private in recognition of the physical constraints to development. These lands are identified as Part 2 on the preliminary survey plan submitted by the applicant. The only permitted use in the OSP zone is a park. A municipal drain is permitted in all zones as a type of public use.

Access

Access considerations extend to all four (4) major modes of transportation, including driving, public transit, cycling and walking. The subject property presents specific challenges given that the site is not fully integrated into the City’s transportation network. Municipal Road 80 is not constructed to an urban standard at this location, as there are no sidewalks, bike lanes or widened paved shoulders on either side of the street. The site does not benefit from an existing signalized intersection or access via an existing Local or Collector Road. Furthermore, it is disconnected from the built-up area by virtue of its location just outside the built boundary. Notwithstanding the above, there is a transit stop located on the west side of MR80 opposite Shirley Avenue (Route 105).

The proponents submitted a Traffic Impact Study (TIS) in support of the application. The traffic analysis revealed that anticipated traffic volumes do not warrant traffic signals based on Ministry of Transportation guidelines. However, the TIS determined that the school could not function without a fully signalized intersection at Shirley Avenue in order to provide safe access to the site for all modes of transportation. Sudbury Student Services Consortium also advised that signalization is required in order to provide service.

Based on information provided by the Board, the majority of students will be bused given the large catchment area of the new school. A smaller proportion would walk or bike depending on the grade level. The Sudbury Student Services Consortium advised that only students in Grades 7 and 8 would be required to walk to school if they reside within walking distance based on their hazard criteria. The TIS recommends a raised pedestrian holding area on Shirley Avenue on the east side of MR80, as well as a paved pedestrian/bike path on the west side of MR80 (removed from the vehicular roadway) from the school driveway to Jeanne d'Arc Street, a distance of approximately 600 metres.

The Board submitted a summary of initiatives intended to encourage walking and cycling while also providing a safe environment for active modes of transportation (letter attached). Such actions include the following:

- Students are accompanied to the traffic signals by a staff member in order to facilitate crossing of the street;
- Crossing strategies are regularly shared with students who walk or bike to school;
- School Principals collaborate with the Greater Sudbury Police Service to provide educational sessions on various safety practices; and,
- There are regular communications with parents concerning the implementation and benefits of the initiatives.

Roads, Transportation & Innovation and Active Transportation staff have a number of concerns related to existing conditions and the location of the new school. Of particular concern is the provision of safe access to the site and the impact of signalization on the functioning of the Primary Arterial Road and the local road network. Staff met with CSCNO in order to obtain a better understanding of the extent and nature of their programming efforts related to active transportation.

As a result, Staff recommend that the installation of full signalization at MR80 and Shirley Avenue be required prior to the opening of the school, and that the costs of designing and installing full signals be borne by the owner. It is further recommended that a pedestrian/bike path be provided on the west side of MR80 as per the recommendations of the Traffic Impact Study. These matters can be addressed as part of the Site Plan Control Agreement.

Official Plan

The proposal presents conformity with the Official Plan based on the following policy considerations:

- The subject land is designated as Living Area 1, which permits local institutional uses such as elementary schools;
- There are no concerns related to land use compatibility, suitability of the lot, scale and siting of the proposed building, adequacy of parking and traffic generation;
- Development just outside the built boundary is not prohibited by the Official Plan;
- Field surveys determined that there is no habitat of endangered species and threatened species on the subject lands;
- There are no flooding hazards on the portion of the site proposed to be developed, as the flood plain is now contained within the channel of the Hope Municipal Drain; and,
- Access to the site is addressed by the installation of traffic signals, supplemented by the Board's programs to encourage active modes of transportation that are safe and accessible.

Provincial Policy Statement

The proposal aligns with the key policy requirements of the Provincial Policy Statement. The subject land is located in a designated growth area that is fully serviced and located on a major arterial road. Transit service is available on MR80 at Shirley Avenue. The proposed school will not be located on hazard lands, as the limits of the flood plain have been realigned based on improvements to the Hope Municipal Drain, which has been confirmed through a flood plain study.

The application is consistent with the 2020 Provincial Policy Statement.

Growth Plan for Northern Ontario

The proposal supports Greater Sudbury's designation as an Economic and Service Hub by expanding the range of educational facilities available within the community. The application conforms to the 2011 Growth Plan for Northern Ontario.

Conclusion:

Planning Services recommends that the application for rezoning be approved subject to the conditions outlined in the Resolution Section of this report.

Appendix 1

Departmental & Agency Comments

File: 751-7/20-4

RE: Application for Rezoning – Georgette Paquette
Part of PIN 73505-0340, Part of Part 2, Plan 53R-5645 in Lot 7, Concession 2, Township of Hanmer (Municipal Road 80, Val Therese)

Development Engineering

Municipal water and sanitary sewer are available on Municipal Road 80 at Shirley Avenue for this development. A water and sanitary sewer capacity analysis was performed and no deficiencies were found within the City's infrastructure system.

We have no objection to changing the zoning classification from "FD", Future Development to "I", Institutional and "OSP", Open Space Private. Review of water servicing, sanitary sewer servicing and stormwater management will occur through the Site Plan Control Agreement process.

Infrastructure Capital Planning Services

Municipal Road 80 (M.R. 80) is a Primary Arterial Road constructed with a five lane rural cross-section. The Average Annual Daily Traffic volume along this section is approximately 15,000 Vehicles and the posted speed limit on this section of MR 80 is 70 km/h.

Transportation & Innovation Services staff reviewed the Traffic Impact Study (TIS) submitted on December 10, 2019 by Tranplan. The TIS identified that approximately 297 new vehicle trips are expected to be generated during the morning peak hour, 240 vehicle trips during the afternoon peak hour and 302 vehicles trips during the end of the school day peak hour. The TIS indicates that traffic signals would not meet the provincial warrants as described in Book 12 of the Ontario Traffic Manual. The TIS indicates the proposed school cannot function without some form of traffic control and recommends the installation of full traffic signals.

While traffic signals would aid in the ability to access the proposed site, they will increase delays for all other traffic at the intersection. Typically, staff would not recommend the installation of traffic signals where the provincial warrants are not met. The TIS also identified that the installation of traffic signals at Shirley Avenue would likely attract non-local traffic from the area who do not currently use Shirley Avenue but wish to travel south on M.R. 80. Historically, when there is an increase of non-local traffic on residential roads, the City receives many concerns regarding the influx in vehicle traffic and the speed at which these vehicles are traveling. These concerns typically result in requests for traffic calming and additional police enforcement in the area.

The TIS identified the recommendations for active transportation improvement, including the installation of bike racks at the school property and a paved pedestrian/bike path on the west side of M.R. 80 from the school driveway to the southern limit of the property to encourage walking and biking to school. The implementation of school crossing guards is recommended in the TIS.

The presence of adults can help children safely cross the street at complex, hazardous or congested crossing locations whether with a School Crossing Guard employed by the municipality or with the use of an active transportation program operated by the school. They also remind drivers that pedestrians are present on the roadway. Section 176 (2) of the Highway Traffic Act (HTA) states that a School Crossing Guard can only be assigned if the posted speed limit is not in excess of 60 km/h in areas where no traffic signals exist.

On December 16, 2020, staff met with representatives of the Conseil scolaire catholique du Nouvel-Ontario (CSCNO) and the Sudbury Student Services Consortium to discuss the proposed site and the concerns as outlined above. At this meeting, representatives of the CSCNO provided an overview of the active transportation programs that have been implemented at École Jean-Paul II, which is located at the intersection of Municipal Road 15 at Marie Avenue and has a traffic signal installed. Some examples of the programs that have been implemented at École Jean-Paul II include having a staff member accompany students to the traffic light and collaborating with the Greater Sudbury Police Service to provide educational sessions to the students on cycling, walking and crossing intersections. The CSCNO is proposing to implement similar programs at the proposed school off of M.R. 80. As detailed in the attached memo dated January 19, 2021, a staff member will accompany students to ensure students cross M.R. 80 in a safe manner and the school will solicit volunteer parents to accompany students across M.R. 80.

Staff typically does not recommend the installation of traffic signals where they are not warranted to prevent negatively impacting the capacity of the road. At this proposed school site, the CSCNO has indicated that they will be implementing a series of measures to encourage students utilize methods of active transportation to travel to the school. Without the installation of traffic signals to enable people to cross the road, these programs cannot be successful.

With the understanding that the CSCNO will implement at a minimum the programs outlined in the memo dated January 19, 2021, staff recommends that if approval was given to the rezoning application, it be contingent on the installation of a full set of traffic signals at the intersection of M.R. 80 and Shirley Avenue prior to the opening of the school and that the cost for the design and installation of the traffic signals be fully funded by the CSCNO.

Sudbury Student Services Consortium

Sudbury Student Services Consortium strongly encourages the installation of traffic lights at this location, since without these lights, school buses would not be able to exit left at that intersection, which would increase school bus ride time for many students and would cause major delays in exiting the school bus loading area.

The Sudbury Student Services Consortium has specific hazard criteria for different age groups. At this location, with the installation of traffic lights, the only students who would require to walk/bike to school would be students in Grades 7 & 8. All other students who reside within the walking distance would qualify due to the hazard of crossing the multi-lane highway. This is the same at all other major roadways in the City of Greater Sudbury (for example, Falconbridge, Lasalle, Kingsway, Regent, Paris, etc.).

Building Services

Based on the information and site plan drawing provided, we can advise that Building Services has no concerns with this application and advised that the site is subject to Site Plan Control Agreement.

Conservation Sudbury

Conservation Sudbury staff has reviewed the above-noted application to amend By-law 2010-100Z being the City of Greater Sudbury Zoning By-law from "FD", Future Development to "I", Institutional and "OSP", Open Space Private in order to permit a new elementary school and day care centre. Lands with environmental constraints are proposed to be rezoned to "OSP", Open Space Private.

Staff has reviewed this application as per our delegated responsibility from the Province to represent provincial interests regarding natural hazards identified in Section 3.1 of the Provincial Policy Statement (PPS, 2020) and as a regulatory authority under Ontario Regulation 156/06. The application has also been reviewed through our role as a public body under the Planning Act as per our CA Board approved policies.

Site Characteristics and Context:

The subject parcel is west of Highway 69N in Val Therese and contains portions of the Hope Municipal Drain along its southern border. The attached mapping shows a flood plain associated with the Drain and a tributary watercourse that bisects the parcel.

Context:

Improvements have been made to the Hope Drain such that the limits of the hazard associated with the Drain are no longer reflective of the conditions on-site. The limit of the flood plain is contained within the banks of the Drain, per the letter dated May 28, 2008 from Mr. David Harsch, P.Eng. of K. Smart Associates Limited (attached). Further, the letter contains recommendations for development of the site, including a minimum setback of 45 metres from the top of the bank of the Hope Drain, and that all openings be constructed above 289.30m. Additionally, the watercourse that bisects the parcel has been realigned to the easterly limit of the subject parcel. The Hope Municipal Drain along the southern lot line and the tributary along the eastern lot line remain regulated features and therefore portions of the subject parcel are within areas regulated by Ontario Regulation 156/06.

Recommendation:

Conservation Sudbury does not oppose rezoning application 751-7/20-04 as works have been completed to reduce the limits of the Hope Municipal Drain to its banks and realign the tributary to the easterly lot line. The proponent is advised that works within an area regulated by Ontario Regulation 156/06 will require a permit pursuant to Section 28 of the Conservation Authorities Act. Works include, but are not limited to, alteration of a watercourse, grading, placement or removal of fill, and the erection of a building or structure. Any permit issued may include conditions of development.

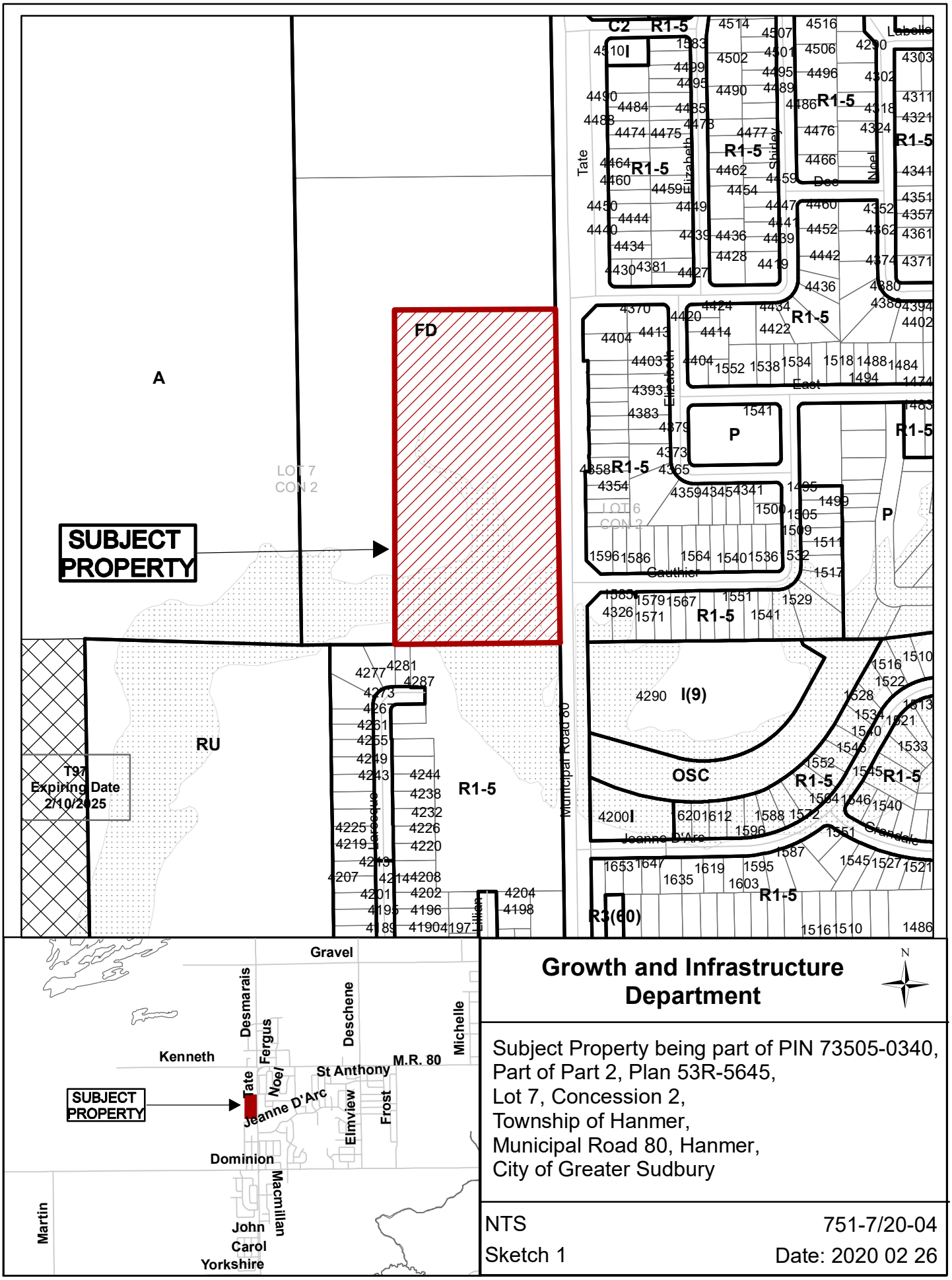
We respectfully request to receive a copy of the decision and notice of any appeals filed.

Environmental Planning Initiatives

The subject lands are defined as Part of PIN 73505-0340, Part of Part 2, 53R-5645 in Lot 7, Concession 2, Township of Hanmer (Municipal Road 80, Val Therese).

A screening-level assessment undertaken by City staff revealed that the subject lands might support up to three species that are protected under the Endangered Species Act: barn swallow, bobolink and eastern meadowlark.

The report titled "Ecological Site Assessment – Lot 7, Concession 2, Township of Hanmer, Val Therese, Ontario" (dated August 12, 2019), prepared by DST Consulting Engineers Inc., adequately demonstrates that the above-listed species and their habitat did not occur on the subject lands at the time of the survey (spring/summer 2019).

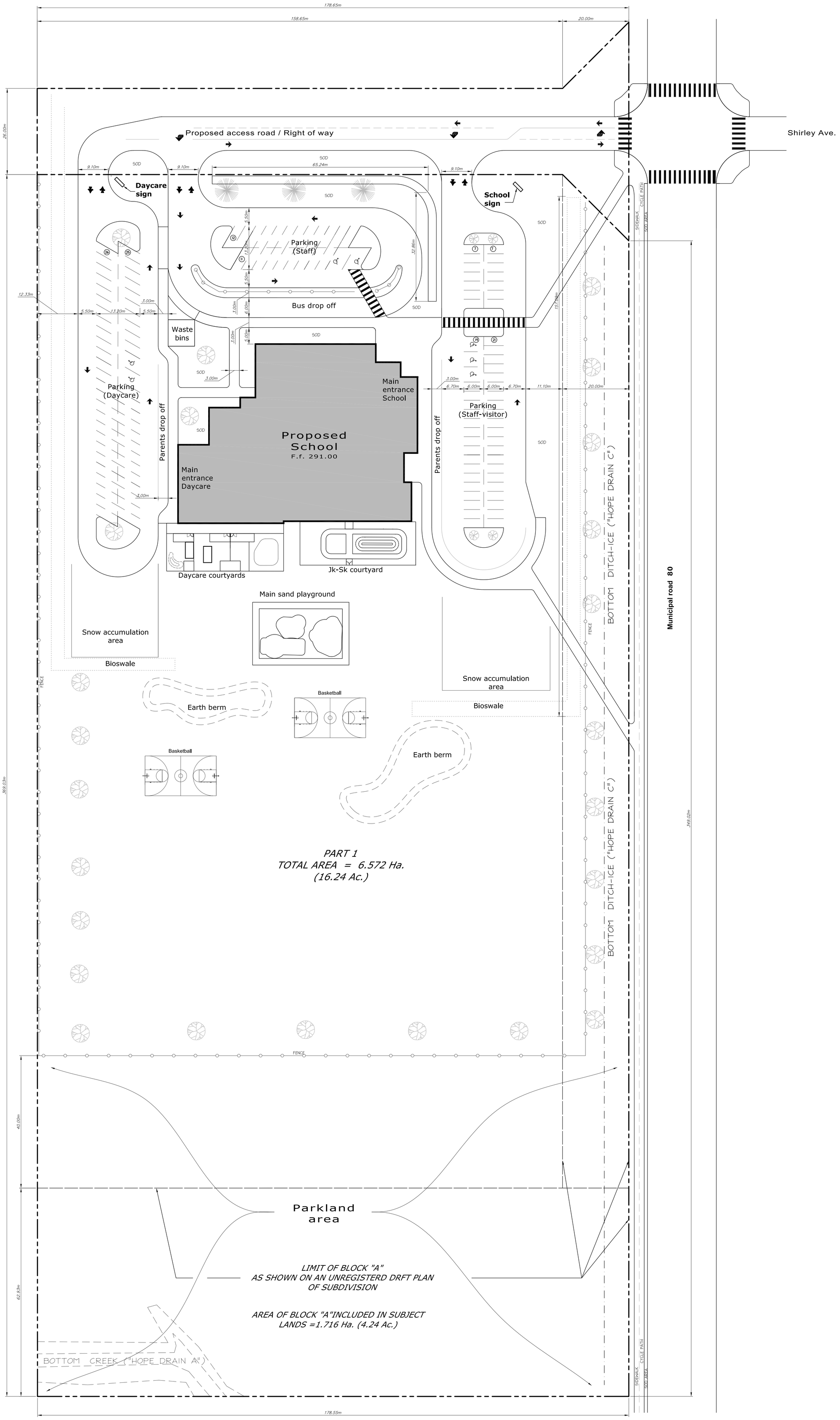


Growth and Infrastructure Department

Subject Property being part of PIN 73505-0340,
Part of Part 2, Plan 53R-5645,
Lot 7, Concession 2,
Township of Hanmer,
Municipal Road 80, Hanmer,
City of Greater Sudbury

NTS — 751-7/20-04

Sketch 1 — Date: 2020 02 26



Projet École Val-Thérèse

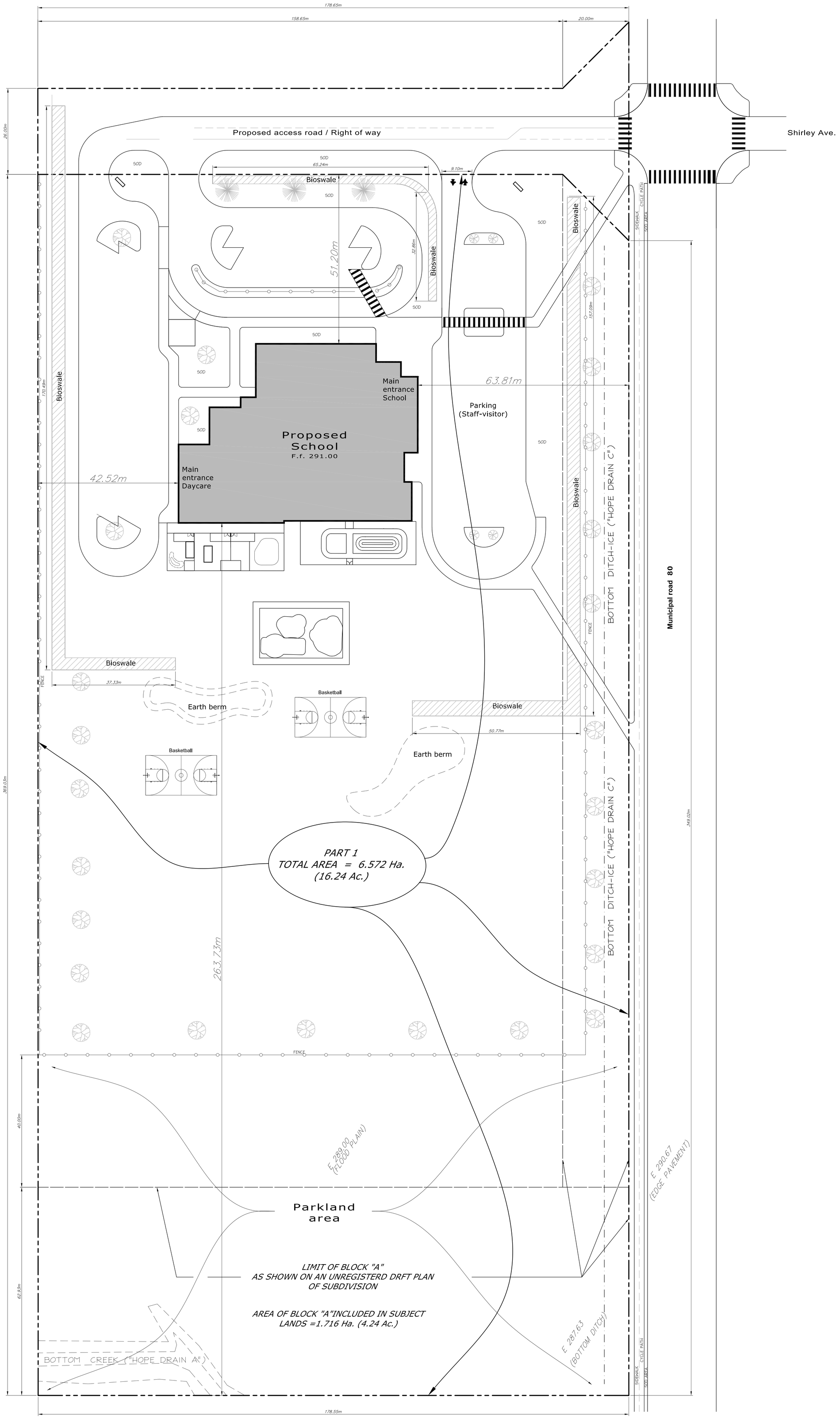
2019-08-10

CONSEIL SCOLAIRE CATHOLIQUE NOUVELON

Proposed site plan SP-01

Scale : 1:500

Printed : 2020-01-29



Projet École Val-Thérèse

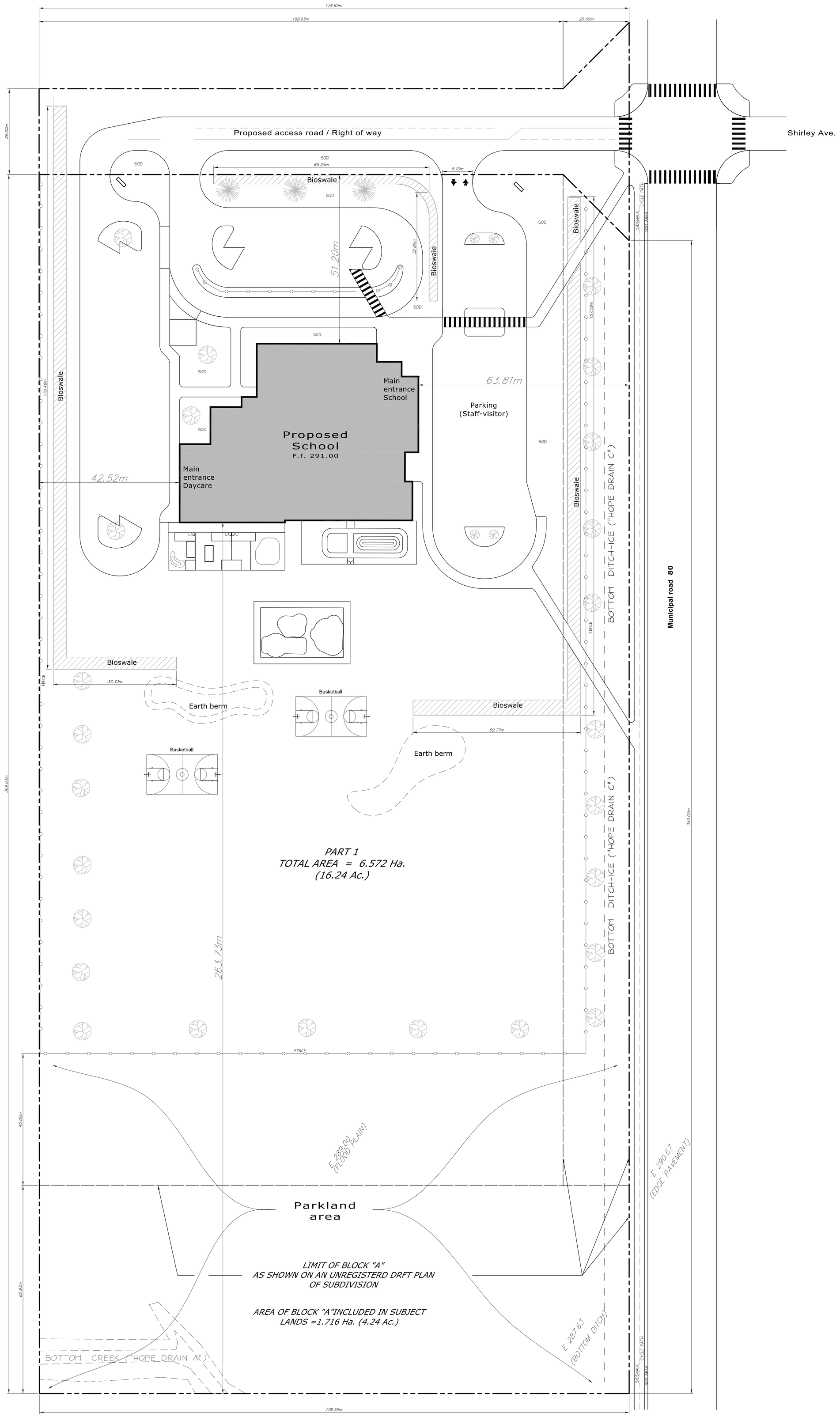
2019-08-10

CONSEIL SCOLAIRE CATHOLIQUE NOUVELON

Proposed Building Location Plan SP-03

Scale : 1:500

Printed : 2020-01-29



Projet École Val-Thérèse

2019-08-10

CONSEIL SCOLAIRE CATHOLIQUE NOUVELON

Proposed Building Location Plan SP-03

Scale : 1:500

Printed : 2020-01-29

SCHEDULE 'A'

SKETCH TO ILLUSTRATE LANDS SUBJECT TO SEVERANCE

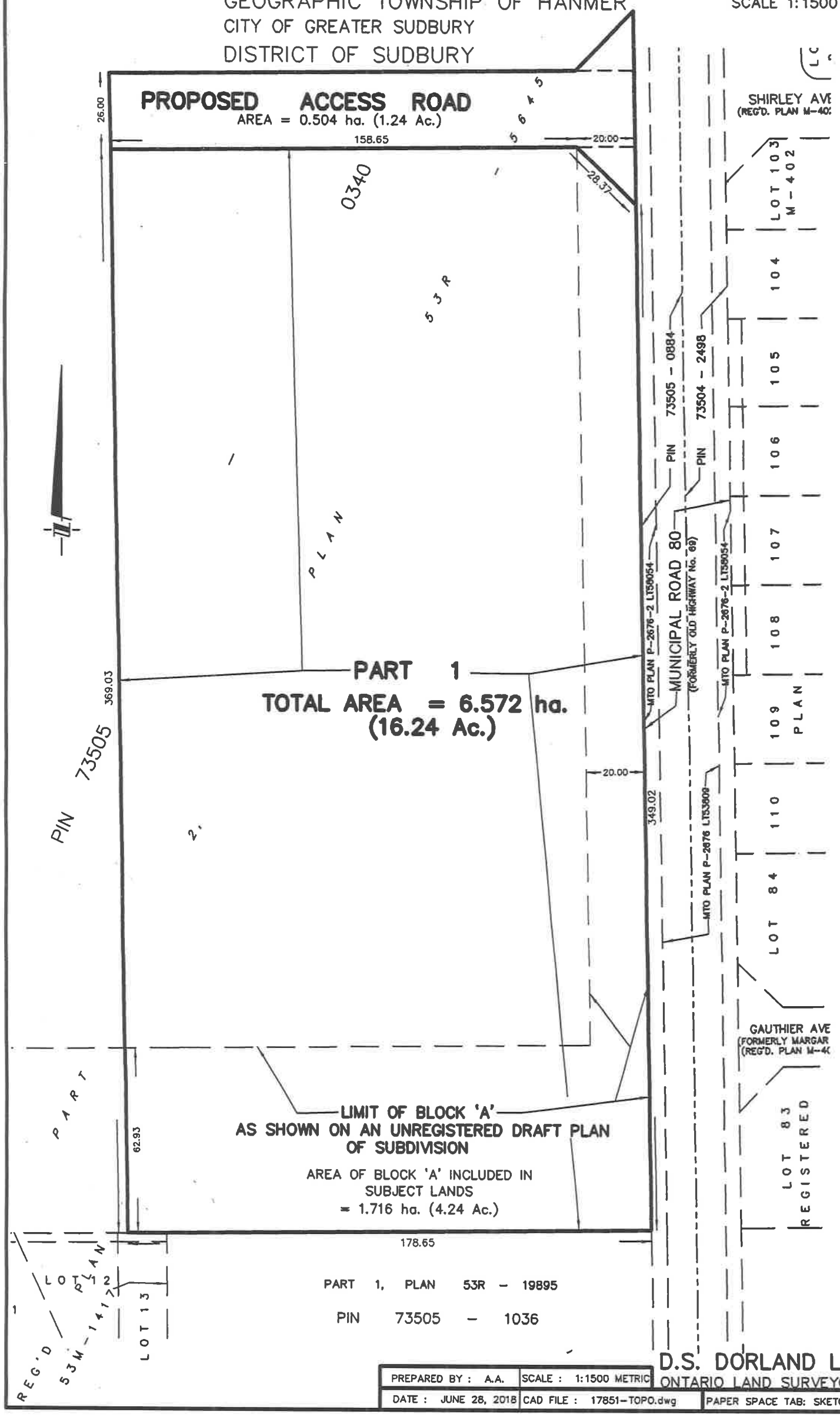
PART OF LOT 7, CONCESSION 2

GEOGRAPHIC TOWNSHIP OF HANMER

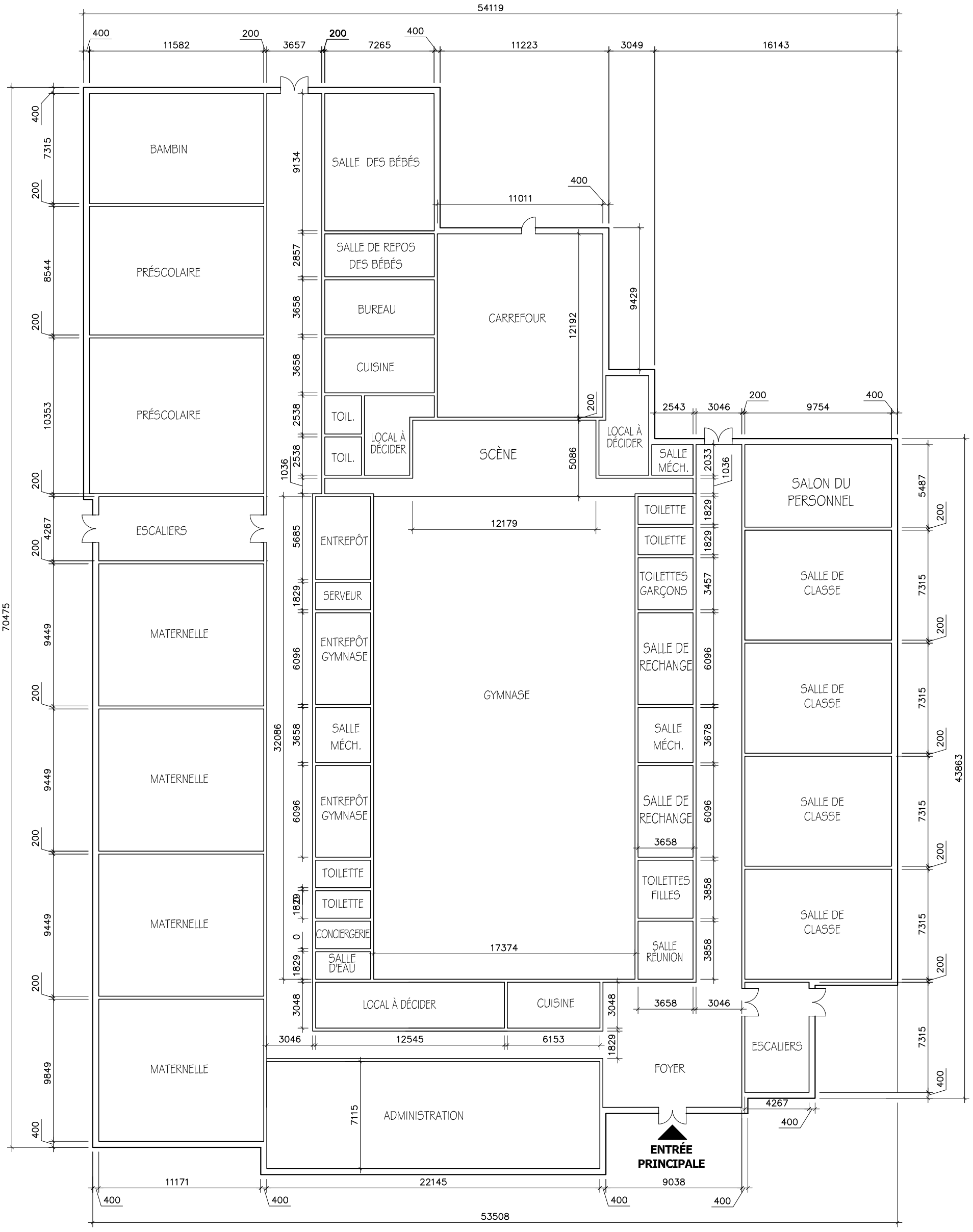
CITY OF GREATER SUDBURY

DISTRICT OF SUDBURY

SCALE 1:1500



PREPARED BY : A.A.	SCALE : 1:1500 METRIC	D.S. DORLAND LTD. ONTARIO LAND SURVEYORS
DATE : JUNE 28, 2018	CAD FILE : 17851-TOPO.dwg	PAPER SPACE TAB: SKETCH1500scale



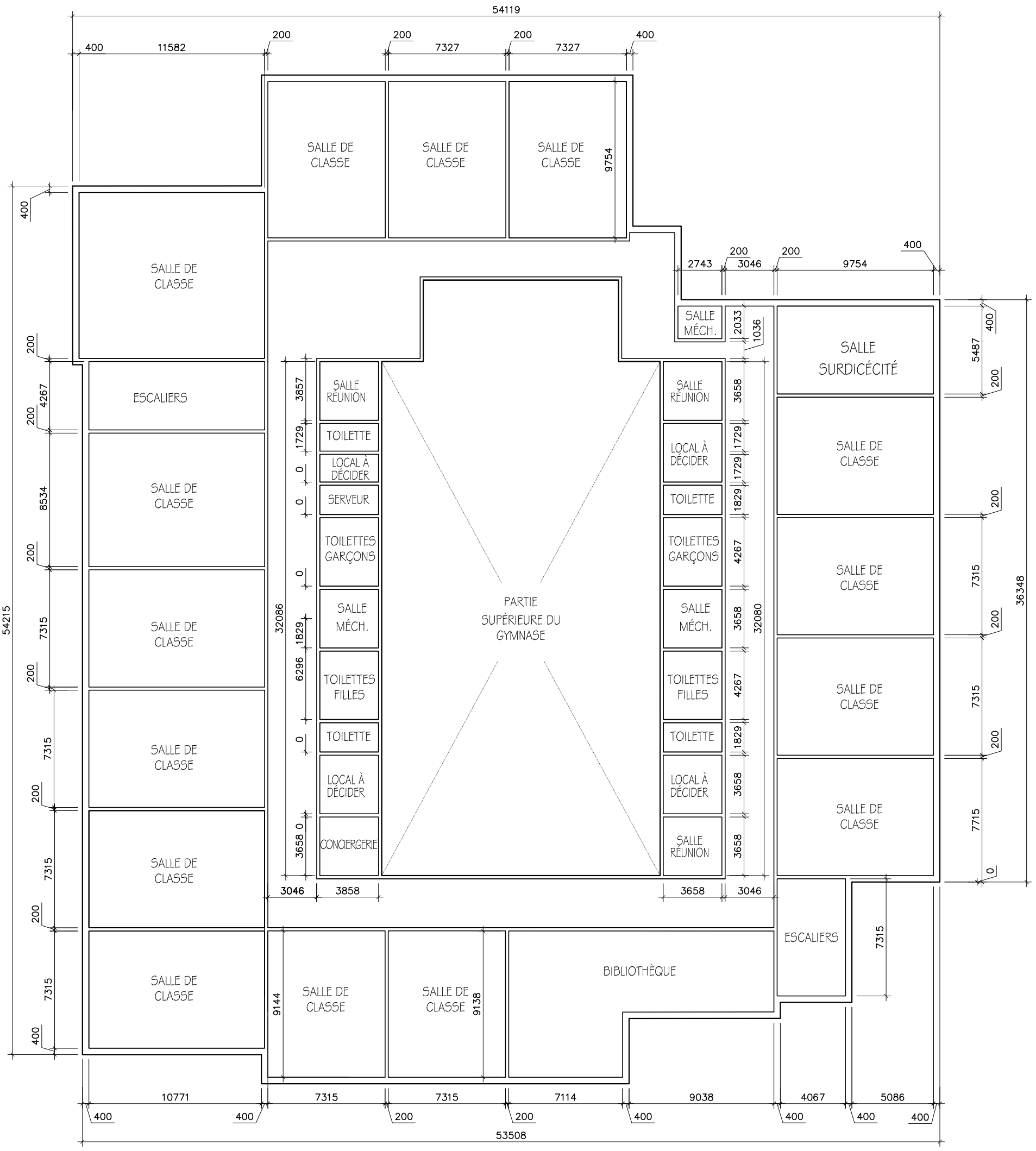
Projet École Val-Thérèse

2019-08-10

CONSEIL SCOLAIRE CATHOLIQUE NOUVELON

Plan du rez-de-chausée

Print 2019-12-12



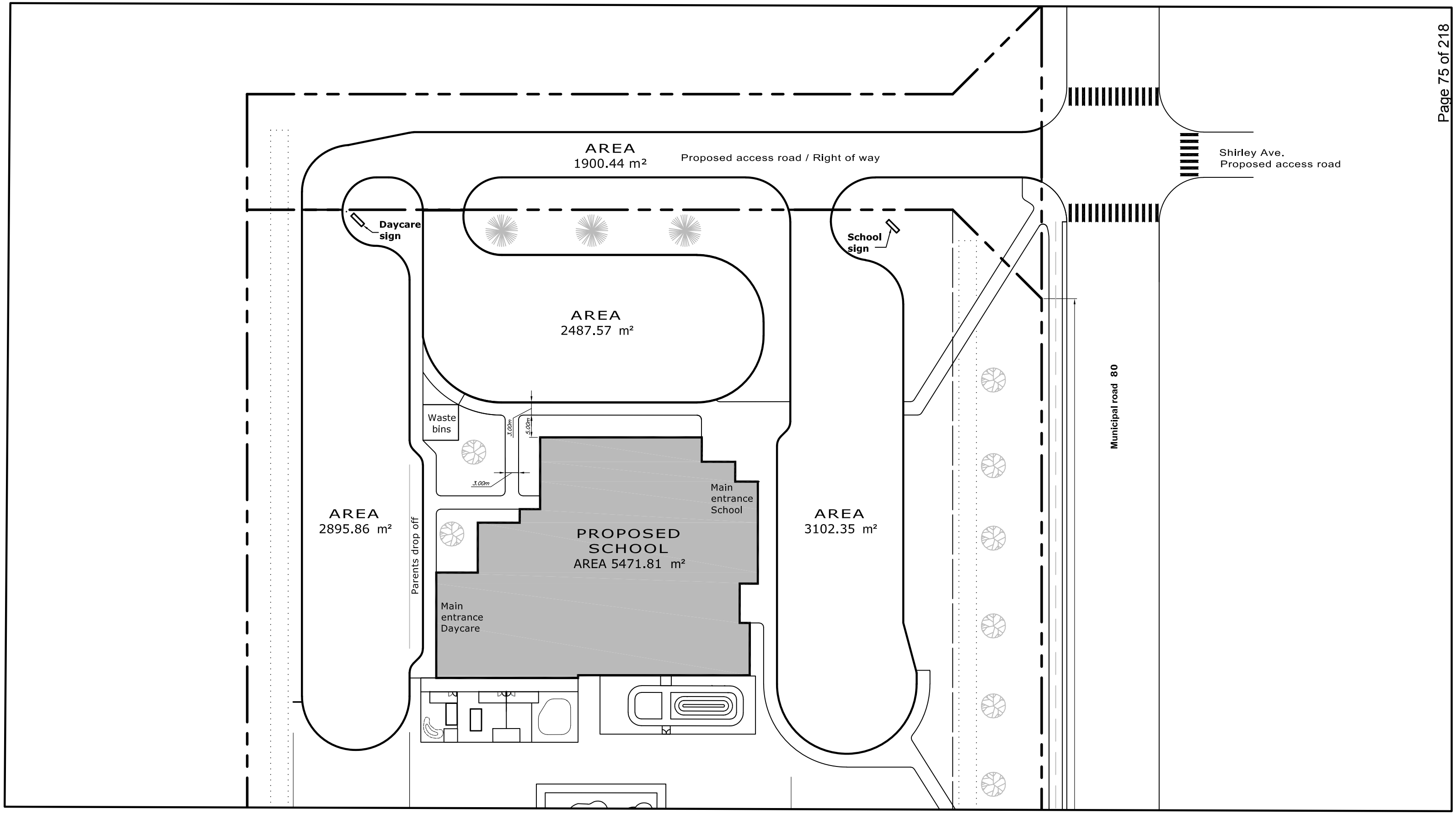
Projet École Val-Thérèse

2019-08-10

CONSEIL SCOLAIRE CATHOLIQUE NOUVELON

Plan du deuxième étage

Print 2019-12-12



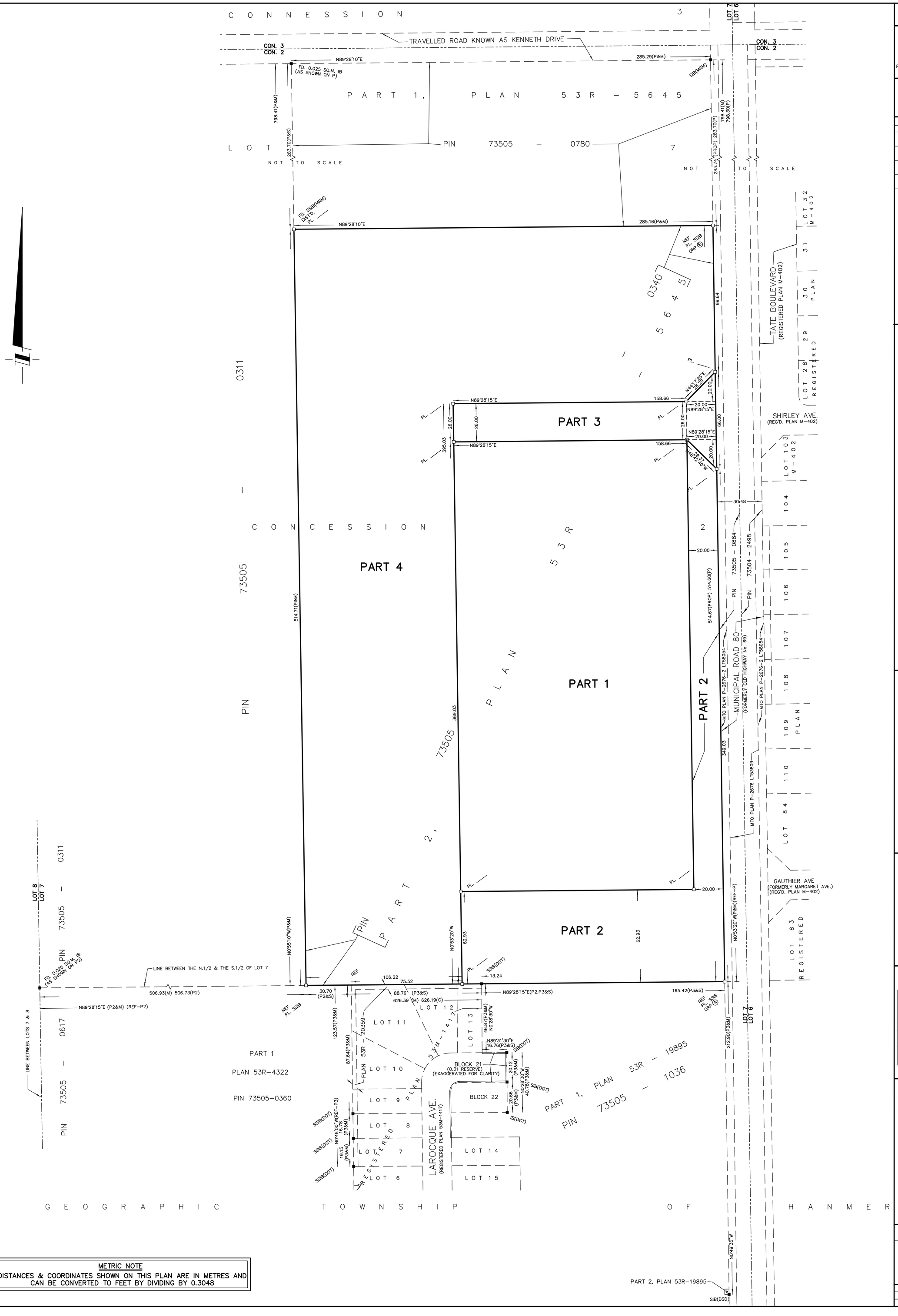
Projet École Val-Thérèse

2019-11-22

Printed: 2020-01-29

CONSEIL SCOLAIRE CATHOLIQUE NOUVELON

Plan du site
Areas



PLAN 53R–

RECEIVED AND DEPOSITED.

DATE : _____

REPRESENTATIVE FOR THE LAND REGISTRAR FOR THE LAND TITLES DIVISION OF SUDBURY, ONTARIO (No. 53)

I REQUIRE THIS PLAN TO BE DEPOSITED UNDER THE LAND TITLES ACT.

DATE _____ D.S. DORLAND, O.L.S.

PART	LOT/BLOCK	CON./PLAN	PIN	AREA
1	LOT 7	CON. 2	ALL OF PIN 73505–0340	XXX ha.
2				XXX ha.
3				0.504 ha.
4				7.592 ha.

PLAN OF SURVEY OF

PART OF LOT 7 CONCESSION 2

GEOGRAPHIC TOWNSHIP OF HANMER

CITY OF GREATER SUDBURY

DISTRICT OF SUDBURY

SCALE 1:1000

METERS 0 10 20 30 50 75

D.S. DORLAND LIMITED
ONTARIO LAND SURVEYORS

LEGEND

~	DENOTES NOT TO SCALE
■	DENOTES MONUMENT FOUND
□	DENOTES MONUMENT PLANTED
SIB	DENOTES STANDARD IRON BAR
SSIB	DENOTES SHORT STANDARD IRON BAR
SB	DENOTES SUBDIVISION BAR
IB	DENOTES IRON BAR
RB	DENOTES ROCK BAR
RPL	DENOTES ROCK PLUG
DIST'D	DENOTES DISTURBED MONUMENT
WIT	DENOTES WITNESS MONUMENT
OU	DENOTES ORIGIN UNKNOWN
PIN	DENOTES PROPERTY IDENTIFICATION NUMBER
LT	DENOTES LAND TITLES
FD.	DENOTES FOUND
PL.	DENOTES PLANTED
PROP	DENOTES PROPORTIONED
NEF	DENOTES NO EVIDENCE FOUND
REF	DENOTES ORIGIN OF BEARING ROTATION
M	DENOTES MEASURED
R	DENOTES REGISTERED
S	DENOTES SET
P	DENOTES PLAN 53R–5645
P2	DENOTES PLAN 53R–4322
P3	DENOTES REGISTERED PLAN 53M–1417
C	DENOTES CALCULATED FROM P2 & P3
DGT	DENOTES DAVID G. TULLOCH, O.L.S.
DSD	DENOTES D.S. DORLAND LIMITED, O.L.S.
MRM	DENOTES M.R. MAHER, O.L.S.

NOTE

ALL BEARINGS SHOWN HEREON ARE UTM GRID DERIVED FROM REAL TIME NETWORK OBSERVATIONS, REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 17 (81° WEST LONGITUDE), NAD 83 (CSRS) (VER.4/2002). REAL TIME NETWORK OBSERVATIONS HAVE BEEN CONFIRMED THROUGH VARIOUS MEASUREMENTS TO CITY OF GREATER SUDBURY CONTROL MONUMENTS IN THE AREA OF THE SURVEY.

FOR BEARING COMPARISONS, A ROTATION OF 0°00'10" CLOCKWISE WAS APPLIED TO ASTRONOMIC BEARINGS ON PLAN 53R–5645. A ROTATION OF 0°01'30" COUNTER–CLOCKWISE WAS APPLIED TO ASTRONOMIC BEARINGS ON PLAN 53R–4322. NO ROTATION WAS APPLIED TO THE GRID BEARINGS ON REGISTERED PLAN 53M–1417.

DISTANCES SHOWN HEREON ARE HORIZONTAL GROUND DISTANCES AND CAN BE CONVERTED TO GRID DISTANCES BY MULTIPLYING BY A COMBINED SCALE FACTOR OF 0.999565.

OBSERVED REFERENCE POINTS (ORPs) DERIVED FROM GPS OBSERVATIONS USING THE REAL TIME COORDINATES FROM PROVIDER (LEICA SMARTNET RTK SERVICE).

UTM ZONE 17, NAD 83 (CSRS) (VER. 4/2002)
URBAN ACCURACY PER SEC. 14 (2) OF O.REG. 216/10

POINT ID	NORTHING	EASTING
ORP A	5,165,759.26	499,344.08
ORP B	5,166,273.65	499,336.10

COORDINATES CANNOT, IN THEMSELVES, BE USED TO RE–ESTABLISH CORNERS OR BOUNDARIES SHOWN ON THIS PLAN.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

1) THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM.

2) THE SURVEY WAS COMPLETED ON THE th DAY OF , 2021.

SUDBURY, ONTARIO _____ D. S. DORLAND
ONTARIO LAND SURVEYOR

METRIC NOTE

DISTANCES & COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

D.S. DORLAND LIMITED
ONTARIO LAND SURVEYORS
GEOMATICS PROFESSIONALS

298 LARCH STREET
SUDBURY, ONTARIO, P3B 1M1
PHONE (705) 673–2556 FAX (705) 673–1051
WWW.DSDORLANDLIMITED.CA

PREPARED BY : A. ALATYPPO	SCALE : 1:1000 METRIC
CHECKED : CM	CAD FILE : 17851–TOPO.dwg
DATE : JANUARY 21 2021	P. SPACE TAB : R–PLAN 1000scale

Photo 1: Municipal Road 80, Val Therese
View of subject land from east side of MR80
File 751-7/20-4 Photography: June 30, 2020

Photo 2: Municipal Road 80, Val Therese
Hope Municipal Drain along easterly limit of subject abutting MR80
File 751-7/20-4 Photography: June 30, 2020

Photo 3: Municipal Road 80, Val Therese
Interior view of subject land showing existing site conditions
File 751-7/20-4 Photography: June 30, 2020

Photo 4: Municipal Road 80, Val Therese
View of Shirley Avenue and MR80 intersection facing west
File 751-7/20-4 Photography: June 30, 2020

Photo 5: Municipal Road 80, Val Therese
Adjacent low density housing on Tate Boulevard
File 751-7/20-4 Photography: June 30, 2020


File: 751-7/20-04, Municipal Road 80, Hanmer
2016 COOP Orthophotography
Subject Property
Ross Street
Tate Boulevard
Elizabeth Crescent
Shirley Avenue
Elizabeth Crescent
East Street
Gauthier Street
Municipal Road 80
Larocque Avenue
Lillian Street
Jeanne D'Arc Street
N
0
50
100
200
300
400
Metres

Ecological Site Assessment
Lot 7, Concession 2, Township of Hanmer
Val Therese, Ontario

August 12, 2019
FINAL REPORT
DST File No.: GV-SD-035900

Prepared for:
Le Conseil scolaire catholique du Nouvel-Ontario
201 Jogues Street
Sudbury, Ontario, P3C 5L7

Prepared by:
DST Consulting Engineers Inc., A Division of Englobe
885 Regent St., Suite 3-1B, Sudbury, Ontario, P7B 0A3
Tel.: (705) 523-6680 Fax: (888) 976-6772 E-mail: sudbury@dstgroup.com

Distribution:
Le Conseil scolaire catholique du Nouvel-Ontario…..……one electronic copy
DST Consulting Engineers Inc, A Division of Englobe Corp……..one electronic copy

EXECUTIVE SUMMARY

DST Consulting Engineers Inc., A Division of Englobe (DST) was retained by Yallowega Belanger Salach Architecture (YBSA), an agent acting on behalf of Le Conseil scolaire catholique du Nouvel-Ontario to complete an Ecological Site Assessment to assess the presence/absence of three avian species at risk (SAR) and their habitat at a property located on Lot 7, Concession 2, Township of Hanmer, in Val Therese, within the City of Greater Sudbury, Ontario (herein referred to as the 'Site').

The Site is a rectangular parcel of land that measures approximately 140 m east to west and 306 m north to south for a total area of approximately 4.2 hectares in size. The Site is bound by a municipal Right-of-Way (ROW) followed by Regional Road 80 (Highway 69 North) to the east, and vacant land to the south, west and north. The Site does not currently have an assigned municipal address. The majority of the land is covered in grass/sedge, with some forested areas located along the western boundaries of the Site.

The City of Greater Sudbury (CGS) provided a list of SAR to the YBSA that were provided by the Minstry of Natural Resources and Forestry (MNRF) to be surveyed within the area of the Site. Based on habitat requirements, the MNRF identified that the Site may be utilized by Barn Swallow (*Hirundo rustica*), Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*). DST completed field surveys on four occasions to confirm the potential absence or presence of SAR and SAR habitat of Barn Swallow, Eastern Meadowlark, and Bobolink. The overall objective of the Ecological Site Assessment was to determine the potential presence/absence of protected species and/or their habitat and to identify necessary mitigation measures prior to the proposed construction of a new school on the property.

Field surveys were conducted by a DST representative on June 12, 21, 22, and 29, 2019. The Site was observed to be predominately agricultural (hay) field consisting of grass, sedges, and forbs. Forested areas are present within the western portion of the Site, consisting of mostly Trembling Aspen, Black Spruce and Birch. No evidence of Barn Swallow, Eastern Meadowlark or Bobolink or their habitat was observed at the time of the field surveys.

Overall, there was no evidence of SAR listed as threatened or endangered under the Endangered Species Act (ESA) (2007) or their habitat identified at the Site. Therefore, as no significant impacts that would violate the regulations of the ESA are anticipated, at this time, an authorization will not be required for the proposed construction activities. If any SAR or SAR habitat features are encountered during the proposed activities, work in the area must cease and the Ministry of Environment, Conservation and Parks SAR Branch consulted as to how to proceed. Applicable regulatory requirements must be adhered to and mitigation measures implemented to avoid impacting the SAR.

Several avian species protected under the Migratory Bird Convention Act (1994) were seen or heard and may be nesting in the area. It is recommended that potentially destructive activities during key nesting periods, which is from approximately April 14 to August 28 on the subject

property be avoided, if possible. If work is completed during the breeding bird season, trees proposed for removal should be inspected by a qualified biologist to confirm the presence/absence of migratory birds or nests.

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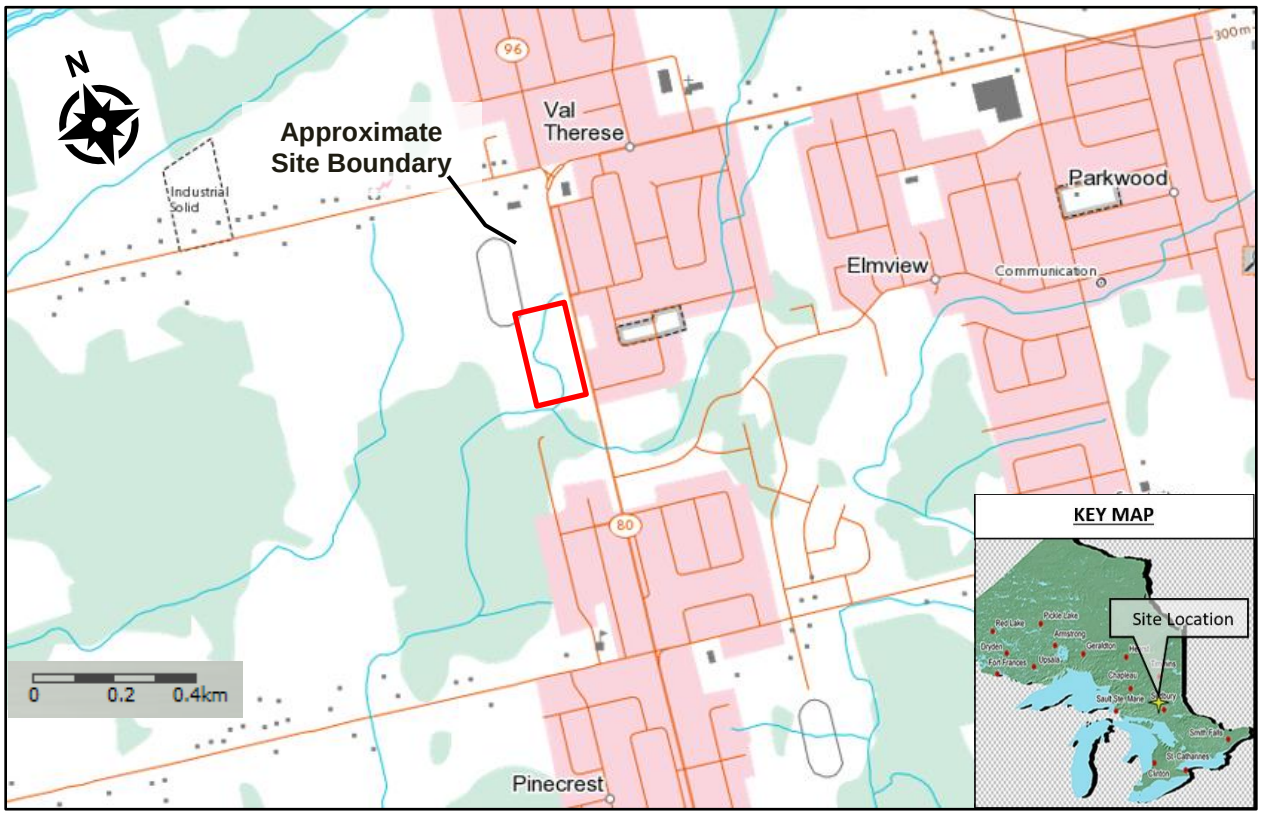
1 *INTRODUCTION*

DST Consulting Engineers Inc., A Division of Englobe (DST) was retained by Yallowega Belanger Salach Architecture (YBSA), an agent acting on behalf of Le Conseil scolaire catholique du Nouvel-Ontario (herein referred to as the 'Clients') to complete an Ecological Site Assessment to assess the presence/absence of three avian species at risk (SAR) and their habitat at a property located on Lot 7, Concession 2, Township of Hanmer, in Val Therese, within the City of Greater Sudbury, Ontario (herein referred to as the 'Site'). The location of the Site is illustrated below in Figure 1. The Ecological Site Assessment survey was completed as a due diligence to support the proposed construction of a new school on the subject lands.

Figure 1 - Site Location



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1.1 Area of Investigation

The Site is a rectangular parcel of land that measures approximately 140 m east to west and 306 m north to south for a total area of approximately 4.2 hectares in size. The Site is bound by a municipal right-of-way (ROW) followed by Regional Road 80 (Highway 69 North) to the east, and vacant land to the south, west and north. The Site does not currently have an assigned municipal address. The majority of the land is covered in grass/sedge, with some forested areas located along the western boundaries of the Site.

The topography of the Site is of low topographic relief, and generally flat throughout. The ground surface elevation is approximately 290 m above mean sea level (m asl). The Site is situated in the Georgian Bay Ecoregion (Ecoregion 5E) in the heart of the Great Lakes- St. Lawrence Forest Region (Rowe, 1972).

1.2 Scope of Work

The scope of work for the Ecological Site Assessment included the completion of the following items:

- Complete field surveys to confirm the presence or absence of three avian SAR and their habitat including Barn Swallow (*Hirundo rustica*), Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) in accordance with Ontario Ministry of Natural Resources and Forestry (MNRF) survey protocols, where applicable, or applicable best practises where those protocols are not defined;
- Prepare an Ecological Site Assessment report detailing the results of the survey findings, mitigation measures and requirements under the *Endangered Species Act, 2007, S.O c.6* (ESA 2007), where applicable, for target SAR identified.

1.3 Field Survey Objective

Wildlife designated as threatened or endangered under Ontario Regulation 230/08 (O. Reg 230/08 – *Species at Risk in Ontario List*) under the ESA 2007 receive both species (Section 9) and habitat (Section 10) protection. As such, if any of the three target-species are identified, an Ecological Impact Study (EIS) would be required. The overall objective of the Ecological Site Assessment detailed herein was to determine the presence or absence of Barn Swallow, Bobolink and Eastern Meadowlark and their habitat, and to identify whether an EIS is required prior to the proposed construction activities.

2 BACKGROUND

2.1 Consultation and Pre-Survey Data Search

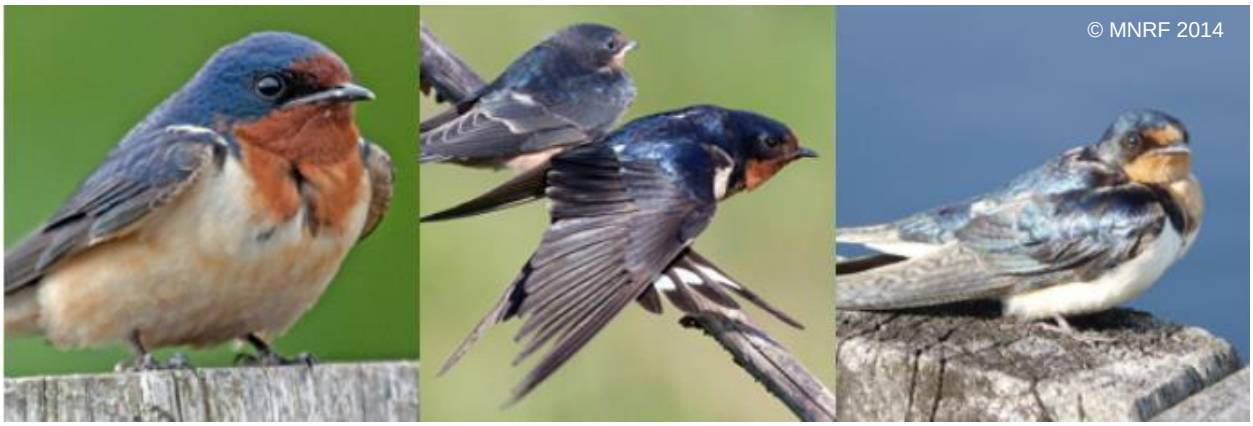
The City of Greater Sudbury (CGS) provided a list of SAR to the Client that were provided by the MNRF to be surveyed within the area of the Site. DST also reviewed SAR occurrence records on the MNRF Natural History Information Center (NHIC) website (MNRF, 2014) for the subject property, however, no recorded occurrences of SAR were identified within the 1-km square that the Site falls within.

Based on habitat requirements, the MNRF identified that the Site may be utilized by Barn Swallow, Bobolink and Eastern Meadowlark. The description of each specie is presented in Section 2.2. Field surveys were subsequently completed to identify the presence or absence of these species and their habitat, as detailed further in Section 3.0.

2.2 Species Life History

2.2.1 Barn Swallows

The Barn Swallow is a medium-sized bird that is currently listed as threatened under Ontario's ESA (2007). The Barn Swallow can be identified by its forked tail, blue upper plumage and copper underside (see Photograph 1 below). Barn Swallows are found throughout Ontario wherever suitable nesting conditions exist and are closely associated with rural settlements. They are known to build cup-shaped nests from mud pellets on artificial structures including barns, bridges, houses and culverts, typically on a beam or against a suitable vertical projection. Nests are constructed by both sexes, although more often by the female, and birds may nest colonially where sufficient high-quality nest sites are available (COSEWIC, 2011).



Photograph 1 – Barn Swallow Physical Appearance

Barn swallows typically select nesting and foraging sites close to open habitats such as farmlands of various description, wetlands, road rights-of-way, large forest clearings, cottage areas, islands, sand dunes, and subarctic tundra. They require wet sites that have a source of nearby mud

(COSEWIC, 2011). Most foraging takes place within a few hundred metres from the colony and usually within 500 m (COSEWIC, 2011).

Barn Swallows have experienced significant declines since the mid 1980s, and according to the MNRF (2014), the number of Barn Swallows in Ontario decreased by 65 % between 1966 and 2009. The decline in Barn Swallow population have been attributed to losses in the number of available nest sites, such as barns, and in the amount of foraging habitat in open agricultural areas (MNRF, 2014).

2.2.2 Bobolink

The Bobolink is a medium-sized passerine that is currently listed as threatened under Ontario's ESA (2007). In the breeding season, males are black on their underside with a white rump and creamy nape (see Photograph 2 below), while female are yellow-brown with fine streaking on breast sides and stripes on head. Bobolink can be found primarily in forage crops such as hayfields and pastures, and also occur in grassland habitats such as wet prairie, graminoid peatlands and abandoned fields dominated by tall grasses, remnants of uncultivated virgin prairie, no-till cropland, and small-grain fields (COSEWIC, 2010). It is generally not abundant in short-grass prairie, alfalfa fields, or in row crop monocultures (COSEWIC, 2010). They often build their small nests on the ground in dense grasses. Bobolink abundance and density are positively associated with a moderate litter depth, high lateral litter cover, high grass-to-legume ratios, an abundance of small shrubs as perches, and a high percent of forb cover (COSEWIC, 2010).

In the breeding season, male Bobolinks are conspicuous and vocal, while nesting females can go undetected early in the nesting cycle. Males can be found perched on shrubs, tall forbs, and fence posts, and often seen performing their characteristic aerial display flights. Bobolink nests are built on the ground, usually at the base of tall forbs (McCracken, 2013).

Photograph 2 – Male bobolink physical appearance in breeding season

Bobolink can be found throughout most of Ontario south of the boreal forest, however populations have declined over the past half century (MNRF, 2014). Along migration routes and in wintering areas, Bobolink are considered a pest of grain crops, and mowing hay during the breeding period

may inadvertently kill and disturb nesting adults and young birds, as well as eggs and nests (MNRF, 2014). In addition, the quality of their nesting habitat has likely declined over time due to modern hay production practices (MRNF, 2014).

2.2.3 Eastern Meadowlark

The Eastern Meadowlark is a medium sized songbird that is currently listed as threatened under Ontario's ESA (2007). Adults have a brown back, a bright yellow throat and belly with a large black "V" pattern in the middle of the chest (see Photograph 3 below). The breeding range of the Eastern Meadowlark in Ontario extends from the southwestern part of the province continuously north to include southern Algoma, Sudbury and Nipissing districts (COSEWIC, 2011). It prefers grassland habitats, including native prairies and savannahs, as well as non-native pastures, hayfields, weedy meadows, herbaceous fencerows and airfields (COSEWIC, 2011). In hayfields, it prefers older sites due to the availability of short, sparse, patchy stands of grass-dominated vegetation (COSEWIC, 2011). Nests of Eastern Meadowlark are built on the ground, are well concealed in the vegetation, and consists of a grass cup covered by grass woven from the surrounding vegetation (COSEWIC, 2011).

Photograph 3 – Eastern Meadowlark physical appearance

Eastern Meadowlark numbers are shrinking due to changes in land use and the loss of habitat that has resulted from development, changes in farming practices, over-grazing of pasturelands by livestock, grassland fragmentation, reforestation and use of pesticides (MNRF, 2014). In Ontario, the number of Eastern Meadowlarks has decreased by almost 65% during the past 40 years (MNRF, 2014).

3 *METHODOLOGY*

DST completed field surveys for Barn Swallows, Bobolink and Eastern Meadowlark. Surveys for Bobolink and Eastern Meadowlark were completed in accordance with the MNRF survey protocols provided by the Sudbury district MNRF (MNRF 2011 and MNRF, 2013). As there is no formalized field protocol for Barn Swallows, DST developed a protocol that identifies signs of use of Barn Swallows. Survey methodologies are described in the following table.

Table 1: Habitat Description and Survey Methodology

Species	Habitat Description	Survey Methodology
Bobolink	Bobolink can be found primarily in forage crops such as hayfields and pastures, and also occur in grassland habitats such as wet prairie, graminoid peatlands and abandoned field dominated by tall grasses, remnants of uncultivated virgin prairie, no-till cropland, and small-grain fields. It is generally not abundant in short-grass prairie, alfalfa fields, or in row crop monocultures (COSEWIC, 2010).	Surveys for Bobolink were completed according to the protocol provided by the Sudbury District MNRF (2011). Three surveys were conducted at least one week apart. Parallel transects and point count stations were established across the Site at approximately 250 m intervals. Observations including visual and auditory were recorded for a ten-minute period at each point count station.
Eastern Meadowlark	Eastern Meadowlark prefers grassland habitats, including native prairies and savannahs, as well as non-native pastures, hayfields, weedy meadows, herbaceous fencerows and airfields. In hayfields, it prefers older sites due to the availability of short, sparse, patchy stands of grass-dominated vegetation (COSEWIC, 2011).	Surveys for Eastern Meadowlark were completed according to the protocol provided by the Sudbury District MNRF (2013). Three surveys were conducted at least one week apart. Point count locations and transect routes were established throughout the Site, with a minimum of one-point count established per 5 hectares of suitable habitat.
Barn Swallow	Barn Swallows build cup-shaped nests from mud pellets in man-made structures, typically on a beam or against a suitable vertical projection. Barn swallows are known to nest in old barns, under briges, and culverts, and will re-use nests from year to year displaying nest fidelity. Barn swallows typically select nesting and foraging sites close to open habitats such as farmlands of various description, wetlands, road rights-of-way, large forest clearings, cottage areas, islands, sand dunes, and subarctic tundra. They require wet sites that have a source of nearby mud. Most foraging takes place within a few hundred metres from the colony and usually within 500 m (COSEWIC, 2011).	To determine if Barn Swallows were utilizing the Site, a DST representative inspected the Site for signs of previous nesting by Barn Swallows (i.e. old nests, nest scars, droppings, etc.) and/or foraging behaviour. Field surveys were conducted on two occasions (no less than 10 days apart) during the peak breeding period to identify active nests, listen for calling Barn Swallows and to observe for foraging and nesting activity. Binoculars were used to observe from a distance to determine the presence of Barn Swallows circling and/or defending territories, the number of nests, and the status of the nest.

Six (6) pre-determined point-count locations were surveyed during each visit (Figure 2). Surveys were undertaken in the early morning during favourable weather, using a point count method where any birds that were heard or seen in the vicinity of the survey location were recorded. These surveys addressed requirements for Bobolink and Eastern Meadowlark.

Figure 2 - Site Plan

© Google Earth

In addition to the surveys for the above-noted species, all incidental observations of other species present were additionally recorded (i.e. avifauna and small mammals) during Site visits and additional effort was made to locate nests of migratory birds.

4 RESULTS

4.1 Field Survey

The Site is located east of Regional Road 80 (a.k.a. Old Highway 69), with residences located to the east and south, and fields and/or forested land located north and west of the Site. The Site is predominately an agricultural (hay) field with forested areas in the northwestern, central western and southwestern portion of the Site. Based on topographic mapping of the Site, there is a stream running through the central portion of the Site, however, the stream was dry at the time of the field surveys. Several recreational vehicle tracks were also noted throughout the Site, particularly in the eastern portion.

The forested areas consisted primarily of Trembling Aspen (*Populus tremuloides*), Black Spruce (*Picea mariana*), and Birch species (*Betula spp.*) among small shrubs such as honeysuckle (*Lonicera spp*.). The vegetation within the field consisted of several species of sedges (C*yperaceae spp.*), grasses such as Bare Indian Grass (*Sorghastrum nutans*), and forbs such as Common Daisy (*Bellis perennis*), Alsike clovers (*Trifolium hybridum*) and Common Dandelion (*Taraxacum).* The height of grass/sedges within the field ranged from approximately 10 cm in the eastern portion of the Site, to approximately 80 cm in small patches in the western portion of the Site, however, most of the field was approximately 10-40 cm throughout the month of June.

A DST representative completed field surveys on June 12, 21, 22, and 29, 2019. The field survey completed on June 22, 2019 was to ensure there was at least 10 days from the initial survey for Barn Swallows, to space surveys in order to effectively capture any potential Barn Swallow activity occurring on Site. Photographs from the field activities are provided in Appendix A. Weather conditions during each of the field surveys are summarized in the table below.

Table 2: Field Survey Weather Conditions

Visit #	**1**	**2**	**3**	**4**
Date	June 12, 2019	June 21, 2019	June 22, 2019	June 29, 2019
Time on-Site	6:10 am	6:10 am	6:00 am	6:30 am
Weather Conditions	Partly Cloudy	Overcast	Sunny	Sunny
Air Temperature (ºC)	7	11	12	15
Precipitation	None	None	None	None
Cloud Cover (%)	75	50	10	0
Wind Speed (Beaufort Scale)	1	1	0	0

No Barn Swallows, Eastern Meadowlark or Bobolink were observed or heard during any of the field surveys, although the agricultural field appeared to provide suitable habitat to these species.

No mammal species were observed during the field surveys. Avian species seen or heard during the field survey included: Black-capped Chickadee (*Poecile atricapillus*), American Robin (*Turdus*

migratorius), Blue Jay (*Cyanocitta cristata*), American Crow (*Corvus brachyrhynchos*), Common Yellowthroat (*Geothlypis trichas*), Savannah Sparrow (*Passerculus sandwichensis*), Song Sparrow *(Melospiza melodia*) and White-throated Sparrow (*Zonotrichia albicollis*).

4.2 Areas Subject to Protection & Proposed Mitigation Measures

According to the NHIC map, the Site is not considered an Area of Natural Heritage and Scientific Interest (ANSI) and there are no Conservation Reserves, Provincial Parks or Natural Heritage Systems (NHS) within the subject property. In addition, no SAR or SAR habitat was identified on the Site, therefore, no mitigation measures are required.

As no Barn Swallow, Bobolink, or Eastern Meadowlark were identified during the Ecological Site Assessment, an EIS is not required prior to the proposed construction activities.

5 *ASSESSMENT*

5.1 Constraints on Survey Information

The assessment was completed by a DST representative with experience conducting SAR habitat surveys in northeastern Ontario. The DST representative had full access to the Site. Overall, no constraints on the survey information are expected to have occurred that will materially affect the conclusions and recommendations of this report.

5.2 Constraints on Equipment Used

The equipment used during the field survey was limited to a pair of binoculars (Bushnell 10 x 42) and a handheld GPS. The equipment used was in good condition and allowed the surveyor to increase the accuracy of the observations made during the assessment. Overall, no constraints on equipment are expected to have occurred that will materially affect the conclusions and recommendations of this report.

5.3 Potential Impacts of Development

At the time of the field survey, there was no evidence to suggest that Barn Swallows, Eastern Meadowlark, and Bobolink were actively utilizing the Site for foraging, nesting, roosting or migration. As such, negative impacts on these species are not expected. If a Barn Swallow, Eastern Meadowlark, or Bobolink are encountered during construction activities, all work in the area must cease and the MECP SAR branch consulted as to how to proceed.

Numerous bird species protected under the Migratory Bird Convention Act, 1994 (MBCA 1994) were seen or heard during the field survey. As such, there is the potential to impact the nesting or roosting sites of these species, particularly in areas where tree removal will occur. Mitigation measures for the protection of migratory birds and their nests are provided in Section 6.1.

5.4 Legislation and Policy Guidance

No SAR related regulatory requirements or authorization under the Ontario Endangered Species Act are required, at this time. If any SAR or SAR habitat features are observed during the construction process, work in the area must immediately cease and measures must be taken to avoid negatively impacting SAR. The MECP must be contacted for guidance on how to proceed prior to recommencing work.

6 *RECOMMENDATIONS*

6.1 Mitigation Measures

If any Barn Swallow, Bobolink, or Eastern Meadowlark or their habitat are observed during construction activities, work in the area must immediately cease and the MECP SAR Branch consulted as to how to proceed. Applicable regulatory requirements must be adhered to and mitigation measures implicated to avoid impacting the SAR.

The incidental taking of nests and eggs is governed by Migratory Birds Regulations (MBR) under subsection 6(a), which prohibits the disturbance, destruction or taking of nests and eggs under the Migratory Bird Convention Act, 1994 (MBCA,1994). The MBR recommends avoiding potentially destructive activities during key nesting periods, which is from approximately April 14 to August 28 in the area of the Site (Environment Canada and Climate Change, 2017). Tree removal, if required, should take place outside of the breeding bird season, if possible. If work is completed during the breeding bird season, trees proposed for removal should be inspected by a qualified biologist to confirm the presence/absence of migratory birds or nests. Tree protection should additionally be undertaken, when necessary, to avoid damaging adjacent trees. If any active nests are located during construction, work around the area must cease and a qualified biologist consulted to determine a buffer zone appropriate to the species. A buffer around the nest should be established, and work inside the buffer avoided until the young have fledged and left the area.

6.2 Permitting

No evidence of SAR listed as threatened or endangered under the ESA (2007) or their habitat was identified at the Site. As such, no significant impacts that would violate the regulations of the Ontario ESA are anticipated. At this time, an authorization under the ESA (2007) will not be required for the proposed construction activities.

7 CLOSURE

We trust this report meets your present requirements and appreciate this opportunity to provide environmental services to you. If you have any questions or comments, please contact the undersigned.

Written by:

Jennifer Rainville, EPt
Environmental Technician

Reviewed by:

David Vardy, Ph.D
Senior Biologist

Jeanette McIntyre
Environmental Specialist

8 *LIMITATIONS OF REPORT*

The information, conclusions and recommendations given herein are specifically for this project and this Client only, and for the scope of work described herein. It may not be sufficient for other uses. DST does not accept responsibility for use by third parties.

The data, conclusions and recommendations which are presented in this report, and the quality thereof, are based on a scope of work authorized by the Client. Note, however, that no scope of work, no matter how exhaustive, can identify all ecological and/or environmental conditions. This report therefore cannot warranty that all conditions on or off the site are represented by those identified at specific locations.

Any recommendations and conclusions provided that are based on conditions or assumptions reported herein will inherently include any uncertainty associated with those conditions or assumptions. In fact many aspects involving professional judgment contain a degree of uncertainty which cannot be eliminated. This uncertainty should be managed by periodic review and refinement as additional information becomes available.

Note also that standards, guidelines, methodologies and practices related to environmental investigations may change with time. Those which were applied at the time of this investigation may be obsolete or unacceptable at a later date.

Any topographic benchmarks and elevations documented in this report are primarily to establish relative elevation differences between study locations and should not be used for other purposes such as grading, excavation, planning, development, etc.

Any comments given in this report on potential environmental conditions/site ecology are intended only for the guidance of the Client. The scope of work may not be sufficient to determine all of the environmental factors at each site. Contractors bidding on this project should, therefore, make their own interpretation of the factual information presented and draw their own conclusions as to how the conditions may affect their work.

Any results from an analytical laboratory, federal or provincial government agencies, other subcontractors, or any other third party, reported herein have been carried out by others, and DST cannot warranty their accuracy. Similarly, DST cannot warranty the accuracy of information supplied by the Client.

9 *REFERENCES*

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Appendix A

Photographs

(June 12, 2019)

Photograph 1: View of Site, facing south-southwest.

Photograph 2: View of forest in northwestern portion of Site, facing east.

Photograph 3: View of forested area in southwestern portion of Site, facing southwest.

Photograph 4: View of field, facing north-northeast.

Photograph 5: View of field, facing north-northeast.

Photograph 6: View of forested area in central-western portion of Site, facing southeast.

Proposed
New Elementary School
Municipal Road 80
Val Therese

Traffic Impact Study

Prepared by:
Tranplan Associates
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Prepared for:
Conseil scolaire catholique du Nouvel-Ontario
November 2019

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December 2, 2019

Guy Guillot
Responsable des projets de construction
Conseil scolaire catholique du Nouvel-Ontario
201 rue Jogues
Sudbury, ON P2C 5L7

Dear Mr. Guillot:

Subject: Proposed New Elementary School
MR 80, Val Therese
Traffic Impact Study Final Report

We are pleased to submit our final Traffic Impact Study report dealing with your proposed new elementary school and day care centre on MR 80 in Val Therese. The school replaces three existing elementary schools in the Val Therese/Hanmer area.

While our technical analysis has shown that according to current Ontario (MTO) standards traffic signals are not warranted at the school entrance, it is our opinion that the school cannot function safely at this site without traffic signals. If the school is to be located at this site, we recommend full traffic signals on MR 80 to serve the school and Shirley Avenue.

The report also contains several recommendations implementing the City's policies on Active Transportation, including infrastructure improvements to encourage/facilitate walking, biking, transit and ridesharing.

It has been a pleasure assisting you with this project.

Yours truly,

Toivo Rukholm, P.Eng.
Tranplan Associates

REGISTERED PROFESSIONAL ENGINEER
T. RUKHOLM
PROVINCE OF ONTARIO

CONTENTS

APPENDICES

EXHIBITS

TABLES

1.0 INTRODUCTION AND BACKGROUND

Tranplan Associates ("Tranplan") is pleased to present the results of a traffic impact study dealing with the proposed new Conseil scolaire catholique du Nouvel-Ontario ("CSCNO") elementary school on the west side of Municipal Road 80 (old Highway 69 North) opposite Shirley Avenue in Val Therese (see **Exhibit 1.1** *Key Map*). The new school will replace the following three existing schools in the Val Therese/Hanmer area (see *Key Map* for their locations):

i) Ecole Ste Therese
ii) Ecole St Joseph
iii) Ecole Notre Dame

The proposed new school will have approximately 570 pupils and 74 staff, plus a Day Care for 73 children with 28 staff. Fifteen school buses will serve the school, but a number of pupils are expected to be driven to school by car. A small number will walk or ride a bike to/from school.

Exhibit 1.2 shows the preliminary site plan for the school. Access to the school will be via a main east-west driveway opposite Shirley Avenue, with separate secondary drive aisles to the staff parking, the school bus stopping area, parent pick-up/drop-off area and day care drop-off/pick-up.

The City Traffic Office conducted a special traffic count at the MR 80/Shirley Avenue intersection for this study. Tranplan Associates conducted special counts at the three existing CSCNO schools that will be amalgamated at the new site, as well as at Ecole Jean Paul II, a comparable CSCNO school in Val Caron.

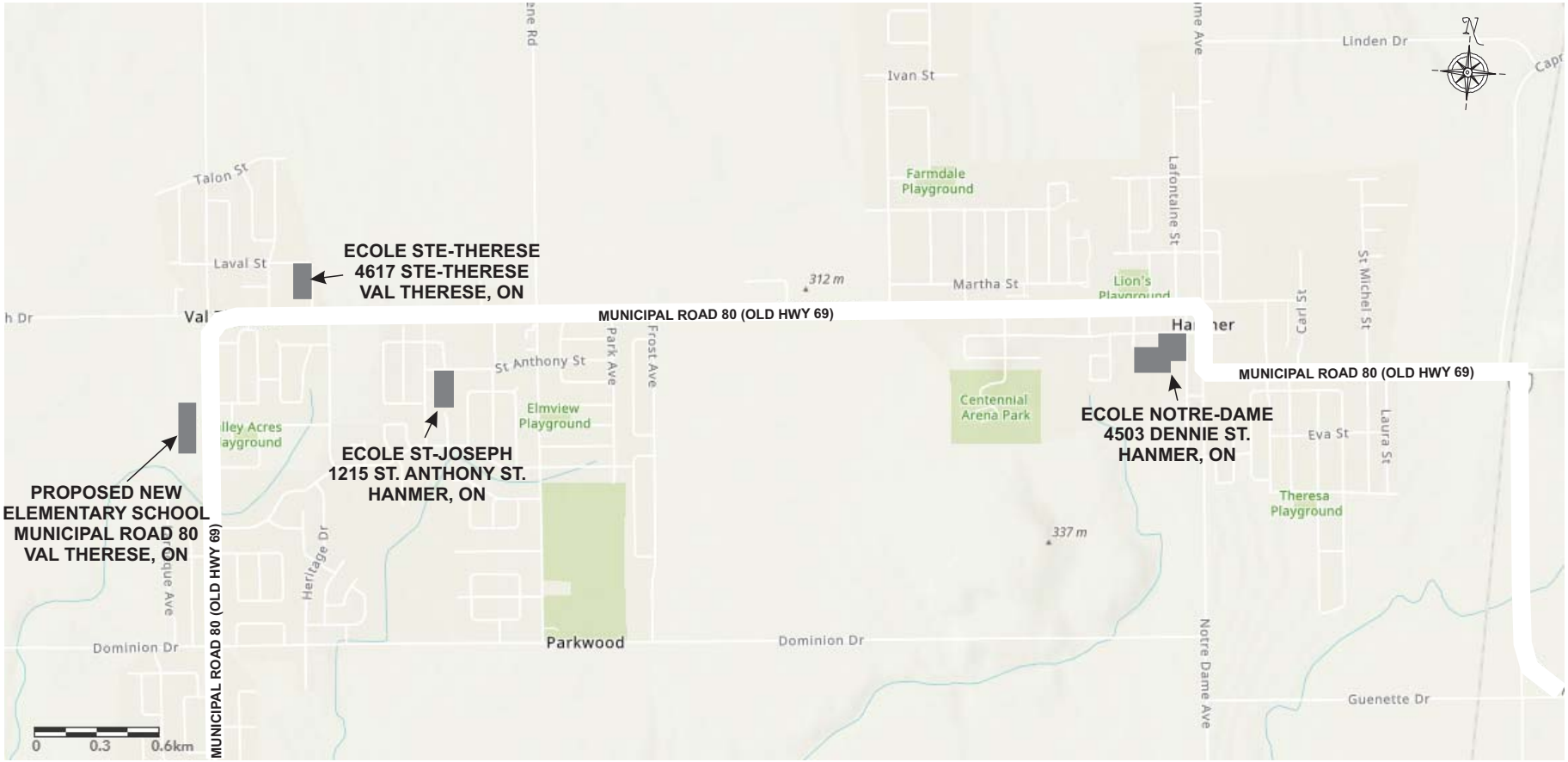


Exhibit 1.1: Key Map

Tranplan associates
TRAFFIC, TRANSIT, PARKING, TRANSPORTATION PLANNING
TORONTO (416) 670-2005
SUDBURY (705) 522-0272
PETERBOROUGH (705) 874-3638

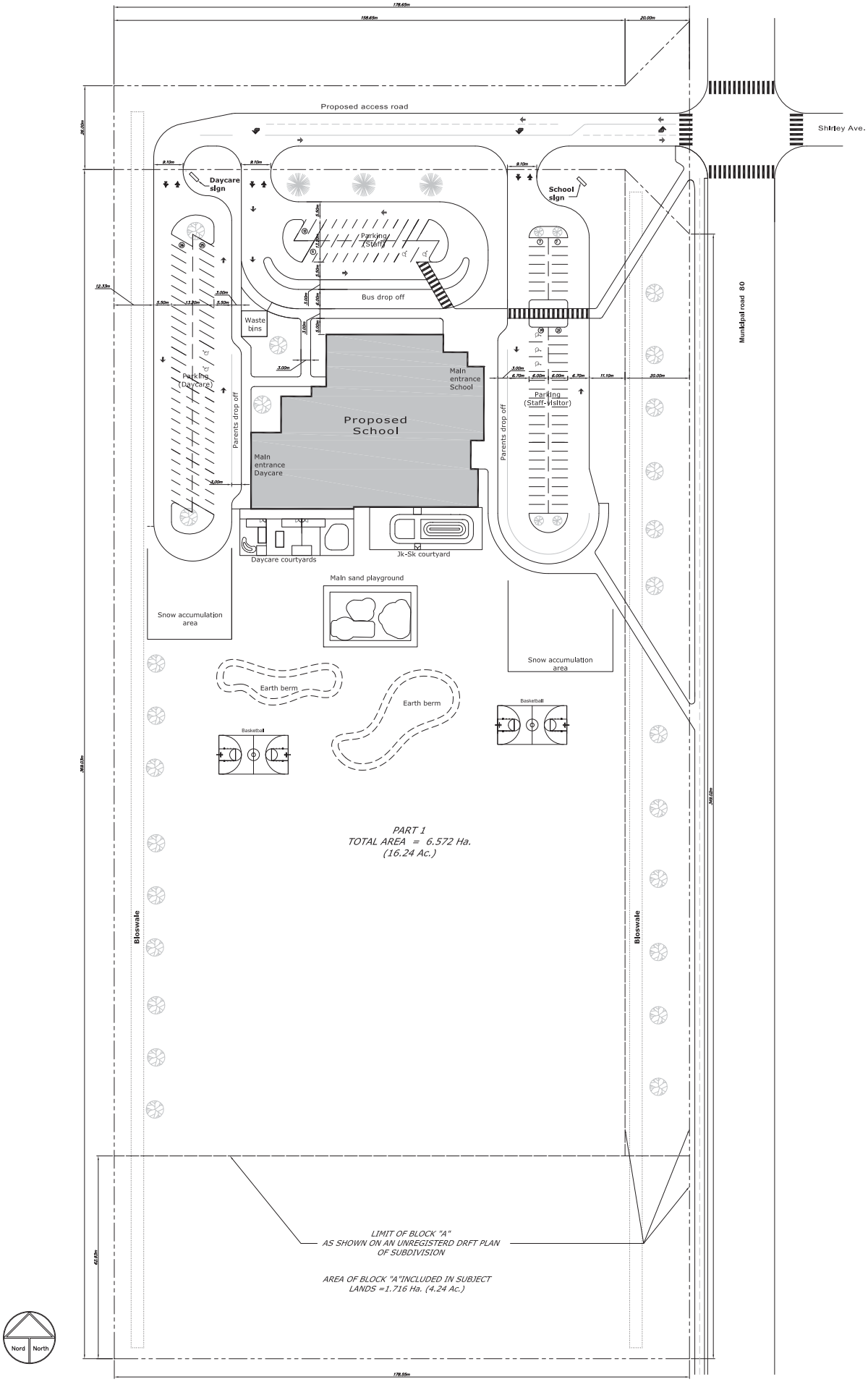


Exhibit 1.2 Proposed Site Plan

Background traffic volumes in the study area were projected to 2026 based on an assumed growth rate of 1.5% per annum. Traffic generation by the proposed school was estimated based on the following (see **Table 4.1**):

i) Observed trip generation at Ecole Jean Paul II in Val Caron.

ii) Observed trip generation at the three existing schools that will be amalgamated into the new school.

iii) Rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual.

School board officials have concerns about safety at the MR 80/Shirley Avenue intersection and they feel that traffic signals are the solution. Accordingly this study has focused on evaluating whether signalization can be justified. Special sensitivity analysis has been carried out on the traffic forecasts to examine how different assumptions about future traffic levels would affect the results of the signal warrant analysis.

This report describes the study process. The Principal Findings and Recommendations are presented in the following section.

2.0 PRINCIPAL FINDINGS AND RECOMMENDATIONS

2.1 The following is a description of the existing road network in the study area with the classifications based on the City's Official Plan:

- Municipal Road 80, Primary Arterial, five-lane rural cross-section, no sidewalks, 70 km/h, daily traffic approximately 15,000
- Shirley Avenue, Local Road, two-lane rural cross-section, no sidewalks, 50 km/h, daily traffic approximately 800.

2.2 MR 80/Shirley Avenue Intersection

Existing Traffic Conditions

The existing peak hour traffic volumes at the unsignalized intersection of MR 80/Shirley Avenue are shown in **Exhibit 3.1a**. The critical movement is the left turn from Shirley Avenue onto MR 80 to go south. During the morning peak hour, the left turn is operating at Level of Service "C"[1] with average delays of 17 seconds per vehicle with minimal queuing (see **Table 5.1**). During the afternoon peak hour, the Level of Service drops to "E" with average delays of 40 seconds, but the queuing remains minimal.

Collision History

During the six year period from 2013 to 2018, only three collisions were reported in the vicinity of the MR 80/Shirley intersection and one of those appears to have been mistakenly assigned to this location (see Appendix B for details). One in 2017 involved a single vehicle sliding off the road under icy conditions; there was a northbound rearender in 2014 (appears to have been mistakenly assigned to the Shirley Avenue location); and the third involved a sideswipe. There were no personal injuries reported.

[1] Level of Service ("LOS") is used in traffic engineering to the level of congestion along a roadway or at an intersection. Levels from "A" to "F" denote increasing congestion with "F" representing a high level of congestion. "C" and "D" are commonly used as design standards.

None of the three appear to be susceptible to prevention by traffic signals. In summary, the collision record does not indicate a traffic safety problem.

2024 Background Traffic

The existing traffic volumes were projected ahead to 2026 based on an average growth rate of 1.5% per annum. At 2026 background traffic levels the outbound left turns from Shirley Avenue are projected to continue operating at Level of Service "C" during the morning peak hour with average delays increased marginally from 17 to 19 seconds per vehicle (see **Table 5.1**). However, during the afternoon peak hour the outbound left turns are projected to operate at Level of Service "F" with average delays of 56 seconds per vehicle.

2.3 Forecasts of Traffic by New School

Three data sources were examined to estimate the traffic volumes that will be generated by the proposed new school (see **Table 4.1)** :

- the Institute of Transportation Engineers' Trip Generation Manual,
- the observed trip making observed at the three existing schools that will be amalgamated at the new school, and
- the trip making at a comparable CSCNO school (Ecole Jean Paul II) in Val Caron.

The data from Ecole Jean Paul II, adjusted for differences (see **Table 4.2**), were used to estimate the traffic that will be generated by the new school. It is expected to generate approximately 270 vehicle trips during the morning peak hour (170 in, 100 out), 200 vehicle trips during the PM school peak hour

[2] The Institute of Transportation Engineers is a Washington D.C. based international organization of traffic engineers and transportation planners. It publishes a number of technical manuals, including the Trip Generation Manual which is based on American and Canadian data.

(80 in, 120 out), and 60 vehicle trips during the PM street peak hour (20 in, 40 out).

2.4 Directional Orientation of the New School Traffic

The directional orientation of the school trips was estimated based on information provided by the School Board about the home locations of staff, pupils and day care users. It is estimated that 10% of school traffic will be to/from Shirley Avenue, 50% to/from MR 80 north and 40% to/from MR 80 south.

2.5 Impact of New School Traffic on MR 80/Shirley Intersection

With the new school, the existing T-intersection becomes a four-way intersection. Assuming STOP signs facing Shirley Avenue and the school access driveway, there will be significant delays for vehicles attempting to turn left onto MR 80 from both sides of MR 80.

The projected outbound left turn volumes from the school driveway are expected to experience extensive delays and queues (see **Table 5.1**). The left turns leaving the school in the morning are expected to operate at a volume/capacity ratio of 1.28 and experience delays of over five minutes with queues of over 50 metres (95% probability). In the afternoon (school peak) the outbound left turns are also projected to experience a volume/capacity ratio in excess of 1.0 with delays of close to 200 seconds per vehicle and queues of close to 50 metres in length at a 95% probability level.

The school would not be able to function with the above levels of delay and queuing. Under such conditions, there would be concerns about maintaining safe operation of the school buses as well as automobiles. Furthermore, such

a situation would not address the need for safe crossing of MR 80 by pedestrians. Some form of signalized traffic control is necessary if the school is to be located at the proposed site.

2.6 Alternative Forms of Signalized Control

The following forms of signalized control were considered for the MR 80/Shirley Avenue intersection:

i) Intersection Pedestrian Signals (IPS)

IPS pedestrian actuated (push button) traffic signals also known as half signals, are currently operating at several locations throughout Sudbury. When actuated, all traffic along MR 80 would be required to stop at the STOP lines in advance of Shirley Avenue and the school driveway. Pedestrians would have a protected crossing and vehicles would be able to make a left turn out from Shirley Avenue or the school driveway, or go straight across MR 80. The button can be pushed by pedestrians or motorists.

ii) Full Traffic Signals

Full traffic signals would be semi-actuated (coordinated or uncoordinated along MR 80). They would rest on green for MR 80 at all times except when a vehicle is detected on Shirley Avenue or on the school driveway or a pedestrian pushes a button to cross.

2.7 Intersection Pedestrian Signals (IPS)

The Ontario standards (warrants) for traffic signals for pedestrians stipulate

minimum traffic volumes along the main road and minimum pedestrian volumes crossing the main road over eight hours of a typical day. The projected pedestrian crossing volume of approximately 80 people over eight hours falls so far short of the required minimum of 200-240 that no further analysis was carried out (see Appendix F for the relevant MTO warrant charts).

In addition, School Board officials and the Sudbury Student Service Consortium, who manage the school bus system, have stated that school employees and school bus drivers will not under any circumstances actuate the IPS signals.

For these reasons IPS signals are not considered to be a realistic alternative for signal control at MR 80/Shirley Avenue.

2.8 Full Traffic Signals

The Ontario standards (warrants) for full traffic signals take into account vehicular volumes, pedestrian volumes and accident history. Since there have been very few collisions at the site, the analysis dealt only with the vehicular and pedestrian volumes. There are two separate warrants dealing with vehicular and pedestrian traffic levels. The first deals with overall total traffic levels on all approaches to the intersection, while the second focuses on the amount of delay experienced by the side street traffic.

The projected school traffic together with the 2026 background traffic was applied to the Ontario traffic signal warrants. In the case of Warrant 1: Total Traffic the projected volumes reached only 55% of the required minimum to justify signals. In the case of Warrant 2: Delay to Cross Traffic, the projected volumes reached 80% of the minimum (see **Table 6.2** and Appendix E).

A sensitivity analysis was carried out to see how the signal warrant would change with changes in the assumptions made in forecasting school traffic. Projected pedestrian/bicycle volumes were doubled, projected Shirley Avenue traffic to/from the school was doubled and the direction of approach along MR 80 was weighted more in favour of the north. Individually these changes had minor impact on the warrants (see **Table 6.2**), but in combination they raised Warrant 2: Delay to Cross Traffic from 80% to 89% of the required minimum.

The sensitivity analysis also looked at how the warrants might be affected by changes in non-school traffic patterns in the Shirley Avenue catchment area if the intersection were signalized (see **Table 6.2**). If the outbound left turns from Shirley Avenue were to increase by 50%, Warrant 2: Delay to Cross Street would reach 92% of the required minimum. A 100% increase in the outbound left turns would result in 97% on the warrant.

2.9 Conclusion with Respect to Signalization

The school cannot function without some form of signalized traffic control on MR 80 at Shirley Avenue. Full traffic signals are considered to be the only option if the school is to be located at the proposed site.

2.10 Active Transportation

The City of Greater Sudbury Official Plan places emphasis on promoting Active Transportation. In the case of the proposed school, Active Transportation would mean enabling and encouraging walking and biking to school by pupils, staff, parents and others. To a lesser extent, it would include encouraging ridesharing and public transit usage. The priorities for the new school are listed in 2.11 to 2.15.

2.11 Sidewalks/Footpaths/Bike Paths

The following sidewalks/footpaths/bike paths are recommended:

i) Pedestrian walkways (raised sidewalks or paths removed from vehicular driveways) from all building entrances to a main raised sidewalk along the main driveway leading to MR 80

ii) A safe raised pedestrian holding area on Shirley Avenue on the east side of MR 80

iii) Bicycle path(s) from MR 80 to bike racks near the school entrance(s).

iv) A paved pedestrian/bike path on the west side of MR 80 (removed from the vehicular roadway) from the school driveway to Jeanne d'Arc Street.

v) A high level of winter maintenance on all of the above.

2.12 MR 80 Crossing

In addition to traffic signals, it is recommended that a school crossing guard should be on duty for pupils crossing MR 80 at Shirley

2.13 Vehicle/Pedestrian Conflicts on Site

To make walking/biking as attractive as possible and to maximize safety, the site plan should minimize/eliminate conflicts between vehicular traffic and pedestrian/bike traffic on school property. Pedestrians and bicyclists should be able to get from MR 80 to the school preferably without having to cross any automobile/bus traffic/driveways. The proposed site plan requires pedestrians/bicyclists to cross the parent drop-off parking lot on the east side of the school. Pupil safety and convenience would be improved if the east side parking lot were relocated to the west side of the school. If the east side parking lot is retained as proposed, it is recommended that the pedestrian crossing be a raised platform across the parking lot.

2.14 Bike Racks

Convenient and secure bike storage should be provided at all relevant school entrances.

2.15 Bus Shelters

In order to enhance the appeal of taking transit, the School Board should work with the City to provide bus shelters at the bus stops on MR 80.

2.16 Priority Parking for Ridesharers

In order to encourage ridesharing, the most desirable parking should be reserved for rideshare participants.

3. Existing Conditions

3.1 Road Network

Municipal Road 80 is a Primary Arterial with a five-lane rural cross-section (centre two-way left turn lane) and no sidewalks. The posted speed limit is 70 km/h with daily traffic volumes of approximately 15,000.

Shirley Avenue is a two-lane Local Road with a rural cross-section and no sidewalks. The speed limit is 50 km/h. Daily traffic volumes are estimated at approximately 500.

3.2 Existing Peak Hour Traffic Volumes

The existing peak hour volumes at the study area intersection are shown in **Exhibit 3.1a**. The peak hour volumes are from a special nine hour Turning Movement Count conducted by the City at the MR 80/Shirley intersection expressly for this study. The turning movement volumes for all nine hours are shown in **Table 4.1** (see also **Appendix A**). The City also provided a 24-hour Automatic Traffic Recorder count on MR 80 north of Dominion Drive (see **Appendix A**).

The existing morning peak hour at the MR 80/Shirley intersection is between 7:45 and 8:45 am; the afternoon peak hour is between 4:30 and 5:30 pm, but the school peak in the afternoon is expected to be between 2:45 and 3:45 pm.

One noteworthy feature of the peak hour (and during all nine hours) traffic volumes at the intersection is the total absence of pedestrian traffic crossing MR 80, despite the fact that the City transit service has a stop on the west side of MR 80.

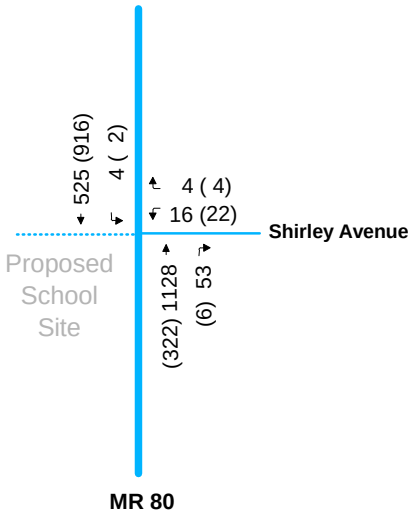
3.3 Existing Level of Service

The outbound left turns from Shirley Avenue at the MR 80/Shirley intersection are currently operating at Level of Service "C" during the morning peak hour

a) Existing Peak Hour Traffic Volumes

Counts by City Traffic Office
October 3, 2019 4:30 - 5:30 pm
October 4, 2019 7:15 - 8:15 am

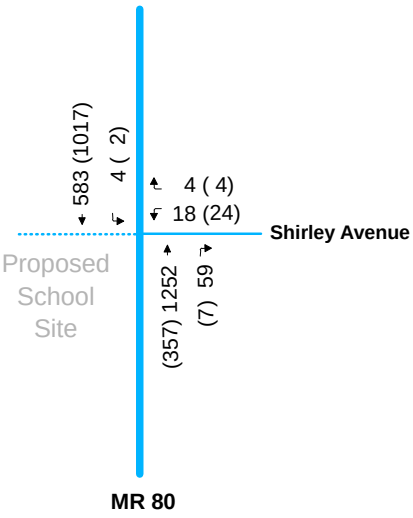
PM Peak Hour
(AM pk hr in brackets)

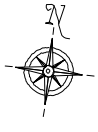


b) 2026 Peak Hour Background Traffic Volumes

Volumes increased by 1.5% per annum
from 2019 to 2026.

PM Peak Hour
(AM pk hr in brackets)





NOTE: Not to scale

Exhibit 3.1

Existing and Projected 2026 Background Traffic Volumes

(average delays of 17 seconds per vehicle at a volume/capacity ratio of 0.09 and minimal queuing - see **Table 5.1**). During the afternoon peak hour the Level of Service drops to "E" with average delays of 40 seconds, a v/c ratio of 0.18 and minor queuing. Levels of Service "E" and "F" are common for side street traffic making left turns onto high volume arterial roads such as MR 80.

3.4 Collision Statistics

Vehicular collision reports in the City data bank for the six year period from 2013 through 2018 were provided by the City Traffic Office (see Appendix B for the data from the City). Only three collisions are on file for that period. The first collision occurred in 2017 and involved a single vehicle running off the road under icy conditions; the second collision, a rearender that occurred in 2014 appears to have been mistakenly assigned to the Shirley Avenue intersection; the third collision, also in 2014, was a sideswipe. No injuries were reported in the three collision reports. Traffic safety does not appear to be an issue at the intersection, nor does it appear that any of the three collisions were susceptible to correction by the presence of traffic signals.

4. Traffic Forecasts

4.1 Background Traffic Growth

The existing traffic volumes along MR 80 and Shirley Avenue have been increased by 1.5% per annum to 2026 to produce the 2026 background traffic volumes (see **Exhibit 3.1b**).

This assumes no change in the street network or traffic control measures in the vicinity of the MR 80/Shirley Avenue intersection. See Section 6.3 for a discussion of potential changes in background traffic if traffic signals were to be installed at MR 80/Shirley Avenue.

4.2 Site Traffic

In estimating the site traffic from the proposed new school and day care consideration was given to three data sources:

i) Surveys of the existing trips being generated by the three schools that will be amalgamated at the new school

ii) A survey of a comparable elementary school in Val Caron, Ecole Jean Paul II on MR 15 west of MR 80.

iii) Institute of Transportation Engineers (ITE) Trip Generation Manual

The results from the three sources are shown in **Table 4.1**. The ITE trip volumes for a 570 pupil elementary school are very similar to the observed volumes at the 436 pupil Ecole Jean Paul II during the morning peak hour. During the school peak in the afternoon, the observed volumes at Jean Paul II are 20% higher than the estimates produced by the ITE rates, even though the ITE estimates were based on 570 pupils as opposed to the 436 pupils at Jean Paul II.

Table 4.1: COMPARISON OF TRIP GENERATION DATA SOURCES ITE RATES vs OBSERVED LOCAL VOLUMES

LAND USE	WEEKDAY AM PEAK HOUR				WEEKDAY SCHOOL PM PEAK HOUR				WEEKDAY PM PEAK HOUR (4-6 PM)			
	ITE Trip Generation Rate (ITE Trip Generation Manual - 10th Edition)	**Vehicle Trips**			**ITE TG Rate** (ITE Trip Generation Manual - 10th Edition)	**Vehicle Trips**			**ITE Trip Generation Rate** (ITE Trip Generation Manual - 10th Edition)	**Vehicle Trips**		
		Total	In	Out		Total	In	Out		Total	In	Out
ITE Trip Generation Manual												
Elementary School **570** pupils	Ln(T) = 1.14 Ln(X) - 1.86		55%	45%	Ln(T) = 1.09 Ln(X) - 1.92		45%	55%	T = 0.15 (X)		49%	51%
ITE Land Use #520 (design capacity)	where T = vehicle trips X = no of pupils	216	119	97	where T = vehicle trips X = no of pupils	148	67	81	where T = vehicle trips X = no of pupils	86	42	44
Day Care Centre **73** child	T = 0.73 (X) + 5.24		53%	47%	Estimated		50%	50%	Ln(T) = 0.87Ln(X)+0.32		47%	53%
ITE Land Use #565	where T = vehicle trips X = no of children	59	31	28		20	10	10	where T = vehicle trips X = no of children	58	27	31
TOTAL using ITE rates		**274**	**150**	**125**		**168**	**77**	**91**		**143**	**69**	**74**
St Joseph + Notre Dame + Val Therese (total of 3 existing schools)		54% **260**	46% **141**	46% **119**		46% **201**	54% **93**	54% **108**				
Ecole Jean Paul II **436** pupils (comparable school in Val Caron)		64% **264**	36% **169**	36% **95**		41% **202**	59% **83**	59% **119**		**59**	34% **20**	66% **39**

Note: Numbers may not add up exactly due to rounding.

Accordingly the observed traffic volumes at Ecole Jean Paul II were adopted as the basis for estimating future traffic volumes at the new Val Therese school and adjusted to reflect the differences between the two schools (see **Table 4.2**). The design capacity of the proposed elementary school in Val Therese is 570 pupils compared to the 436 pupils currently attending Jean Paul II (30% more), but there are 10% more staff at Jean Paul II (83 versus 74). The day cares at the two schools are identical in size, but Jean Paul II provides care for children with special requirements that involve special bus services. The impact of each of the differences is estimated as shown in **Table 4.2**.

The proposed new school is expected to generate (see **Table 4.2**):

- 300 vehicle trips during the AM peak hour (180 in, 120 out)
- 240 vehicle trips during the PM school peak hour (100 in, 140 out)
- 60 vehicle trips during the PM street peak hour (20 in, 40 out)
- 30-40 pedestrian/bicycle trips during the AM and PM peak hours.

4.3 Orientation of the Site Traffic

The orientation of the trips to/from the proposed new school has been estimated on the basis of the following:

- home addresses of the school staff,
- home location of the pupils,
- home location of the day care clients,
- configuration of the study area road network,

The school staff home address locations are distributed as follows:

- 5% are in the Shirley Avenue catchment area within Val Therese
- 50% are in the MR 80 north traffic catchment area
- 45% are in the MR 80 south traffic catchment area

Table 4.2: ESTIMATED TRIP GENERATION BY PROPOSED NEW VAL THERESE ELEMENTARY SCHOOL

	WEEKDAY AM PK HR			SCHOOL PM PK HR			STREET PM PK HR		
	Vehicle Trips			Vehicle Trips			Vehicle Trips		
	Total	In	Out	Total	In	Out	Total	In	Out
Ecole Jean Paul II **436** pupils		64%	36%		41%	59%		34%	66%
(comparable school in Val Caron)	**264**	**169**	**95**	**202**	**83**	**119**	**59**	**20**	**39**
Trips by school buses	28	14	14	26	13	13	2	1	1
Estimated trips by staff	86	80	6	30	0	30	25	2	23
Estimated trips by parents & others	150	75	75	146	70	76	32	17	15
Differences between Jean Paul II and proposed New School									
i) 570 pupils vs 436 pupils at JP II: 30% increase in pupils and driving to school	45	23	23	44	21	23	10	5	5
ii) 74 staff vs 83 staff at JP II: 11% decrease in staff and staff trips	-9	-9	0	-3	0	-3	-3	0	-3
iii) special needs Day Care at JP II: decrease in Day Care trips (est)	-5	-3	-2	-5	-2	-3	-2	-1	-1
iv) 15 school buses vs 14 at JP II: increase of 1 bus trip	2	1	1	2	1	1	-2	-1	-1
Proposed New School Val Therese **570** pupils	**297**	**181**	**117**	**240**	**103**	**137**	**62**	**23**	**39**

Note: Numbers may not add up exactly due to rounding.

The pupil population is distributed as follows:

- 8% are in the Shirley Avenue catchment area within Val Therese
- 55% are in the MR 80 north catchment area
- 37% are in the MR 80 south catchment area

The day care families are distributed as follows:

- 75% in the Hanmer/Capreol area (including Val Therese)
- 25% in the Val Caron/Blezard area

Based on the above, for planning purposes the future school traffic is projected to be oriented as follows:

i) 10% to/from Shirley Avenue

ii) 50% to/from the north along MR 80

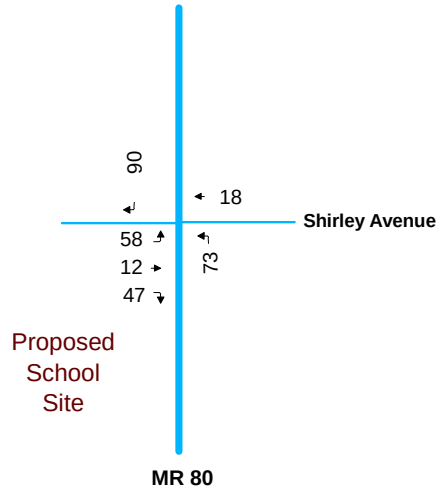
iii) 40% to/from the south along MR 80

Exhibits 4.1a and **4.1b** show the projected site traffic volumes by turning movement during the morning and two afternoon peak hours.

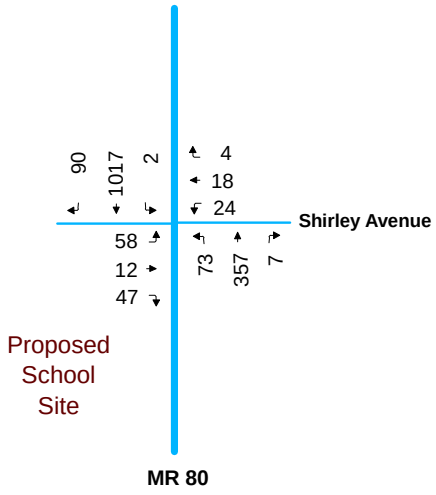
4.4 Total Traffic

Exhibits 4.1c and **4.1d** show the projected total traffic in 2026 with the development of the proposed school.

a) Projected AM Peak Hour Site Traffic

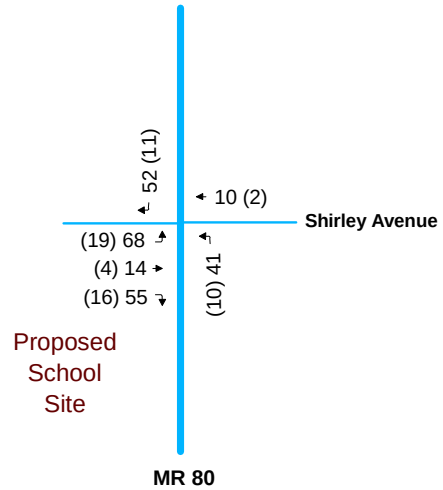


c) Projected AM Peak Hour Total Traffic



b) Projected PM Peak Hour Site Traffic

School PM pk hr (Street PM pk hr in brackets)



d) Projected PM Peak Hour Total Traffic

School PM pk hr (Street PM pk hr in brackets)

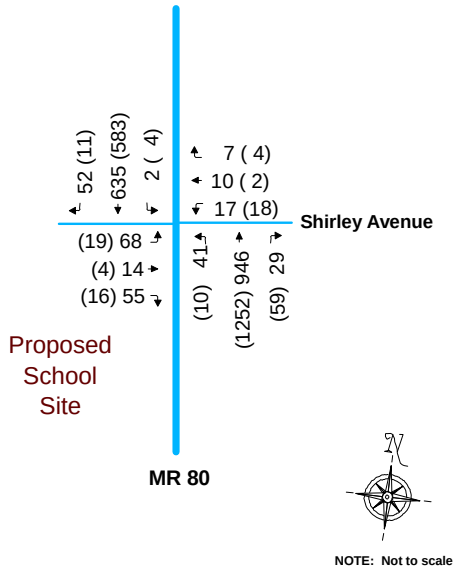


Exhibit 4.1

Projected Site Traffic and 2026 Total Traffic Volumes

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PETERBOROUGH 705-874-3638
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5. Capacity Analysis

The study area traffic volumes have been analyzed using the Synchro HCM methodology for the following cases:

i) Existing traffic volumes (see **Exhibit 3.1a**).

ii) Projected 2026 background traffic volumes (see **Exhibit 3.1b**).

iii) Projected 2026 background traffic volumes plus the new school traffic (see **Exhibits 4.1c** and **4.1d**).

The key results are summarized in **Table 5.1**. Detailed Synchro analysis reports are in Appendix C.

5.1 Existing Conditions

As discussed in section 3.3, at existing traffic levels, the outbound left turns from Shirley Avenue at the MR 80/Shirley intersection are operating at Level of Service "C" during the morning peak hour (average delays of 17 seconds per vehicle at a volume/capacity ratio of 0.09 and minimal queuing). During the afternoon peak hour the Level of Service drops to "E" with average delays of 40 seconds, a v/c ratio of 0.18 and minor queuing. Levels of Service "E" and "F" are common for left turns from side streets along high volume arterial roads such as MR 80.

5.2 2026 Background Traffic

At 2026 traffic levels (without the proposed new school) the outbound left turns from Shirley Avenue are projected to continue operating at Level of Service "C" during the morning peak hour (average delays of 19 seconds per vehicle at a volume/capacity ratio of 0.11 and minimal queuing). During the afternoon peak hour the Level of Service is projected to drop from "E" to "F" with average delays of 56 seconds, a v/c ratio of 0.26 and minor queuing (one

Table 5.1: Summary of Intersection Analysis
MR 80 / Shirley Avenue
Synchro Software HCM Report*

Intersection		2019 Existing Conditions				2026 Background Traffic**				2026 Background Traffic + New School*** Unsignalized				2026 Background Traffic + New School Signalized			
		LOS	Delay (sec.)	v/c	Q95*** (m.)	LOS	Delay (sec.)	v/c	Q95*** (m.)	LOS	Delay (sec.)	v/c	Q95*** (m.)			v/c	Q95*** (m.)
AM pk hr	EBTL									**F**	324.1	1.28	51.8	**D**	42.9	0.44	25.1
	EBR									**B**	14.2	0.12	3.1	**B**	12.1	0.22	9.6
	WBLTR	**C**	17.0	0.09	2.2	**C**	19.1	0.11	2.8	**F**	79.8	0.53	19.0	**D**	35.7	0.28	17.5
	NBL									**B**	12.3	0.14	3.8	**A**	5.8	0.24	10.5
	NBTR													**A**	2.8	0.14	13.7
	SBL	**A**	8.0	0.00	0.0	**A**	8.1	0.00	0.0	**A**	8.1	0.00	0.0	**A**	3.0	0.00	0.6
	SBTR													**A**	4.0	0.43	50.2
PM pk hr	EBTL									**E**	41.3	0.29	8.6	**D**	41.1	0.20	11.6
(street peak)	EBR									**B**	10.5	0.03	0.6	**B**	18.3	0.11	6.1
	WBLTR	**E**	40.7	0.18	5.0	**F**	56.4	0.26	7.5	**F**	113.8	0.46	14.0	**D**	37.4	0.21	11.3
	NBL									**A**	8.9	0.01	0.3	**A**	2.0	0.02	1.3
	NBTR													**A**	2.7	0.46	46.7
	SBL	**B**	11.8	0.01	0.2	**B**	12.7	0.01	0.2	**B**	12.7	0.01	0.2	**A**	2.2	0.01	0.7
	SBTR													**A**	1.8	0.21	16.2
PM pk hr	EBTL									**F**	195.3	1.04	47.9	**D**	45.5	0.51	28.7
(school peak)	EBR									**B**	11.4	0.10	2.5	**B**	11.4	0.24	10.4
	WBLTR									**F**	99.7	0.52	17.1	**C**	29.5	0.19	13.1
	NBL									**A**	9.4	0.05	1.3	**A**	3.8	0.08	5.4
	NBTR													**A**	4.1	0.38	45.1
	SBL									**B**	10.5	0.00	0.1	**A**	3.5	0.01	0.7
	SBTR													**A**	3.4	0.27	28.3

NOTE: * See Appendix D for detailed Synchro reports of the capacity/Level of Service.

** Background traffic includes 1.5% growth p.a. in traffic from 2019 to 2026.

*** See Table 4.2 for school traffic volumes.

or two vehicles, due to the low volumes). As stated earlier Levels of Service "E" and "F" are common for side street left turns onto high volume arterial roads such as MR 80.

5.3 2026 with New School Traffic

Unsignalized

With the new school, the existing T-intersection becomes a four-way intersection. Assuming STOP signs facing Shirley Avenue and the school access driveway, there will be significant delays for vehicles attempting to turn left onto MR 80 from both sides of MR 80.

The projected outbound left turn volumes from the school driveway will be well beyond the capacity of the intersection during peak hours and would result in extensive delays and queues (see **Table 5.1**). The left turn leaving the school in the morning is projected to experience delays of over five minutes (volume/capacity ratio of 1.28) and queues of over 50 metres. In the afternoon (school peak) the outbound left turns are projected to experience a volume/capacity ratio of 1.04 with delays of 195 seconds per vehicle and queues of 48 metres.

Signalized

The capacity analysis was also carried out assuming traffic signals at the intersection (see next section for a discussion of traffic signal warrants). Traffic signal would provide a good Level of Service at the intersection. For study purposes it was assumed that the intersection would have signals that would rest on green for MR 80 except when a vehicle was detected on either side street approach. A base 90 second cycle was assumed with permissive left turn on all approaches. Changes in these assumptions would change the

results, but only marginally.

As can be seen in Table 5.1, all movements along MR 80 would operate at Level of Service "A" with minimal delays. The outbound left turns from the school and from Shirley Avenue would operate at Level of Service "C" and "D" with average delays ranging from 30 seconds to 45 seconds and queues of 10 to 30 metres. If needed the side street greens could be increased slightly to reduce the delays and queuing at the school and on Shirley Avenue with only a minor impact on MR 80 traffic.

6. Analysis of the Need for Signalization

The School Board made it clear from the beginning that they want the MR 80/Shirley Avenue intersection to be signalized to provide the proper level of controlled access to/from the proposed new school. In order to respond to the Board's position, the following analyses have been carried out:

i) Application of the projected future traffic volumes to the Ontario (MTO) Traffic Signal warrants

ii) Traffic Signal Warrants sensitivity analysis with respect to the school traffic
- potential variation in the direction of approach
- potential variation in the pedestrian and biking volumes.

iii) Traffic Signal Warrants sensitivity analysis with respect to reorientation of non-school traffic to the signalized intersection.

iv) Application of the projected future pedestrian and bike volumes to the Ontario (MTO) warrants for an Intersection Pedestrian Signal (IPS).

v) Site inspection for sightlines and any unique conditions that might affect the need for signalization.

6.1 Ontario (MTO) Traffic Signal Warrants

The Traffic Signal Warrants are based on traffic levels (including pedestrian traffic) over the highest eight hours of a typical day. The projected 2026 traffic volumes at the MR 80/Shirley Avenue intersection for the eight highest hours are shown in **Table 6.1**. These volumes were applied to the Ontario (MTO) Traffic Signal Warrants (see Appendix E for the detailed warrant computations).

The projected volumes produced the following results[3]:

Warrant 1 Total Traffic	55% (of the minimum requirement)
Warrant 2 Delay to Side Street	80% (of the minimum requirement)

[3] Signalization is warranted if Warrant 1 or Warrant 2 reaches 100%, or if both reach 80%.

Table 6.1 Hourly Traffic Volumes Through MR 80 / Shirley Avenue Intersection

a) Existing Traffic Volumes 2019

TIME	MR 80 SB			Shirley Ave WB				MR 80 NB			School Drway EB		
	RT	Thru	LT	RT	Thru	LT	Peds*	RT	Thru	LT	RT	Thru	LT
6:00 - 7:00		604	0	1		27	0	3	134				
7:00 - 8:00		927	1	4		21	0	5	310				
8:00 - 9:00		731	3	1		23	0	9	373				
11:00 - 12:00		512	3	3		13	0	8	514				
12:00 - 1:00		557	3	5		18	0	14	547				
2:00 - 3:00		566	5	3		17	1	22	655				
3:00 - 4:00		572	2	6		15	0	26	852				
4:00 - 5:00		522	3	4		23	1	39	1109				
5:00 - 6:00		474	2	5		13	0	48	964				

Note *: Pedestrians crossing MR 80 in both directions on both sides of Shirley Avenue.

b) Projected Background Traffic Volumes 2026

TIME	MR 80 SB			Shirley Ave WB				MR 80 NB			School Drway EB		
	RT	Thru	LT	RT	Thru	LT	Peds*	RT	Thru	LT	RT	Thru	LT
6:00 - 7:00		670	0	1		30	0	3	149				
7:00 - 8:00		1029	1	4		23	0	6	344				
8:00 - 9:00		811	3	1		26	0	10	414				
11:00 - 12:00		568	3	3		14	0	9	571				
12:00 - 1:00		618	3	6		20	0	16	607				
2:00 - 3:00		628	6	3		19	1	24	727				
3:00 - 4:00		635	2	7		17	0	29	946				
4:00 - 5:00		579	3	4		26	1	43	1231				
5:00 - 6:00		526	2	6		14	0	53	1070				

c) New School Traffic

TIME	MR 80 SB			Shirley Ave WB				MR 80 NB			School Drway EB		
	RT	Thru	LT	RT	Thru	LT	Peds*	RT	Thru	LT	RT	Thru	LT
6:00 - 7:00	0				0		0			0	0	0	0
7:00 - 8:00	39				8		2			31	5	1	6
8:00 - 9:00	78				16		36			62	50	12	62
11:00 - 12:00	11				2		2			9	8	2	10
12:00 - 1:00	8				2		1			6	6	2	8
2:00 - 3:00	20				4		13			16	2	0	2
3:00 - 4:00	36				7		28			29	63	16	78
4:00 - 5:00	18				4		2			15	20	5	25
5:00 - 6:00	3				1		1			3	11	3	13

d) 2026 Total Traffic

TIME	MR 80 SB			Shirley Ave WB				MR 80 NB			School Drway EB		
	RT	Thru	LT	RT	Thru	LT	Peds*	RT	Thru	LT	RT	Thru	LT
6:00 - 7:00	0	670	0	1	0	30	0	3	149	0	0	0	0
7:00 - 8:00	39	1029	1	4	8	23	2	6	344	31	5	1	6
8:00 - 9:00	78	811	3	1	16	26	36	10	414	62	50	12	62
11:00 - 12:00	11	568	3	3	2	14	2	9	571	9	8	2	10
12:00 - 1:00	8	618	3	6	2	20	1	16	607	6	6	2	8
2:00 - 3:00	20	628	6	3	4	19	14	24	727	16	2	0	2
3:00 - 4:00	36	635	2	7	7	17	28	29	946	29	63	16	78
4:00 - 5:00	18	579	3	4	4	26	3	43	1231	15	20	5	25
5:00 - 6:00	3	526	2	6	1	14	1	53	1070	3	11	3	13

Traffic signals are not warranted on the basis of the projected 2026 vehicular and pedestrian volumes.

6.2 School Traffic Sensitivity Analysis

Sensitivity analyses were carried out to see how changes in the assumptions made in forecasting school traffic would affect the outcome of the warrant computations. The following tests were carried out (see summary of results in **Table 6.2**):

i) The directional orientation of the school traffic was adjusted to double the volume arriving/leaving the school via Shirley Avenue. That change on its own produced the following results:
Warrant 1 Total Traffic 58%
Warrant 2 Delay to Side Street 84%

ii) The directional orientation of the school traffic was adjusted to increase the proportion of vehicles arriving from MR 80 North from 50% to 70% and reducing those arriving from MR 80 South from 40% to 20%. That change on its own produced the following results:
Warrant 1 Total Traffic 56%
Warrant 2 Delay to Side Street 84%

iii) The pedestrian and biking volumes across MR 80 were increased by 100%. That increase on its own produced the following results:
Warrant 1 Total Traffic 56%
Warrant 2 Delay to Side Street 83%

iii) The combination of the above three adjustments gave the following results:
Warrant 1 Total Traffic 58%
Warrant 2 Delay to Side Street 89%

Traffic signals are not warranted even with a combination of relatively major changes in school traffic patterns/volumes.

TABLE 6.2
PROPOSED NEW ELEMENTARY SCHOOL
MR 80 at SHIRLEY AVENUE, VAL THERESE
SIGNAL WARRANT SENSITIVITY ANALYSIS

	Warrant 1* Total Traffic	Warrant 2* Delay to Cross Traffic
Projected 2026 Total Traffic (2026 Background Traffic + Projected School Traffic)	**55%**	**80%**
Sensitivity Test No.1 (School traffic via Shirley Avenue doubled)	**58%**	**84%**
Sensitivity Test No.2 (Directional orientation of school traffic weighted to north)**	**56%**	**84%**
Sensitivity Test No.3 (Pedestrian and bike traffic to/from school doubled)	**56%**	**83%**
Adjustments No.1, No.2 and No.3 Combined	**58%**	**89%**
Sensitivity Test No.4 - Non-School Traffic (Westbound left turns from Shirley Avenue increased by 50%)	**62%**	**92%**
Sensitivity Test No.5 - Non-School Traffic (Westbound left turns from Shirley Avenue increased by 100%	**68%**	**97%**

NOTE *: Traffic signals are warranted if either Warrant 1 or Warrant 2 reaches 100% or if both reach 80%.

**: School traffic to/from MR 80 south reduced by 50% and reassigned to the north approach.

6.3 Non-School Traffic Sensitivity Analysis

Traffic signals can be expected to have an impact on non-school traffic, especially on motorists in the Shirley Avenue catchment area that wish to go south on MR 80 (i.e. to make a left turn from Shirley Avenue onto MR 80 southbound). Traffic signals would attract some additional traffic and for study purposes two scenarios were tested.

In the first scenario, the volume of non-school traffic using Shirley Avenue to make left turns onto MR 80 was increased by 50%. That change on its own produced the following results (see **Table 6.2**):

Warrant 1 Total Traffic	62%
Warrant 2 Delay to Side Street	92%

In the second case, a 100% increase in left turns from Shirley Avenue was tested with the following results:

Warrant 1 Total Traffic	68%
Warrant 2 Delay to Side Street	97%

The conclusion from the sensitivity analysis is that school traffic on its own, even under the most "optimistic" assumptions, is very unlikely to warrant traffic signals on MR 80. However if the non-school traffic using Shirley Avenue for left turns out onto MR 80 were to increase by 100%, accompanied by a small increase in the school traffic forecasts, the traffic volumes could reach signal warrant levels.

6.4 Ontario (MTO) Intersection Pedestrian Signals (IPS)

The projected pedestrian (and bike) volumes that are expected to cross MR 80 to/from the school over eight hours total approximately 80. These pedestrians would all be 12 years of age or older since the School Board provides school bus service to anybody younger regardless of their distance from school if they have to cross a major road such as MR 80. While the Provincial warrant for pedestrian traffic signals gives additional weight (i.e.

factored by two) to younger children and the elderly, that does not apply in this situation.

The Provincial Warrant 1- Pedestrian Volume (see Appendix F) requires a minimum of 240 pedestrian crossings during eight highest hours of the day where the 8-hour vehicular volume is 10,000 (MR 80 total volume during eight hours).

The Provincial Warrant 2 - Pedestrian Delay (see Appendix F) requires a minimum of 200 pedestrian crossings in eight hours and high levels of delay for at least 130 of the 200 pedestrians.

The total projected volume of 80 pedestrians falls so far short of the pedestrian signal warrants that no further analysis was undertaken.

In addition, School Board officials and the Sudbury Student Service Consortium, who manage the school bus system, have stated that school employees and school bus drivers will not under any circumstances actuate IPS signals.

For these reasons IPS signals are not considered to be a realistic alternative for signal control at MR 80/Shirley Avenue.

6.5 Site Inspection

The site was visited to identify any unique conditions that might affect the need for signalization. The following conditions were noted:

- Sight distances are excellent on all approaches
- MR 80 has minimal side friction (i.e. wide open spaces around the road) and this will always encourage higher speeds.

6.6 Potential Impact of Traffic Signals on Background Traffic

It is likely that if traffic signals were to be installed at the MR 80/Shirley Avenue intersection that there would be some additional non-school traffic

attracted to use this route for making a left turn out onto MR 80. The existing traffic count at the MR 80/Shirley Avenue intersection (see **Exhibit 3.1a**) shows that 22 vehicles turned left from Shirley Avenue in the morning peak hour and 53 returned in the afternoon (northbound right turn). This could be an indicator that some motorists avoid using Shirley Avenue in the morning to make a left turn onto MR 80, but find it convenient to use Shirley Avenue in the afternoon when it only requires a right turn.

There may be a number of motorists that might be attracted to Shirley Avenue if it is signalized. As stated in Section 6.3, if the outbound left turns from Shirley Avenue were to double, the signal warrant for the intersection is projected to reach 97%.

7 Active Transportation

The City of Greater Sudbury Official Plan places emphasis on promoting Active Transportation. In the case of the proposed school, Active Transportation would mean enabling and encouraging walking and biking to school by pupils, staff, parents and others. To a lesser extent, it would include encouraging ridesharing and public transit usage. The following are considered to be the priorities for the new school:

i) Good quality and convenient walkways/bike paths, including a high level of winter maintenance of these facilities
ii) Safe crossing of MR 80 i.e. traffic signals and crossing guard
iii) Eliminating/minimizing vehicular/pedestrian conflicts on site
iv) Conveniently located secure bike storage at school entrances
v) Encourage provision of bus shelters on MR 80 at bus stops
vi) Priority parking for ridesharing .

7.1 Sidewalks/Footpaths/Bike Paths

There are no sidewalks along this section of MR 80 nor are there any along Shirley Avenue. There is a sidewalk along the south side of Gauthier Street and there are sidewalks in the Jeanne d'Arc Street area including along the west side of Dugas Street in the vicinity of Jeanne d'Arc Street.

Some older pupils living in the Shirley Avenue catchment area will be expected to walk (or bike) to school. They will need safe sidewalks /footpaths/bike paths from MR 80 to the school entrance. Some parents and staff will also want to walk to school and there should be sidewalks/footpaths to appropriate school entrances. Day Care staff occasionally take children out for a walk and a suitable sidewalk/footpath is desirable.

In consideration of the above, the following sidewalks/footpaths/bike paths are recommended as priorities for the school:

i) Pedestrian walkways (raised sidewalks or paths removed from vehicular driveways) from all building entrances to a main raised sidewalk along the main driveway leading to MR 80

ii) A safe raised pedestrian holding area on Shirley Avenue on the east side of MR 80

iii) Bicycle path(s) from MR 80 to bike racks near the school entrance(s).

iv) A paved pedestrian/bike path on the west side of MR 80 (removed from the vehicular roadway) from the school driveway to Jeanne d'Arc Street.

v) A high level of winter maintenance will need to be put in place possibly with shared responsibility between the City and the School Board.

7.2 MR 80 Crossing

MR 80 is a straight wide open roadway with high vehicular speeds. In addition to traffic signals, a school crossing guard should be on duty for pupils crossing MR 80 at Shirley

7.3 Vehicle/Pedestrian Conflicts on Site

To make walking/biking as attractive as possible and maximize safety, the site plan should minimize/eliminate conflicts between vehicular traffic and pedestrian/bike traffic on school property. Pedestrians and bicyclists should desirably be able to get from MR 80 to the school without having to cross any automobile/bus traffic/driveways.

The proposed site plan requires pedestrians/bicyclists to cross the parent drop-off parking lot on the east side of the school. This conflict between pedestrians and vehicles could be eliminated if the parking lot was relocated to the west side of the school. If the parking lot remains on the east side. pedestrian safety would be improved by making the crossing a raised platform

(i.e. the crossing at sidewalk level with ramps on the approaches for vehicular traffic).

7.4 Bike Racks

Convenient and secure bike storage should be provided at all relevant school entrances.

7.5 Bus Shelters

In order to enhance the appeal of taking transit, the School Board should work with the City to provide bus shelters at the bus stops on MR 80.

7.6 Priority Parking for Ridesharers

In order to encourage ridesharing, the most desirable parking spaces should be reserved for rideshare participants.

APPENDIX A

Traffic Count Data
provided by City Traffic Office

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: MR 80 at Shirley Avenue
Site Code:
Start Date: 10/03/2019

Turning Movement Data

Start Time	MR 80 Southbound				Shirley Avenue Westbound				MR 80 Northbound				Int. Total
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	
2:00 PM	135	0	0	135	0	5	0	5	4	137	0	141	281
2:15 PM	161	3	0	164	3	4	0	7	8	153	0	161	332
2:30 PM	131	1	0	132	0	5	1	5	6	176	0	182	319
2:45 PM	139	1	0	140	0	3	0	3	4	189	0	193	336
Hourly Total	566	5	0	571	3	17	1	20	22	655	0	677	1268
3:00 PM	119	1	0	120	2	3	0	5	4	172	0	176	301
3:15 PM	164	1	0	165	1	7	0	8	6	211	0	217	390
3:30 PM	149	0	0	149	2	3	0	5	8	243	0	251	405
3:45 PM	140	0	0	140	1	2	0	3	8	226	0	234	377
Hourly Total	572	2	0	574	6	15	0	21	26	852	0	878	1473
4:00 PM	132	0	0	132	1	4	1	5	5	267	0	272	409
4:15 PM	122	1	0	123	2	9	0	11	8	249	0	257	391
4:30 PM	142	1	0	143	1	3	0	4	10	297	0	307	454
4:45 PM	126	1	0	127	0	7	0	7	16	296	0	312	446
Hourly Total	522	3	0	525	4	23	1	27	39	1109	0	1148	1700
5:00 PM	106	0	0	106	3	3	0	6	11	290	0	301	413
5:15 PM	151	2	0	153	0	3	0	3	16	245	0	261	417
5:30 PM	112	0	0	112	1	5	0	6	11	227	0	238	356
5:45 PM	105	0	0	105	1	2	0	3	10	202	0	212	320
Hourly Total	474	2	0	476	5	13	0	18	48	964	0	1012	1506
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	124	0	0	124	1	3	0	4	0	23	0	23	151
6:15 AM	151	0	0	151	0	7	0	7	0	29	0	29	187
6:30 AM	163	0	0	163	0	9	0	9	2	37	0	39	211
6:45 AM	166	0	0	166	0	8	0	8	1	45	0	46	220
Hourly Total	604	0	0	604	1	27	0	28	3	134	0	137	769
7:00 AM	228	0	0	228	0	4	0	4	1	51	0	52	284
7:15 AM	248	0	0	248	1	6	0	7	2	57	0	59	314
7:30 AM	263	0	0	263	2	6	0	8	2	89	0	91	362
7:45 AM	188	1	0	189	1	5	0	6	0	113	0	113	308
Hourly Total	927	1	0	928	4	21	0	25	5	310	0	315	1268
8:00 AM	217	1	0	218	0	5	0	5	2	63	0	65	288
8:15 AM	182	1	0	183	1	10	0	11	2	102	0	104	298
8:30 AM	170	0	0	170	0	7	0	7	4	100	0	104	281
8:45 AM	162	1	0	163	0	1	0	1	1	108	0	109	273
Hourly Total	731	3	0	734	1	23	0	24	9	373	0	382	1140
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	126	2	0	128	1	3	0	4	1	113	0	114	246
11:15 AM	129	1	0	130	0	3	0	3	3	126	0	129	262
11:30 AM	123	0	0	123	0	5	0	5	2	120	0	122	250
11:45 AM	134	0	0	134	2	2	0	4	2	155	0	157	295
Hourly Total	512	3	0	515	3	13	0	16	8	514	0	522	1053
12:00 PM	148	2	0	150	2	3	0	5	2	132	0	134	289
12:15 PM	143	0	0	143	1	5	0	6	1	146	0	147	296
12:30 PM	138	0	0	138	1	4	0	5	8	134	0	142	285
12:45 PM	128	1	0	129	1	6	0	7	3	135	0	138	274
Hourly Total	557	3	0	560	5	18	0	23	14	547	0	561	1144
Grand Total	5465	22	0	5487	32	170	2	202	174	5458	0	5632	11321
Approach %	99.6	0.4	-	-	15.8	84.2	-	-	3.1	96.9	-	-	-
Total %	48.3	0.2	-	48.5	0.3	1.5	-	1.8	1.5	48.2	-	49.7	-
Lights	5128	20	-	5148	30	166	-	196	167	5160	-	5327	10671
% Lights	93.8	90.9	-	93.8	93.8	97.6	-	97.0	96.0	94.5	-	94.6	94.3
Mediums	201	2	-	203	2	4	-	6	7	180	-	187	396
% Mediums	3.7	9.1	-	3.7	6.3	2.4	-	3.0	4.0	3.3	-	3.3	3.5
Articulated Trucks	135	0	-	135	0	0	-	0	0	116	-	116	251
% Articulated Trucks	2.5	0.0	-	2.5	0.0	0.0	-	0.0	0.0	2.1	-	2.1	2.2
Bicycles on Road	1	0	-	1	0	0	-	0	0	2	-	2	3

% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	0.0	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	2	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	-	-	-

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: MR 80 at Shirley Avenue
Site Code:
Start Date: 10/03/2019
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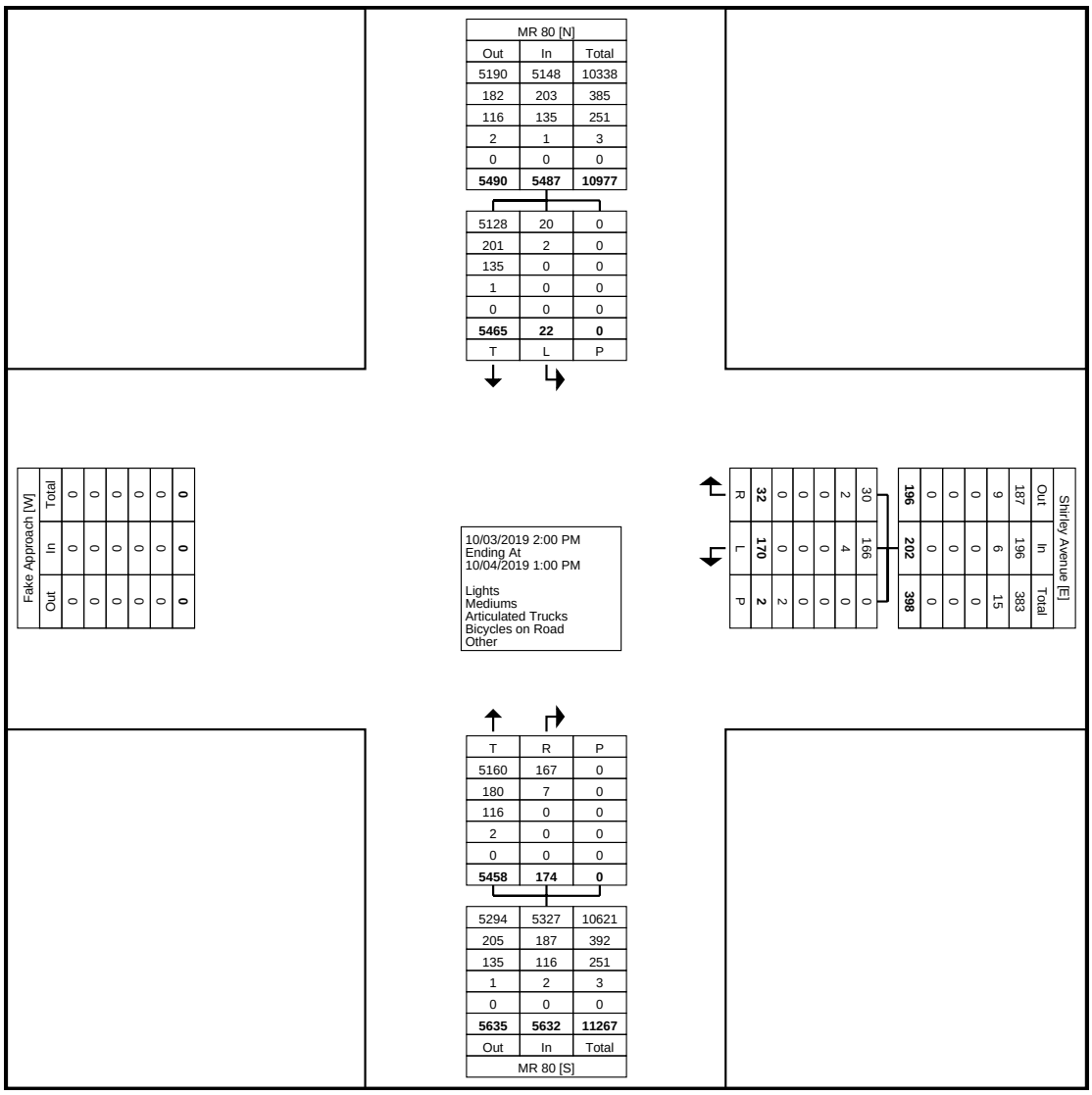


Turning Movement Data Plot

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

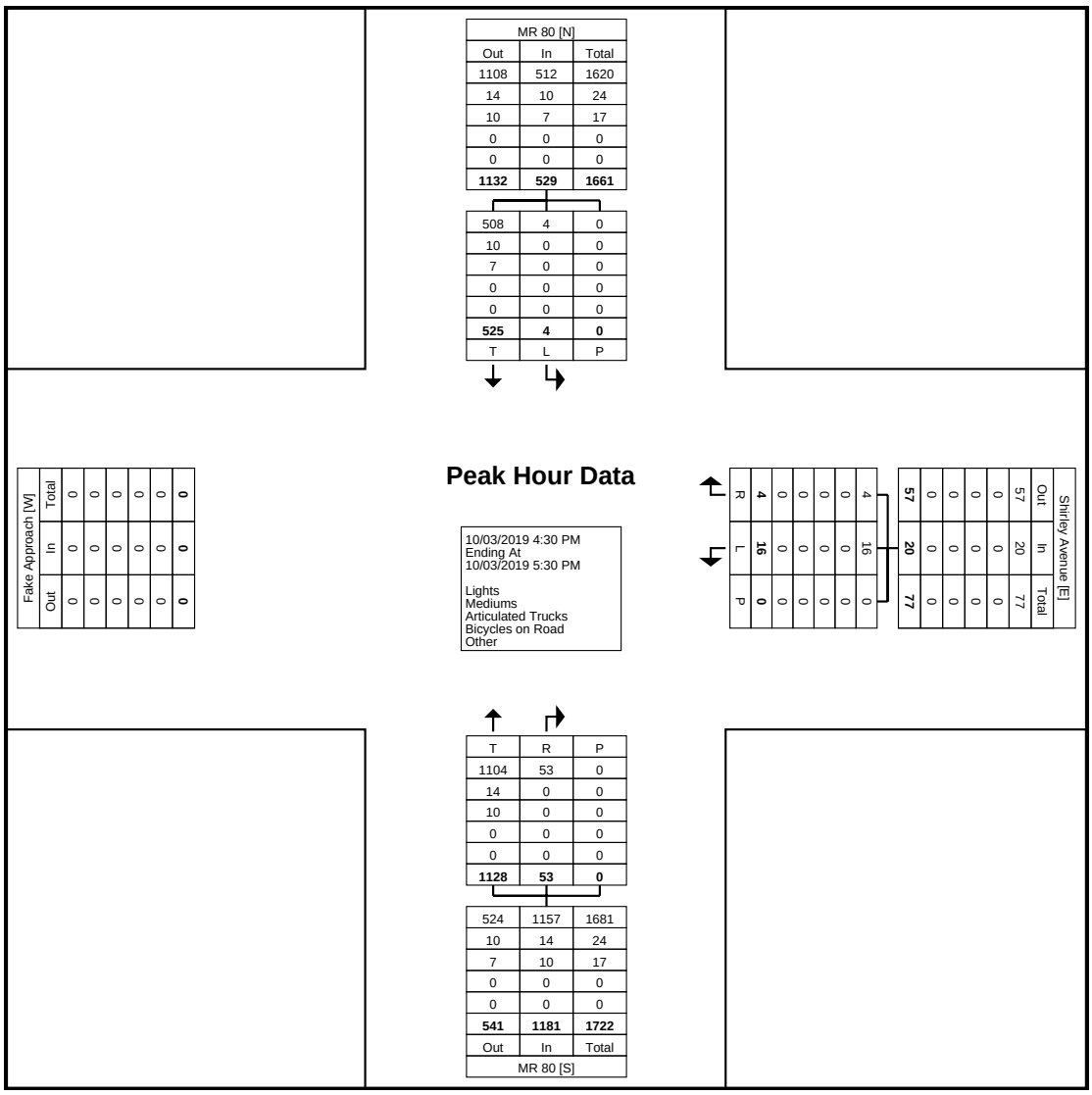
Count Name: MR 80 at Shirley Avenue
Site Code:
Start Date: 10/03/2019

Turning Movement Peak Hour Data (4:30 PM)

Start Time	MR 80 Southbound				Shirley Avenue Westbound				MR 80 Northbound				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
4:30 PM	142	1	0	143	1	3	0	4	10	297	0	307	454
4:45 PM	126	1	0	127	0	7	0	7	16	296	0	312	446
5:00 PM	106	0	0	106	3	3	0	6	11	290	0	301	413
5:15 PM	151	2	0	153	0	3	0	3	16	245	0	261	417
Total	525	4	0	529	4	16	0	20	53	1128	0	1181	1730
Approach %	99.2	0.8	-	-	20.0	80.0	-	-	4.5	95.5	-	-	-
Total %	30.3	0.2	-	30.6	0.2	0.9	-	1.2	3.1	65.2	-	68.3	-
PHF	0.869	0.500	-	0.864	0.333	0.571	-	0.714	0.828	0.949	-	0.946	0.953
Lights	508	4	-	512	4	16	-	20	53	1104	-	1157	1689
% Lights	96.8	100.0	-	96.8	100.0	100.0	-	100.0	100.0	97.9	-	98.0	97.6
Mediums	10	0	-	10	0	0	-	0	0	14	-	14	24
% Mediums	1.9	0.0	-	1.9	0.0	0.0	-	0.0	0.0	1.2	-	1.2	1.4
Articulated Trucks	7	0	-	7	0	0	-	0	0	10	-	10	17
% Articulated Trucks	1.3	0.0	-	1.3	0.0	0.0	-	0.0	0.0	0.9	-	0.8	1.0
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: MR 80 at Shirley Avenue
Site Code:
Start Date: 10/03/2019



Turning Movement Peak Hour Data Plot (4:30 PM)

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

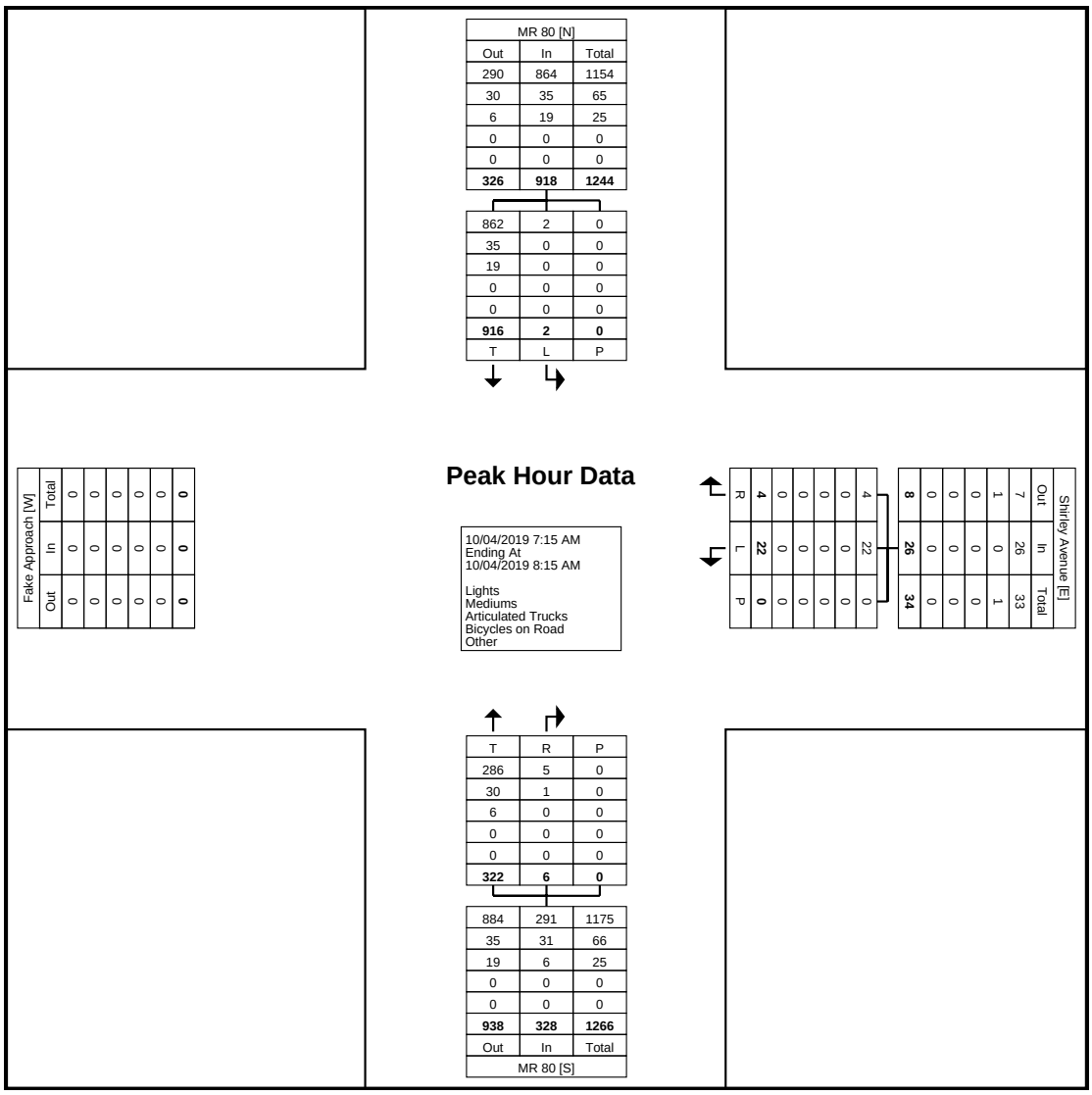
Count Name: MR 80 at Shirley Avenue
Site Code:
Start Date: 10/03/2019

Turning Movement Peak Hour Data (7:15 AM)

Start Time	MR 80 Southbound				Shirley Avenue Westbound				MR 80 Northbound				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
7:15 AM	248	0	0	248	1	6	0	7	2	57	0	59	314
7:30 AM	263	0	0	263	2	6	0	8	2	89	0	91	362
7:45 AM	188	1	0	189	1	5	0	6	0	113	0	113	308
8:00 AM	217	1	0	218	0	5	0	5	2	63	0	65	288
Total	916	2	0	918	4	22	0	26	6	322	0	328	1272
Approach %	99.8	0.2	-	-	15.4	84.6	-	-	1.8	98.2	-	-	-
Total %	72.0	0.2	-	72.2	0.3	1.7	-	2.0	0.5	25.3	-	25.8	-
PHF	0.871	0.500	-	0.873	0.500	0.917	-	0.813	0.750	0.712	-	0.726	0.878
Lights	862	2	-	864	4	22	-	26	5	286	-	291	1181
% Lights	94.1	100.0	-	94.1	100.0	100.0	-	100.0	83.3	88.8	-	88.7	92.8
Mediums	35	0	-	35	0	0	-	0	1	30	-	31	66
% Mediums	3.8	0.0	-	3.8	0.0	0.0	-	0.0	16.7	9.3	-	9.5	5.2
Articulated Trucks	19	0	-	19	0	0	-	0	0	6	-	6	25
% Articulated Trucks	2.1	0.0	-	2.1	0.0	0.0	-	0.0	0.0	1.9	-	1.8	2.0
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: MR 80 at Shirley Avenue
Site Code:
Start Date: 10/03/2019



Turning Movement Peak Hour Data Plot (7:15 AM)

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

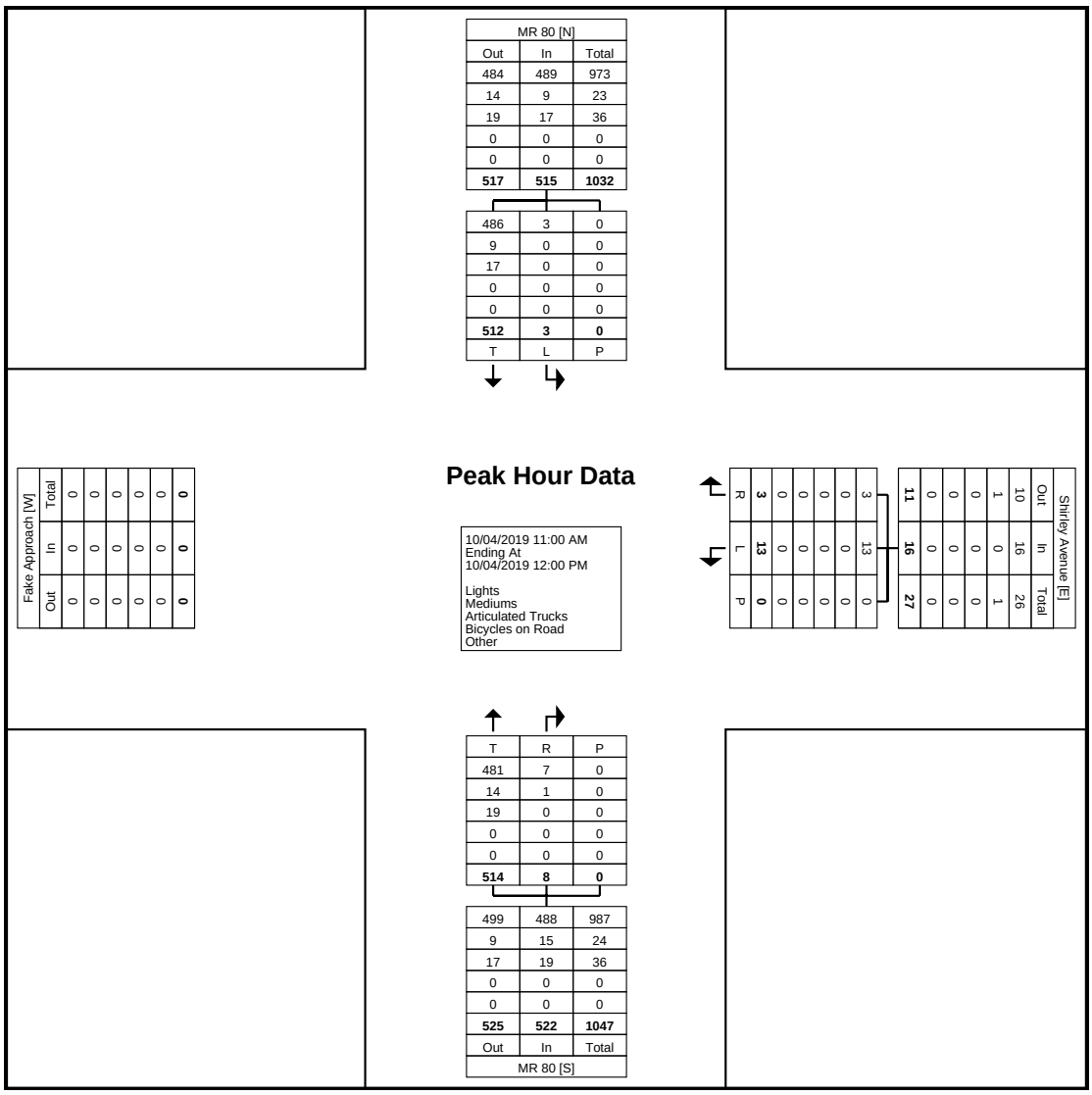
Count Name: MR 80 at Shirley Avenue
Site Code:
Start Date: 10/03/2019

Turning Movement Peak Hour Data (11:00 AM)

Start Time	MR 80 Southbound				Shirley Avenue Westbound				MR 80 Northbound				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
11:00 AM	126	2	0	128	1	3	0	4	1	113	0	114	246
11:15 AM	129	1	0	130	0	3	0	3	3	126	0	129	262
11:30 AM	123	0	0	123	0	5	0	5	2	120	0	122	250
11:45 AM	134	0	0	134	2	2	0	4	2	155	0	157	295
Total	512	3	0	515	3	13	0	16	8	514	0	522	1053
Approach %	99.4	0.6	-	-	18.8	81.3	-	-	1.5	98.5	-	-	-
Total %	48.6	0.3	-	48.9	0.3	1.2	-	1.5	0.8	48.8	-	49.6	-
PHF	0.955	0.375	-	0.961	0.375	0.650	-	0.800	0.667	0.829	-	0.831	0.892
Lights	486	3	-	489	3	13	-	16	7	481	-	488	993
% Lights	94.9	100.0	-	95.0	100.0	100.0	-	100.0	87.5	93.6	-	93.5	94.3
Mediums	9	0	-	9	0	0	-	0	1	14	-	15	24
% Mediums	1.8	0.0	-	1.7	0.0	0.0	-	0.0	12.5	2.7	-	2.9	2.3
Articulated Trucks	17	0	-	17	0	0	-	0	0	19	-	19	36
% Articulated Trucks	3.3	0.0	-	3.3	0.0	0.0	-	0.0	0.0	3.7	-	3.6	3.4
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: MR 80 at Shirley Avenue
Site Code:
Start Date: 10/03/2019



Turning Movement Peak Hour Data Plot (11:00 AM)

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

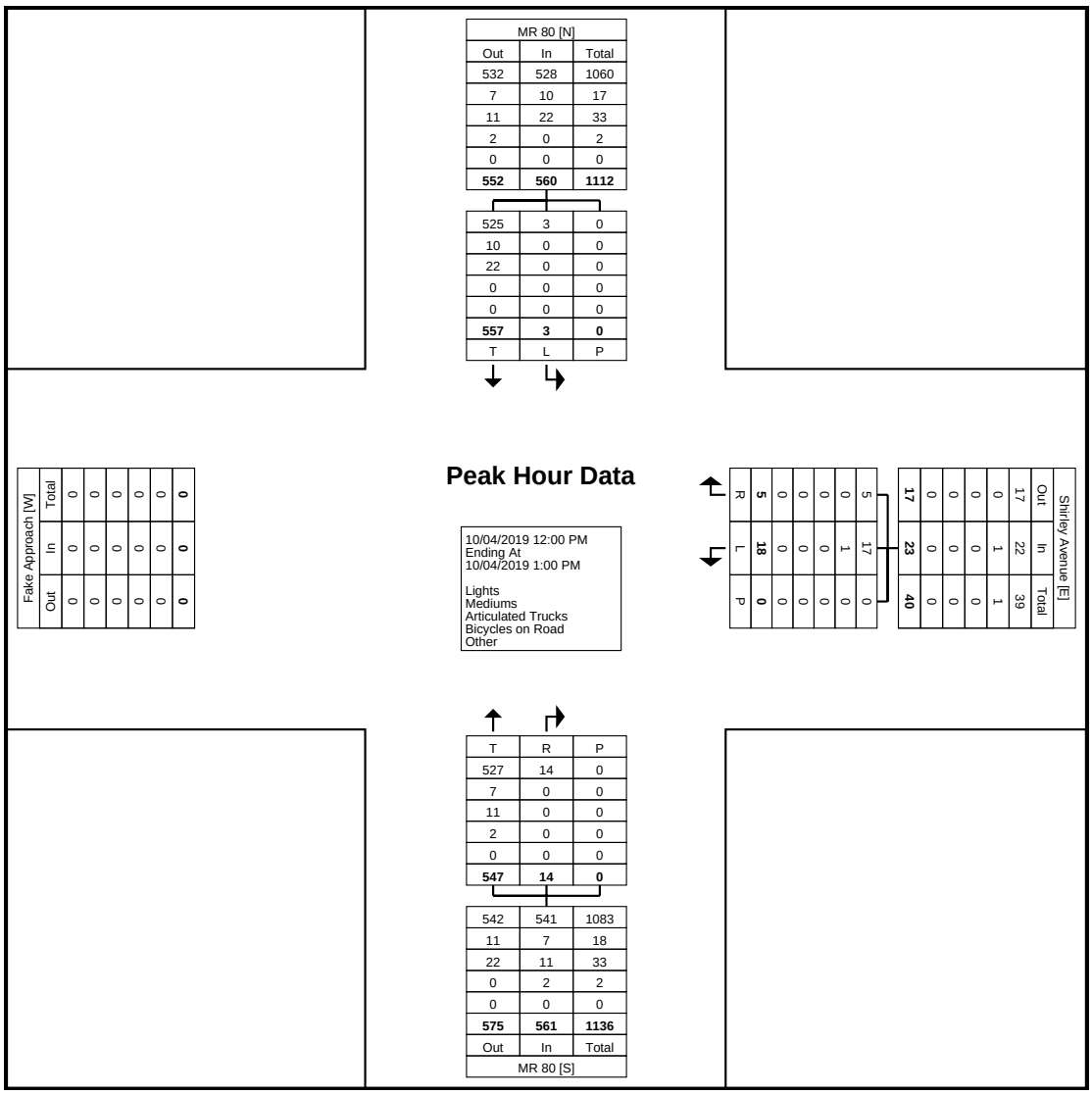
Count Name: MR 80 at Shirley Avenue
Site Code:
Start Date: 10/03/2019

Turning Movement Peak Hour Data (12:00 PM)

Start Time	MR 80 Southbound				Shirley Avenue Westbound				MR 80 Northbound				
	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
12:00 PM	148	2	0	150	2	3	0	5	2	132	0	134	289
12:15 PM	143	0	0	143	1	5	0	6	1	146	0	147	296
12:30 PM	138	0	0	138	1	4	0	5	8	134	0	142	285
12:45 PM	128	1	0	129	1	6	0	7	3	135	0	138	274
Total	557	3	0	560	5	18	0	23	14	547	0	561	1144
Approach %	99.5	0.5	-	-	21.7	78.3	-	-	2.5	97.5	-	-	-
Total %	48.7	0.3	-	49.0	0.4	1.6	-	2.0	1.2	47.8	-	49.0	-
PHF	0.941	0.375	-	0.933	0.625	0.750	-	0.821	0.438	0.937	-	0.954	0.966
Lights	525	3	-	528	5	17	-	22	14	527	-	541	1091
% Lights	94.3	100.0	-	94.3	100.0	94.4	-	95.7	100.0	96.3	-	96.4	95.4
Mediums	10	0	-	10	0	1	-	1	0	7	-	7	18
% Mediums	1.8	0.0	-	1.8	0.0	5.6	-	4.3	0.0	1.3	-	1.2	1.6
Articulated Trucks	22	0	-	22	0	0	-	0	0	11	-	11	33
% Articulated Trucks	3.9	0.0	-	3.9	0.0	0.0	-	0.0	0.0	2.0	-	2.0	2.9
Bicycles on Road	0	0	-	0	0	0	-	0	0	2	-	2	2
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.4	-	0.4	0.2
Bicycles on Crosswalk	-	-	0	-	-	-	0	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: MR 80 at Shirley Avenue
Site Code:
Start Date: 10/03/2019



Turning Movement Peak Hour Data Plot (12:00 PM)

Automatic Counter Tabulations

Street:	**MR 80 (Total)**
Location:	**North of Dominion Drive**
Title:	**Special**
Counter Number:	**Radar**
Start Date of Count:	**Wednesday, June 11, 2014**
Total:	**17457**
AADT:	**15010**
Analyst:	**PG**

Hour	First Quarter	Second Quarter	Third Quarter	Fourth Quarter		Total	Factored Total
0 to 1	19	33	23	13		88	76
1 to 2	18	13	11	6		48	41
2 to 3	10	11	9	9		39	34
3 to 4	4	4	3	8		19	16
4 to 5	15	16	28	43		102	88
5 to 6	62	88	122	123		395	340
6 to 7	161	218	254	224		857	737
7 to 8	237	289	292	281		1099	945
8 to 9	313	297	283	263		1156	994
9 to 10	229	228	221	230		908	781
10 to 11	242	206	230	215		893	768
11 to 12	225	228	230	245		928	798
12 to 13	227	232	265	240		964	829
13 to 14	278	244	261	263		1046	899
14 to 15	257	293	292	261		1103	948
15 to 16	262	322	305	308		1197	1029
16 to 17	369	367	355	363		1454	1250
17 to 18	345	345	371	316		1377	1184
18 to 19	293	270	258	228		1049	902
19 to 20	214	245	221	170		850	731
20 to 21	194	183	193	183		753	647
21 to 22	177	162	140	170		649	558
22 to 23	80	76	69	57		282	242
23 to 24	55	69	46	31		201	173
Total	4286	4439	4482	4250		17457	15010

Monthly Factor:		0.95	**Total:**	17457
Daily Factor:	Wednesday	0.91	**AADT:**	15010
	Thursday	0.9		

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: Jeanne D'Arc
Street @ Municipal Road 80
Site Code: 00812103
Start Date: 07/02/2019

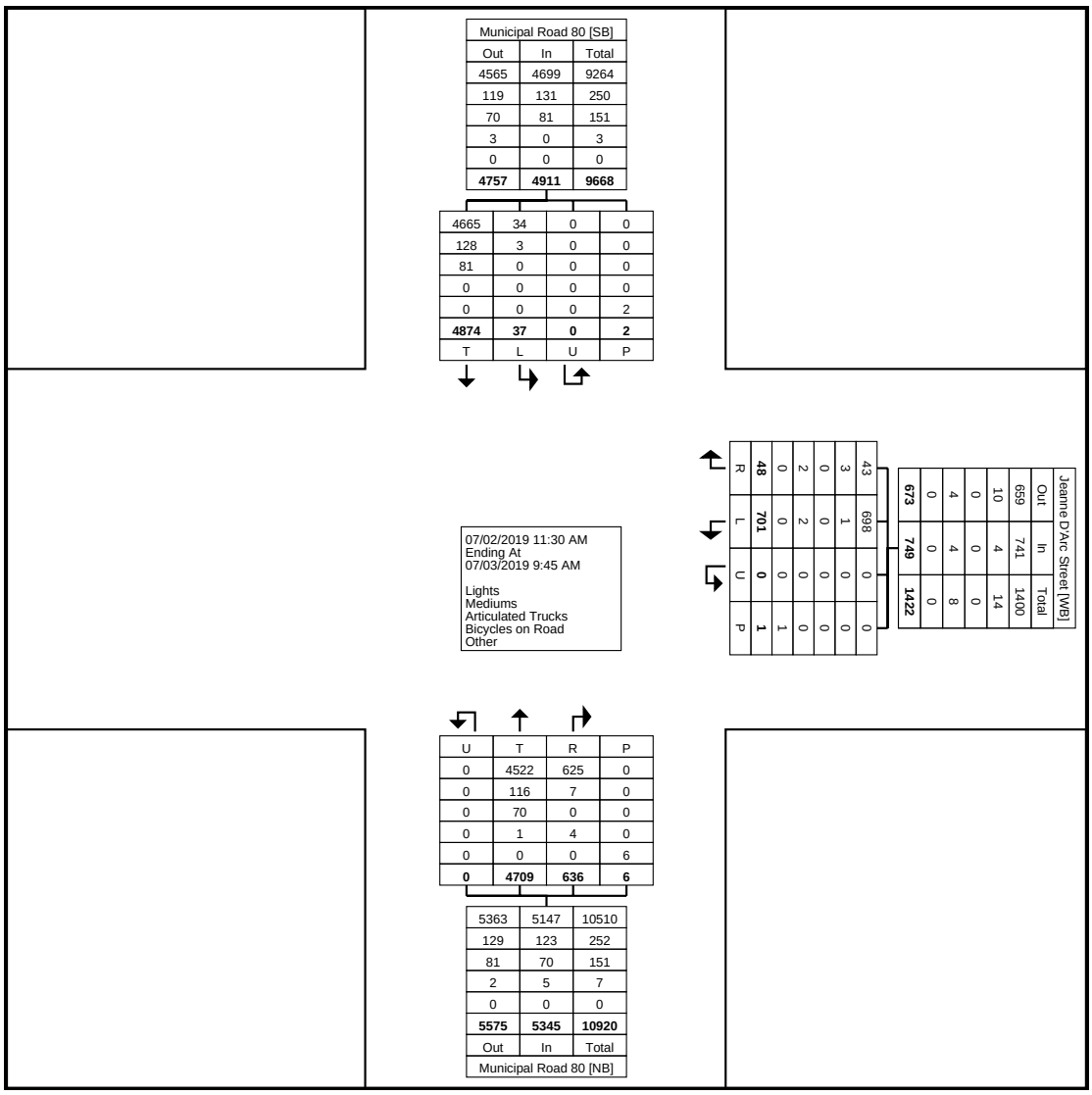
Turning Movement Data

Start Time	Municipal Road 80 Southbound					Jeanne D'Arc Street Westbound					Municipal Road 80 Northbound					
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
11:30 AM	130	1	0	0	131	0	13	0	0	13	18	116	0	0	134	278
11:45 AM	136	4	0	0	140	1	20	0	0	21	18	135	0	0	153	314
Hourly Total	266	5	0	0	271	1	33	0	0	34	36	251	0	0	287	592
12:00 PM	125	1	0	0	126	2	18	0	0	20	7	174	0	0	181	327
12:15 PM	152	2	0	0	154	1	22	0	0	23	24	150	0	0	174	351
12:30 PM	176	1	0	0	177	2	25	0	0	27	15	148	0	0	163	367
12:45 PM	172	0	0	1	172	4	13	0	0	17	13	145	0	0	158	347
Hourly Total	625	4	0	1	629	9	78	0	0	87	59	617	0	0	676	1392
1:00 PM	138	1	0	0	139	1	15	0	0	16	11	136	0	0	147	302
1:15 PM	136	0	0	1	136	1	10	0	0	11	15	119	0	0	134	281
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	274	1	0	1	275	2	25	0	0	27	26	255	0	0	281	583
3:00 PM	165	0	0	0	165	0	14	0	0	14	23	168	0	0	191	370
3:15 PM	113	0	0	0	113	2	17	0	0	19	36	221	0	0	257	389
3:30 PM	132	0	0	0	132	3	16	0	0	19	28	243	0	1	271	422
3:45 PM	153	1	0	0	154	0	18	0	0	18	39	238	0	0	277	449
Hourly Total	563	1	0	0	564	5	65	0	0	70	126	870	0	1	996	1630
4:00 PM	134	2	0	0	136	3	17	0	0	20	34	232	0	0	266	422
4:15 PM	121	3	0	0	124	1	21	0	0	22	39	255	0	1	294	440
4:30 PM	136	3	0	0	139	1	30	0	0	31	44	261	0	2	305	475
4:45 PM	133	1	0	0	134	3	12	0	0	15	47	268	0	1	315	464
Hourly Total	524	9	0	0	533	8	80	0	0	88	164	1016	0	4	1180	1801
5:00 PM	164	3	0	0	167	0	22	0	0	22	49	272	0	0	321	510
5:15 PM	120	2	0	0	122	0	16	0	0	16	37	239	0	0	276	414
5:30 PM	128	4	0	0	132	1	28	0	0	29	31	212	0	0	243	404
5:45 PM	123	1	0	0	124	3	20	0	0	23	30	204	0	0	234	381
Hourly Total	535	10	0	0	545	4	86	0	0	90	147	927	0	0	1074	1709
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	224	1	0	0	225	0	18	0	0	18	3	32	0	0	35	278
6:45 AM	167	1	0	0	168	0	23	0	0	23	5	39	0	1	44	235
Hourly Total	391	2	0	0	393	0	41	0	0	41	8	71	0	1	79	513
7:00 AM	200	0	0	0	200	1	31	0	1	32	6	33	0	0	39	271
7:15 AM	197	0	0	0	197	0	34	0	0	34	5	70	0	0	75	306
7:30 AM	194	1	0	0	195	0	39	0	0	39	6	53	0	0	59	293
7:45 AM	191	0	0	0	191	2	27	0	0	29	5	74	0	0	79	299
Hourly Total	782	1	0	0	783	3	131	0	1	134	22	230	0	0	252	1169
8:00 AM	189	0	0	0	189	1	32	0	0	33	11	74	0	0	85	307
8:15 AM	179	1	0	0	180	3	34	0	0	37	10	74	0	0	84	301
8:30 AM	142	0	0	0	142	3	31	0	0	34	5	83	0	0	88	264
8:45 AM	158	2	0	0	160	3	24	0	0	27	7	90	0	0	97	284
Hourly Total	668	3	0	0	671	10	121	0	0	131	33	321	0	0	354	1156
9:00 AM	108	1	0	0	109	3	14	0	0	17	10	81	0	0	91	217
9:15 AM	138	0	0	0	138	3	27	0	0	30	5	70	0	0	75	243
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	4874	37	0	2	4911	48	701	0	1	749	636	4709	0	6	5345	11005
Approach %	99.2	0.8	0.0	-	-	6.4	93.6	0.0	-	-	11.9	88.1	0.0	-	-	-
Total %	44.3	0.3	0.0	-	44.6	0.4	6.4	0.0	-	6.8	5.8	42.8	0.0	-	48.6	-
Lights	4665	34	0	-	4699	43	698	0	-	741	625	4522	0	-	5147	10587
% Lights	95.7	91.9	-	-	95.7	89.6	99.6	-	-	98.9	98.3	96.0	-	-	96.3	96.2
Mediums	128	3	0	-	131	3	1	0	-	4	7	116	0	-	123	258
% Mediums	2.6	8.1	-	-	2.7	6.3	0.1	-	-	0.5	1.1	2.5	-	-	2.3	2.3
Articulated Trucks	81	0	0	-	81	0	0	0	-	0	0	70	0	-	70	151
% Articulated Trucks	1.7	0.0	-	-	1.6	0.0	0.0	-	-	0.0	0.0	1.5	-	-	1.3	1.4
Bicycles on Road	0	0	0	-	0	2	2	0	-	4	4	1	0	-	5	9
% Bicycles on Road	0.0	0.0	-	-	0.0	4.2	0.3	-	-	0.5	0.6	0.0	-	-	0.1	0.1
Bicycles on Crosswalk	-	-	-	2	-	-	-	-	1	-	-	-	-	0	-	-

% Bicycles on Crosswalk	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	6	-	-
% Pedestrians	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	100.0	-	-

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: Jeanne D'Arc
Street @ Municipal Road 80
Site Code: 00812103
Start Date: 07/02/2019



Turning Movement Data Plot

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

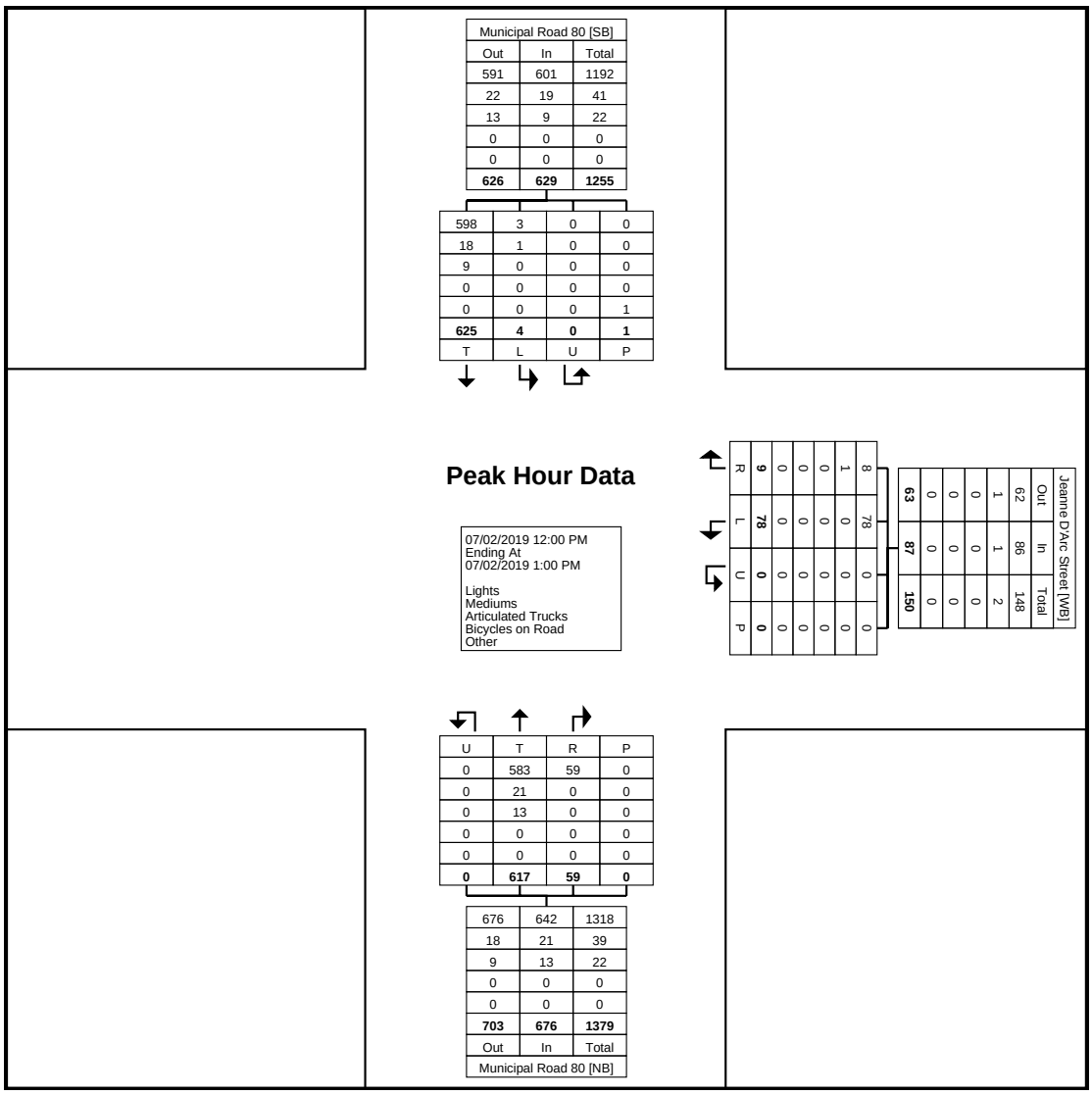
Count Name: Jeanne D'Arc
Street @ Municipal Road 80
Site Code: 00812103
Start Date: 07/02/2019

Turning Movement Peak Hour Data (12:00 PM)

Start Time	Municipal Road 80 Southbound					Jeanne D'Arc Street Westbound					Municipal Road 80 Northbound					
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
12:00 PM	125	1	0	0	126	2	18	0	0	20	7	174	0	0	181	327
12:15 PM	152	2	0	0	154	1	22	0	0	23	24	150	0	0	174	351
12:30 PM	176	1	0	0	177	2	25	0	0	27	15	148	0	0	163	367
12:45 PM	172	0	0	1	172	4	13	0	0	17	13	145	0	0	158	347
Total	625	4	0	1	629	9	78	0	0	87	59	617	0	0	676	1392
Approach %	99.4	0.6	0.0	-	-	10.3	89.7	0.0	-	-	8.7	91.3	0.0	-	-	-
Total %	44.9	0.3	0.0	-	45.2	0.6	5.6	0.0	-	6.3	4.2	44.3	0.0	-	48.6	-
PHF	0.888	0.500	0.000	-	0.888	0.563	0.780	0.000	-	0.806	0.615	0.886	0.000	-	0.934	0.948
Lights	598	3	0	-	601	8	78	0	-	86	59	583	0	-	642	1329
% Lights	95.7	75.0	-	-	95.5	88.9	100.0	-	-	98.9	100.0	94.5	-	-	95.0	95.5
Mediums	18	1	0	-	19	1	0	0	-	1	0	21	0	-	21	41
% Mediums	2.9	25.0	-	-	3.0	11.1	0.0	-	-	1.1	0.0	3.4	-	-	3.1	2.9
Articulated Trucks	9	0	0	-	9	0	0	0	-	0	0	13	0	-	13	22
% Articulated Trucks	1.4	0.0	-	-	1.4	0.0	0.0	-	-	0.0	0.0	2.1	-	-	1.9	1.6
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: Jeanne D'Arc
Street @ Municipal Road 80
Site Code: 00812103
Start Date: 07/02/2019



Turning Movement Peak Hour Data Plot (12:00 PM)

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: Jeanne D'Arc
Street @ Municipal Road 80
Site Code: 00812103
Start Date: 07/02/2019

Turning Movement Peak Hour Data (4:15 PM)

Start Time	Municipal Road 80 Southbound					Jeanne D'Arc Street Westbound					Municipal Road 80 Northbound					
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
4:15 PM	121	3	0	0	124	1	21	0	0	22	39	255	0	1	294	440
4:30 PM	136	3	0	0	139	1	30	0	0	31	44	261	0	2	305	475
4:45 PM	133	1	0	0	134	3	12	0	0	15	47	268	0	1	315	464
5:00 PM	164	3	0	0	167	0	22	0	0	22	49	272	0	0	321	510
Total	554	10	0	0	564	5	85	0	0	90	179	1056	0	4	1235	1889
Approach %	98.2	1.8	0.0	-	-	5.6	94.4	0.0	-	-	14.5	85.5	0.0	-	-	-
Total %	29.3	0.5	0.0	-	29.9	0.3	4.5	0.0	-	4.8	9.5	55.9	0.0	-	65.4	-
PHF	0.845	0.833	0.000	-	0.844	0.417	0.708	0.000	-	0.726	0.913	0.971	0.000	-	0.962	0.926
Lights	532	9	0	-	541	5	84	0	-	89	177	1042	0	-	1219	1849
% Lights	96.0	90.0	-	-	95.9	100.0	98.8	-	-	98.9	98.9	98.7	-	-	98.7	97.9
Mediums	14	1	0	-	15	0	1	0	-	1	1	8	0	-	9	25
% Mediums	2.5	10.0	-	-	2.7	0.0	1.2	-	-	1.1	0.6	0.8	-	-	0.7	1.3
Articulated Trucks	8	0	0	-	8	0	0	0	-	0	0	6	0	-	6	14
% Articulated Trucks	1.4	0.0	-	-	1.4	0.0	0.0	-	-	0.0	0.0	0.6	-	-	0.5	0.7
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	1	0	0	-	1	1
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.6	0.0	-	-	0.1	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Traffic and Transportation Engineering Services
1800 Frobisher Street
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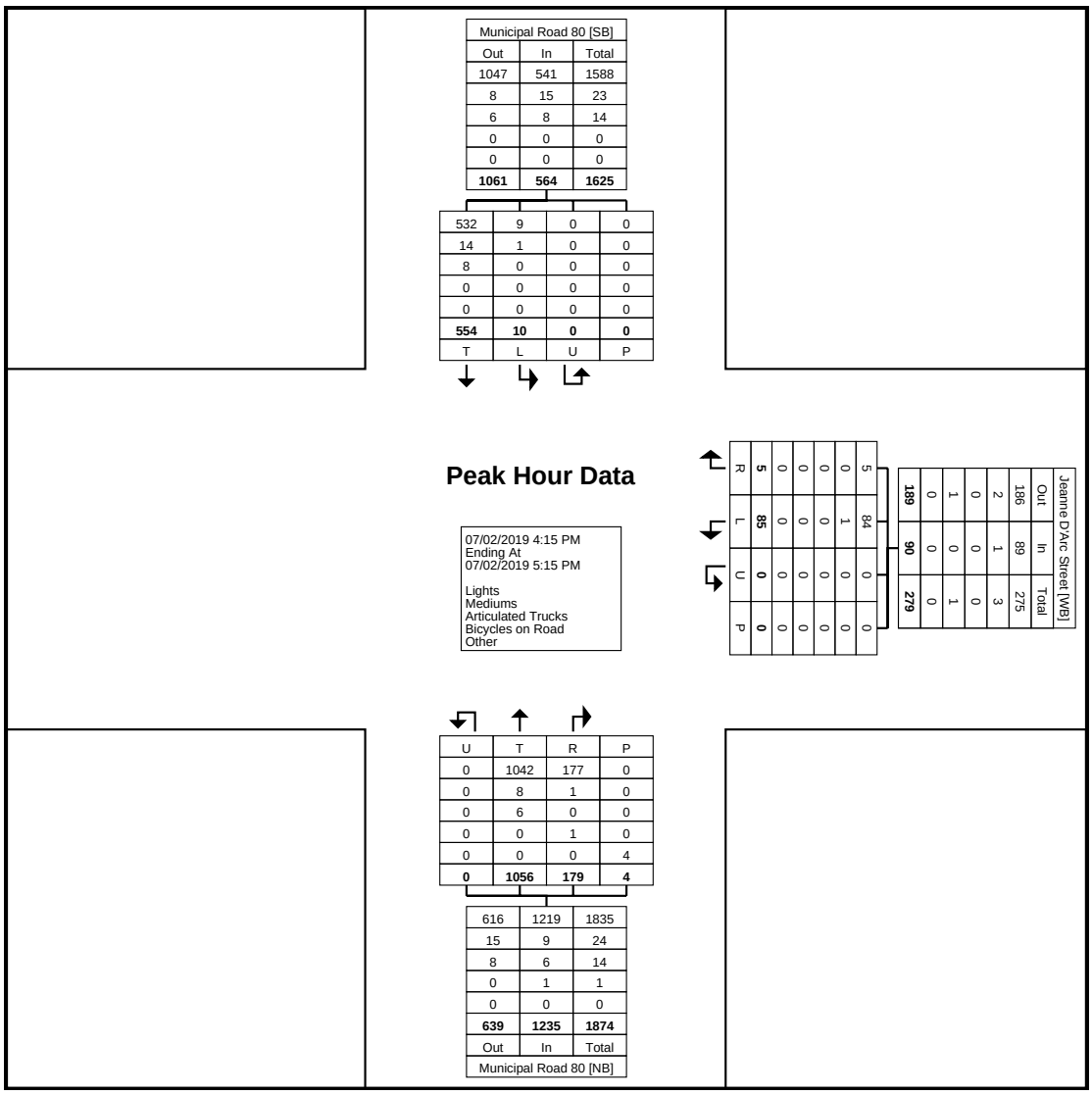
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: Jeanne D'Arc
Street @ Municipal Road 80
Site Code: 00812103
Start Date: 07/02/2019



Turning Movement Peak Hour Data Plot (4:15 PM)

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

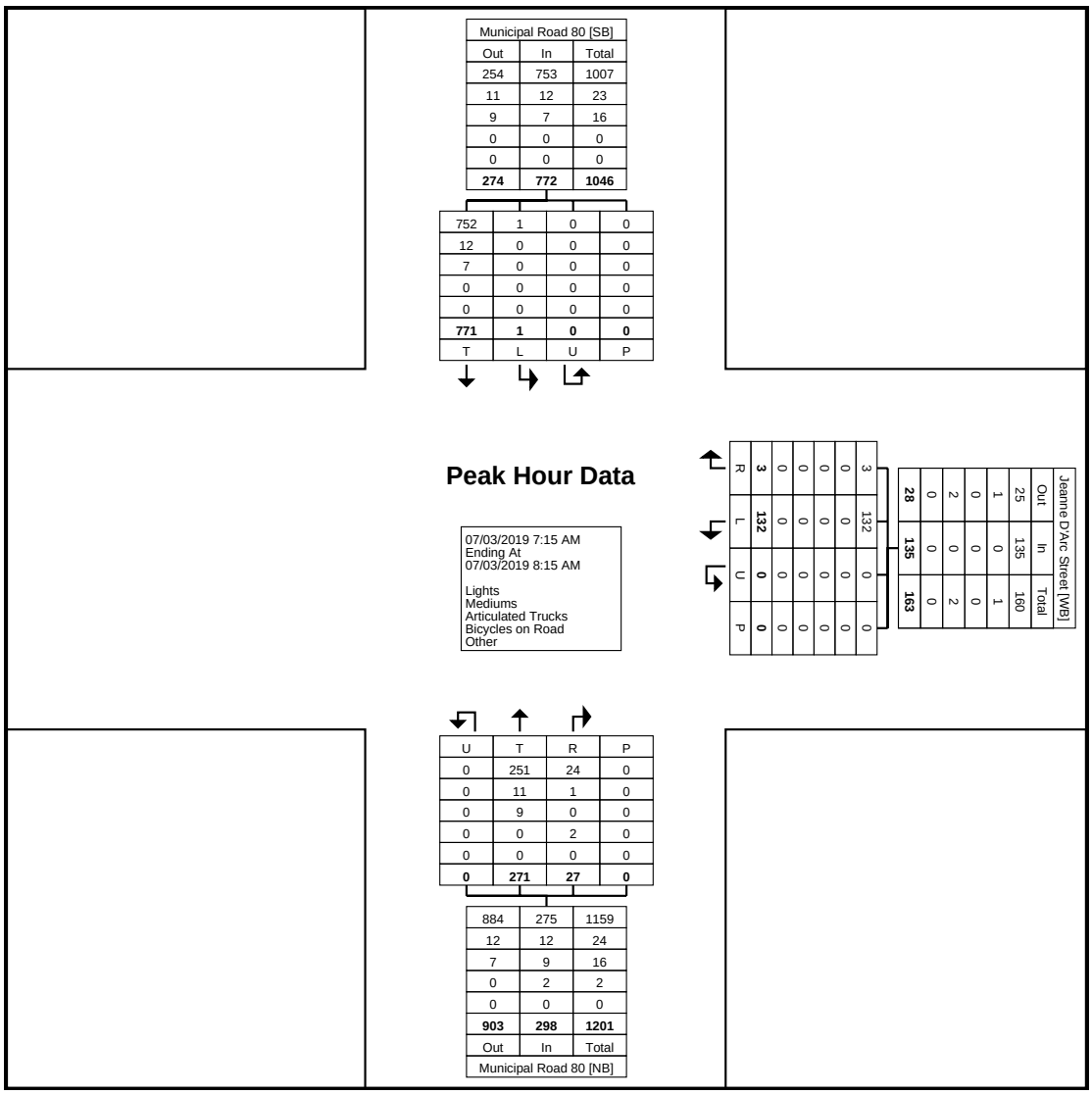
Count Name: Jeanne D'Arc
Street @ Municipal Road 80
Site Code: 00812103
Start Date: 07/02/2019

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Municipal Road 80 Southbound					Jeanne D'Arc Street Westbound					Municipal Road 80 Northbound					
	Thru	Left	U-Turn	Peds	App. Total	Right	Left	U-Turn	Peds	App. Total	Right	Thru	U-Turn	Peds	App. Total	Int. Total
7:15 AM	197	0	0	0	197	0	34	0	0	34	5	70	0	0	75	306
7:30 AM	194	1	0	0	195	0	39	0	0	39	6	53	0	0	59	293
7:45 AM	191	0	0	0	191	2	27	0	0	29	5	74	0	0	79	299
8:00 AM	189	0	0	0	189	1	32	0	0	33	11	74	0	0	85	307
Total	771	1	0	0	772	3	132	0	0	135	27	271	0	0	298	1205
Approach %	99.9	0.1	0.0	-	-	2.2	97.8	0.0	-	-	9.1	90.9	0.0	-	-	-
Total %	64.0	0.1	0.0	-	64.1	0.2	11.0	0.0	-	11.2	2.2	22.5	0.0	-	24.7	-
PHF	0.978	0.250	0.000	-	0.980	0.375	0.846	0.000	-	0.865	0.614	0.916	0.000	-	0.876	0.981
Lights	752	1	0	-	753	3	132	0	-	135	24	251	0	-	275	1163
% Lights	97.5	100.0	-	-	97.5	100.0	100.0	-	-	100.0	88.9	92.6	-	-	92.3	96.5
Mediums	12	0	0	-	12	0	0	0	-	0	1	11	0	-	12	24
% Mediums	1.6	0.0	-	-	1.6	0.0	0.0	-	-	0.0	3.7	4.1	-	-	4.0	2.0
Articulated Trucks	7	0	0	-	7	0	0	0	-	0	0	9	0	-	9	16
% Articulated Trucks	0.9	0.0	-	-	0.9	0.0	0.0	-	-	0.0	0.0	3.3	-	-	3.0	1.3
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	2	0	0	-	2	2
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	7.4	0.0	-	-	0.7	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic and Transportation Engineering Services
1800 Frobisher Street
PO Box 5000, STN A
Sudbury, Ontario, Canada P3A 5P3
705-674-4455

Count Name: Jeanne D'Arc
Street @ Municipal Road 80
Site Code: 00812103
Start Date: 07/02/2019



Turning Movement Peak Hour Data Plot (7:15 AM)

APPENDIX B

Collision Data
provided by City Traffic Office

Location	Initial Impact Type	Accident No.	Vehicle 1 Type	Vehicle 2 Type	Apparent Driver 1 Action
Municipal Road 80 @ Shirley Avenue (144034)	07 - SMV other	17-012590	01 - Automobile, station wagon		10 - Lost control
Municipal Road 80 @ Shirley Avenue (144034)	03 - Rear end	14044288			
Municipal Road 80 @ Shirley Avenue (144034)	04 - Sideswipe	14036994			

Driver One Disobey Signal	Apparent Driver 2 Action	Driver Two Disobey Signal	Accident Date	Accident Year	Pedestrian 2 Action	Pedestrian 1 Action	Accident Time
Unchecked		Unchecked	26/03/2017	2017			10:10
Unchecked		Unchecked	24/09/2014	2014			16:00
Unchecked		Unchecked	13/08/2014	2014			6:20

Vehicle 1 First Event	Vehicle 1 Second Event	Initial Direction Of Travel One	Initial Direction Of Travel Two	Vehicle 1 Third Event	Vehicle 1 Manoeuver
21 - Skidding/sliding	54 - Pole (sign, parking meter)	North	None	60 - Ditch	02 - Slowing or stopping
		South	South		
		South	North		

Vehicle 2 Manoeuver	Accident Location	Impact Location	Road 1 Condition	Thru Lane No	Environment Condition 1	Environment Condition 2	Light
	02 - Intersection related	99 - Other	02 - Poor	0	04 - Freezing Rain		01 - Daylight
00 - Unknown	02 - Intersection related	02 - Thru lane	01 - Good	0	01 - Clear		01 - Daylight
00 - Unknown	02 - Intersection related	02 - Thru lane	01 - Good	0	02 - Rain		01 - Daylight

Traffic Control	Traffic Control Condition	Road Jurisdiction	Road 2 Condition	Classification Of Accident	Road 1 Surface Condition	Last Edited By
02 - Stop sign	01 - Functioning	01 - Municipal (excl. Twp. Rd.)	02 - Poor	03 - P.D. only	06 - Ice	tes
01 - Traffic signal	01 - Functioning		01 - Good		01 - Dry	tes
02 - Stop sign	01 - Functioning		01 - Good		02 - Wet	tes
		3				

Road 2 Surface Condition	Validated	Collision Type
06 - Ice	Checked	PDO
01 - Dry	Checked	PDO
02 - Wet	Checked	PDO

APPENDIX C

School Traffic Counts
by Tranplan Associates

a) Ecole Jean Paul II (Val Caron)
b) Ecoles Ste Therese &St Joseph
c) Ecole Notre Dame and Total of Three Existing Schools

Jean Paul II Elementary School, Val Caron
Date: October 3, 4, 7, 8, 2019

Tranplan

TIME	Cars In	Cars Out	Schoolbuses In	Schoolbuses Out	Bicycles In	Bicycles Out	Pedestrians In	Pedestrians Out	TOTAL (15 min)	TOTAL (60 min)
Oct 4&8, 2019										
7:30 - 7:45	15	3	0	0	0	0	0	0	18	
7:45 - 8:00	44	4	1	1	1	0	1	0	52	
8:00 - 8:15	37	14	0	0	1	0	0	0	52	
8:15 - 8:30	29	21	1	0	6	0	14	0	71	193
8:30 - 8:45	43	41	14	14	4	0	6	0	122	297
8:45 - 9:00	10	16	1	2	0	0	0	0	29	274
AM Pk Hr	**153**	**80**	**16**	**15**	**12**	**0**	**21**	**0**	**7:45 - 8:45 am**	
11:00 - 11:15	4	5	0	0	0	0	0	0	9	
11:15 - 11:30	5	3	0	0	0	0	2	0	10	
11:30 - 11:45	7	7	1	0	0	0	0	0	15	
11:45 - 12:00	1	1	1	1	0	0	0	0	4	38
12:00 - 12:15	2	3	0	0	0	0	0	1	6	35
12:15 - 12:30	2	6	0	0	0	0	0	0	8	33
12:30 - 12:45	4	3	0	0	0	0	0	0	7	25
12:45 - 1:00	6	2	0	0	0	0	0	0	8	29
Oct 3&7, 2019										
2:30 - 2:45	5	0	0	0	0	1	0	1	7	
2:45 - 3:00	28	3	0	0	0	4	1	4	40	
3:00 - 3:15	21	43	9	3	0	4	0	17	97	
3:15 - 3:30	6	24	7	10	0	0	0	2	49	193
3:30 - 3:45	11	33	1	3	0	1	0	0	49	235
3:45 - 4:00	7	20	0	0	0	0	0	0	27	222
4:00 - 4:15	8	12	0	0	0	0	0	0	20	145
4:15 - 4:30	7	8	0	0	0	0	0	0	15	111
4:30 - 4:45	10	12	0	0	0	0	0	0	22	84
4:45 - 5:00	7	12	0	0	0	0	1	1	21	78
5:00 - 5:15	2	9	0	0	0	0	0	1	12	70
5:15 - 5:30	1	6	0	0	0	0	0	0	7	62
PM Pk Hr	**66**	**103**	**17**	**16**	**0**	**9**	**1**	**23**	**2:45 - 3:45 pm**	

Ecole Ste Therese, Val Therese (Grades 4-8 plus Day Care)
Date: October 4, 2019 Tranplan

TIME	Cars In	Cars Out	Schoolbuses In	Schoolbuses Out	Bicycles In	Bicycles Out	Pedestrians In	Pedestrians Out	TOTAL (15 min)	TOTAL (60 min)
7:45 - 8:00	3	1	0	0	0	0	0	0	4	
8:00 - 8:15	2	1	0	0	2	0	0	0	5	
8:15 - 8:30	7	7	0	0	0	0	11	0	25	
8:30 - 8:45	14	14	5	5	0	0	2	0	40	74
8:45 - 9:00	3	3	0	0	0	0	0	0	6	76
AM Pk Hr	**26**	**25**	**5**	**5**	**2**	**0**	**13**	**0**	**8:00 - 9:00 am**	
2:30 - 2:45	1	0	0	0	0	0	0	0	1	
2:45 - 3:00	1	1	0	0	0	0	0	0	2	
3:00 - 3:15	16	0	0	0	0	0	0	0	16	
3:15 - 3:30	3	19	5	5	0	0	0	0	32	51
3:30 - 3:45	0	1	0	0	0	0	0	0	1	51
3:45 - 4:00	2	4	0	0	0	0	0	0	6	55
PM Pk Hr	**21**	**24**	**5**	**5**	**0**	**0**	**0**	**0**	**3:00 - 4:00 pm**	

Ecole St Joseph, Hanmer
Date: October 7, 2019 Tranplan

TIME	Cars In	Cars Out	Schoolbuses In	Schoolbuses Out	Bicycles In	Bicycles Out	Pedestrians In	Pedestrians Out	TOTAL (15 min)	TOTAL (60 min)
7:30 - 7:45	12	7	0	0	0	0	0	0	19	
7:45 - 8:00	5	2	0	0	0	0	0	0	7	
8:00 - 8:15	3	3	0	0	0	0	0	0	6	
8:15 - 8:30	15	10	1	1	0	0	2	0	29	61
8:30 - 8:45	20	21	5	5	0	0	0	0	51	93
8:45 - 9:00	0	4	0	0	0	0	1	0	5	91
AM Pk Hr	**43**	**36**	**6**	**6**	**0**	**0**	**2**	**0**	**7:45 - 8:45 am**	
2:30 - 2:45	0	0	0	0	0	0	0	0	0	
2:45 - 3:00	5	0	1	0	0	0	0	0	6	
3:00 - 3:15	14	15	2	2	0	0	1	1	35	
3:15 - 3:30	0	3	2	3	0	0	0	0	8	49
3:30 - 3:45	1	4	0	0	0	0	0	0	5	54
3:45 - 4:00	0	4	0	0	0	0	0	0	4	52
4:00 - 4:15	0	2	0	0	0	0	0	0	2	19
PM Pk Hr	**20**	**22**	**5**	**5**	**0**	**0**	**1**	**1**	**2:45 - 3:45 pm**	

Ecole Notre Dame, Hanmer
Date: October 8, 2019 Tranplan

TIME	Cars In	Cars Out	Schoolbuses In	Schoolbuses Out	Bicycles In	Bicycles Out	Pedestrians In	Pedestrians Out	TOTAL (15 min)	TOTAL (60 min)
7:45 - 8:00	16	4	0	0	0	0	0	0	20	
8:00 - 8:15	8	0	0	0	0	0	0	0	8	
8:15 - 8:30	10	8	0	0	3	0	1	0	22	
8:30 - 8:45	23	20	8	8	6	0	8	0	73	123
8:45 - 9:00	11	10	1	1	0	0	0	0	23	126
9:00 - 9:15	5	3	0	0	0	0	0	0	8	126
9:15 - 9:30	1	4	0	0	0	0	0	0	5	109
AM Pk Hr	**52**	**38**	**9**	**9**	**9**	**0**	**9**	**0**	**8:00 - 9:00 am**	
2:00 - 2:15	3	0	0	0	0	0	0	0	3	
2:15 - 2:30	5	4	1	0	0	0	0	0	10	
2:30 - 2:45	7	6	6	6	0	4	0	13	42	
2:45 - 3:00	13	4	1	0	0	0	0	0	18	73
3:00 - 3:15	7	17	6	6	2	7	0	7	52	122
3:15 - 3:30	1	10	1	3	0	0	0	0	15	127
3:30 - 3:45	6	11	0	0	0	0	0	0	17	102
PM Pk Hr	**28**	**37**	**14**	**15**	**2**	**11**	**0**	**20**	**2:30 - 3:30 pm**	

Ecole Ste Therese+Ecole St Joseph+Ecole Notre Dame

TIME	Cars In	Cars Out	Schoolbuses In	Schoolbuses Out	Bicycles In	Bicycles Out	Pedestrians In	Pedestrians Out	TOTAL (15 min)	TOTAL (60 min)
7:45 - 8:00	24	7	0	0	0	0	0	0	31	
8:00 - 8:15	13	4	0	0	2	0	0	0	19	
8:15 - 8:30	32	25	1	1	3	0	14	0	76	
8:30 - 8:45	57	55	18	18	6	0	10	0	164	290
8:45 - 9:00	14	17	1	1	0	0	1	0	34	293
AM Pk Hr	**116**	**101**	**20**	**20**	**11**	**0**	**25**	**0**	**8:00 - 9:00 am**	
2:30 - 2:45	8	6	6	6	0	4	0	13	43	
2:45 - 3:00	19	5	2	0	0	0	0	0	26	
3:00 - 3:15	37	32	8	8	2	7	1	8	103	
3:15 - 3:30	4	32	8	11	0	0	0	0	55	227
3:30 - 3:45	7	16	0	0	0	0	0	0	23	207
3:45 - 4:00	2	8	0	0	0	0	0	0	10	191
PM Pk Hr	**68**	**75**	**24**	**25**	**2**	**11**	**1**	**21**	**2:30 - 3:30 pm**	

APPENDIX D

MR 80 / Shirley Avenue
Intersection Capacity Analysis
Synchro Reports

a) Existing Conditions 2019
b) Background Traffic 2026
c) Total Traffic 2026 (Unsignalized)
d) Total Traffic 2026 (Signalized)

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	22	4	322	6	2	916
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	24	4	350	7	2	996
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	855	178			357	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	855	178			357	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	99			100	
cM capacity (veh/h)	297	834			1199	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	28	233	123	2	498	498
Volume Left	24	0	0	2	0	0
Volume Right	4	0	7	0	0	0
cSH	329	1700	1700	1199	1700	1700
Volume to Capacity	0.09	0.14	0.07	0.00	0.29	0.29
Queue Length 95th (m)	2.2	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	17.0	0.0	0.0	8.0	0.0	0.0
Lane LOS	C			A		
Approach Delay (s)	17.0	0.0		0.0		
Approach LOS	C					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	16	4	1128	53	4	525
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	4	1226	58	4	571
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1549	642			1284	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1549	642			1284	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	83	99			99	
cM capacity (veh/h)	104	417			536	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	22	817	466	4	285	285
Volume Left	17	0	0	4	0	0
Volume Right	4	0	58	0	0	0
cSH	122	1700	1700	536	1700	1700
Volume to Capacity	0.18	0.48	0.27	0.01	0.17	0.17
Queue Length 95th (m)	5.0	0.0	0.0	0.2	0.0	0.0
Control Delay (s)	40.7	0.0	0.0	11.8	0.0	0.0
Lane LOS	E			B		
Approach Delay (s)	40.7	0.0		0.1		
Approach LOS	E					

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	24	4	357	7	2	1017
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	4	388	8	2	1105
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	949	198			396	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	949	198			396	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	90	99			100	
cM capacity (veh/h)	258	810			1159	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	30	259	137	2	553	553
Volume Left	26	0	0	2	0	0
Volume Right	4	0	8	0	0	0
cSH	286	1700	1700	1159	1700	1700
Volume to Capacity	0.11	0.15	0.08	0.00	0.33	0.33
Queue Length 95th (m)	2.8	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	19.1	0.0	0.0	8.1	0.0	0.0
Lane LOS	C			A		
Approach Delay (s)	19.1	0.0		0.0		
Approach LOS	C					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	18	4	1252	59	4	583
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	4	1361	64	4	634
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1718	712			1425	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1718	712			1425	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	76	99			99	
cM capacity (veh/h)	80	375			473	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	24	907	518	4	317	317
Volume Left	20	0	0	4	0	0
Volume Right	4	0	64	0	0	0
cSH	93	1700	1700	473	1700	1700
Volume to Capacity	0.26	0.53	0.30	0.01	0.19	0.19
Queue Length 95th (m)	7.5	0.0	0.0	0.2	0.0	0.0
Control Delay (s)	56.4	0.0	0.0	12.7	0.0	0.0
Lane LOS	F			B		
Approach Delay (s)	56.4	0.0		0.1		
Approach LOS	F					

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	58	12	47	24	18	4	73	357	7	2	1017	90
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	63	13	51	26	20	4	79	388	8	2	1105	98
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1526	1713	602	1165	1758	198	1203			396		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1526	1713	602	1165	1758	198	1203			396		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	83	88	75	73	99	86			100		
cM capacity (veh/h)	57	77	443	103	72	810	576			1159		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	76	51	50	79	259	137	2	737	466
Volume Left	63	0	26	79	0	0	2	0	0
Volume Right	0	51	4	0	0	8	0	0	98
cSH	60	443	94	576	1700	1700	1159	1700	1700
Volume to Capacity	1.28	0.12	0.53	0.14	0.15	0.08	0.00	0.43	0.27
Queue Length 95th (m)	51.8	3.1	19.0	3.8	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	324.1	14.2	79.8	12.3	0.0	0.0	8.1	0.0	0.0
Lane LOS	F	B	F	B			A		
Approach Delay (s)	199.6		79.8	2.0			0.0		
Approach LOS	F		F						

Intersection Summary				
Average Delay	16.3			
Intersection Capacity Utilization	54.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	68	14	55	17	10	7	42	946	29	2	635	51
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	15	60	18	11	8	46	1028	32	2	690	55
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1341	1873	373	1552	1885	530	746			1060		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1341	1873	373	1552	1885	530	746			1060		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	19	77	90	66	84	98	95			100		
cM capacity (veh/h)	91	67	625	55	66	494	858			653		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	89	60	37	46	686	374	2	460	286
Volume Left	74	0	18	46	0	0	2	0	0
Volume Right	0	60	8	0	0	32	0	0	55
cSH	86	625	72	858	1700	1700	653	1700	1700
Volume to Capacity	1.04	0.10	0.52	0.05	0.40	0.22	0.00	0.27	0.17
Queue Length 95th (m)	47.9	2.5	17.1	1.3	0.0	0.0	0.1	0.0	0.0
Control Delay (s)	195.3	11.4	99.7	9.4	0.0	0.0	10.5	0.0	0.0
Lane LOS	F	B	F	A			B		
Approach Delay (s)	121.5		99.7	0.4			0.0		
Approach LOS	F		F						

Intersection Summary				
Average Delay	10.9			
Intersection Capacity Utilization	49.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	19	4	16	18	2	4	10	1252	59	4	583	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	4	17	20	2	4	11	1361	64	4	634	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1356	2095	323	1760	2069	712	646			1425		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1356	2095	323	1760	2069	712	646			1425		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	80	91	97	59	96	99	99			99		
cM capacity (veh/h)	102	50	673	48	52	375	936			473		

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	25	17	26	11	907	518	4	422	223
Volume Left	21	0	20	11	0	0	4	0	0
Volume Right	0	17	4	0	0	64	0	0	12
cSH	86	673	57	936	1700	1700	473	1700	1700
Volume to Capacity	0.29	0.03	0.46	0.01	0.53	0.30	0.01	0.25	0.13
Queue Length 95th (m)	8.6	0.6	14.0	0.3	0.0	0.0	0.2	0.0	0.0
Control Delay (s)	62.8	10.5	113.8	8.9	0.0	0.0	12.7	0.0	0.0
Lane LOS	F	B	F	A			B		
Approach Delay (s)	41.3		113.8	0.1			0.1		
Approach LOS	E		F						

Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	51.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	58	12	47	24	18	4	73	357	7	2	1017	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.99		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1789	1583		1796		1770	3528		1770	3496	
Flt Permitted		0.79	1.00		0.80		0.22	1.00		0.52	1.00	
Satd. Flow (perm)		1463	1583		1468		403	3528		966	3496	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	13	51	26	20	4	79	388	8	2	1105	98
RTOR Reduction (vph)	0	0	46	0	4	0	0	1	0	0	5	0
Lane Group Flow (vph)	0	76	5	0	46	0	79	395	0	2	1198	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		8.9	8.9		8.9		69.6	69.6		69.6	69.6	
Effective Green, g (s)		8.9	8.9		8.9		69.6	69.6		69.6	69.6	
Actuated g/C Ratio		0.10	0.10		0.10		0.79	0.79		0.79	0.79	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		147	159		148		317	2775		760	2749	
v/s Ratio Prot								0.11			c0.34	
v/s Ratio Perm		c0.05	0.00		0.03		0.20			0.00		
v/c Ratio		0.52	0.03		0.31		0.25	0.14		0.00	0.44	
Uniform Delay, d1		37.8	35.9		37.0		2.5	2.3		2.0	3.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.1	0.1		1.2		1.9	0.1		0.0	0.5	
Delay (s)		40.8	36.0		38.2		4.4	2.4		2.0	3.6	
Level of Service		D	D		D		A	A		A	A	
Approach Delay (s)		38.9			38.2			2.7			3.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	88.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	68	14	55	17	10	7	42	946	29	2	635	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.97		1.00	1.00		1.00	0.99	
Flt Protected		0.96	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1788	1583		1765		1770	3523		1770	3500	
Flt Permitted		0.74	1.00		0.82		0.37	1.00		0.25	1.00	
Satd. Flow (perm)		1372	1583		1477		682	3523		475	3500	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	15	60	18	11	8	46	1028	32	2	690	55
RTOR Reduction (vph)	0	0	53	0	7	0	0	2	0	0	5	0
Lane Group Flow (vph)	0	89	7	0	30	0	46	1058	0	2	740	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		9.7	9.7		9.7		69.1	69.1		69.1	69.1	
Effective Green, g (s)		9.7	9.7		9.7		69.1	69.1		69.1	69.1	
Actuated g/C Ratio		0.11	0.11		0.11		0.78	0.78		0.78	0.78	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		150	173		161		531	2741		370	2724	
v/s Ratio Prot								c0.30			0.21	
v/s Ratio Perm		c0.06	0.00		0.02		0.07			0.00		
v/c Ratio		0.59	0.04		0.19		0.09	0.39		0.01	0.27	
Uniform Delay, d1		37.7	35.4		36.0		2.3	3.1		2.2	2.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.2	0.1		0.6		0.3	0.4		0.0	0.2	
Delay (s)		43.8	35.5		36.5		2.7	3.5		2.2	3.0	
Level of Service		D	D		D		A	A		A	A	
Approach Delay (s)		40.5			36.5			3.5			3.0	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	88.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	4	16	18	2	4	10	1252	59	4	583	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	
Frt		1.00	0.85		0.98		1.00	0.99		1.00	1.00	
Flt Protected		0.96	1.00		0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1788	1583		1756		1770	3515		1770	3529	
Flt Permitted		0.78	1.00		0.76		0.41	1.00		0.17	1.00	
Satd. Flow (perm)		1458	1583		1385		757	3515		323	3529	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	4	17	20	2	4	11	1361	64	4	634	12
RTOR Reduction (vph)	0	0	16	0	4	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	25	1	0	22	0	11	1423	0	4	645	0
Turn Type	Perm		Perm	Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)		4.7	4.7		4.7		75.0	75.0		75.0	75.0	
Effective Green, g (s)		4.7	4.7		4.7		75.0	75.0		75.0	75.0	
Actuated g/C Ratio		0.05	0.05		0.05		0.84	0.84		0.84	0.84	
Clearance Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)		3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		76	83		73		633	2939		270	2951	
v/s Ratio Prot								c0.40			0.18	
v/s Ratio Perm		c0.02	0.00		0.02		0.01			0.01		
v/c Ratio		0.33	0.01		0.30		0.02	0.48		0.01	0.22	
Uniform Delay, d1		41.0	40.3		40.9		1.2	2.0		1.2	1.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.5	0.1		2.4		0.1	0.6		0.1	0.2	
Delay (s)		43.5	40.3		43.3		1.3	2.6		1.3	1.6	
Level of Service		D	D		D		A	A		A	A	
Approach Delay (s)		42.2			43.3			2.6			1.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	3.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	89.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

APPENDIX E

Ontario Traffic Signal Warrants
MR 80 / Shirley Avenue

a) Projected 2026 Total Traffic
b) Sensitivity Test 1 (Shirley Avenue traffic doubled)
c) Sensitivity Test 2 (North approach weighted)
d) Sensitivity Test 3 (Pedestrian/bike volume doubled)
e) Sensitivity Test 4 (Combination of 1, 2 and 3)
f) Sensitivity Test 5 (WB LTs increased by 50%)
g) Sensitivity Test 6 (WB LTs increased by 100%)

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? MR 80 at Shirley Avenue

What is the direction of the Main Road street? North-South

When was the data collected? 2026 Total Traffic (Base Case)

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Rural **Population < 10,000 AND Speed >= 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	31	344	37	6	1	5	1	1,029	39	23	8	4	2
9:00	62	414	74	62	12	50	3	811	78	26	16	1	31
12:00	9	571	6	10	2	8	3	568	11	14	2	3	4
13:00	6	607	17	8	2	6	3	618	8	20	2	6	4
15:00	16	727	19	2	0	2	6	628	20	19	4	3	12
16:00	29	946	34	78	16	63	2	635	36	17	7	7	24
17:00	15	1,231	35	25	5	20	3	579	18	26	4	4	3
18:00	3	1,070	25	13	3	11	2	526	3	14	1	6	1
Total	**171**	**5,910**	**247**	**204**	**41**	**165**	**23**	**5,394**	**213**	**159**	**44**	**34**	**81**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	1
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	81	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	81		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									19
Net 8 Hour Vehicular Volume on Street Being Crossed									10,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	0	81	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	0	75	0	0	0	0	0	0	
Factored volume of total pedestrians	81		0		0		0		
Factored volume of delayed pedestrians	75		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									19
Net 8 Hour Volume of Delayed Pedestrians									17

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic (Base Case)

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
1A	480	720	600	900	1,528	1,609	1,207	1,303	1,446	1,870	1,965	1,677		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	47	167	39	44	30	188	84	48		
	COMPLIANCE %				39	100	33	37	25	100	70	40	443	55
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours — Yes ☐ No ☑									

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
2A	480	720	600	900	1,481	1,442	1,168	1,259	1,416	1,682	1,881	1,629		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	39	135	30	34	37	135	59	31		
	COMPLIANCE %				78	100	60	68	74	100	100	62	642	80
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours — Yes ☑ No ☐									

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☐	NO ☑	YES ☐	NO ☑
Justification 2	Delay Cross Traffic	YES ☑	NO ☐		NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	1,481	35	115	30 %	49 %
	16:00	1,682	157	115	100 %	
	17:00	1,881	50	115	43 %	
	18:00	1,629	27	115	23 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic (Base Case)

Summary Results

Justification			Compliance	Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100 %	☐	☑
	B	Crossing Volume	55 %		
2. Delay to Cross Traffic	A	Main Road	100 %	☐	☑
	B	Crossing Road	80 %		
3. Combination	A	Justificaton 1	55 %	☐	☑
	B	Justification 2	80 %		
4. 4-Hr Volume			49 %	☐	☑
5. Collision Experience			7 %	☐	☑
6. Pedestrians	A	Volume	Justification not met	☐	☑
	B	Delay	Justification not met		

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? MR 80 at Shirley Avenue

What is the direction of the Main Road street? North-South

When was the data collected? 2026 Total Traffic Adj1(ShirleyX2)

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Rural **Population < 10,000 AND Speed >= 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	25	344	37	5	2	5	1	1,029	31	23	14	4	2
9:00	53	414	74	60	38	47	3	811	67	26	30	1	31
12:00	9	571	6	10	4	8	3	568	11	14	6	3	4
13:00	6	607	17	8	4	6	3	618	8	20	4	6	4
15:00	13	727	19	2	2	2	6	628	18	19	10	3	12
16:00	27	946	34	70	32	54	2	635	35	17	16	7	24
17:00	14	1,231	35	23	10	18	3	579	18	26	8	4	3
18:00	3	1,070	25	11	4	8	2	526	3	14	2	6	1
Total	**150**	**5,910**	**247**	**189**	**96**	**148**	**23**	**5,394**	**191**	**159**	**90**	**34**	**81**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	1
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	156		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									36
Net 8 Hour Vehicular Volume on Street Being Crossed									13,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	70	5	0	0	0	0	0	0	
Factored volume of total pedestrians	156		0		0		0		
Factored volume of delayed pedestrians	145		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									36
Net 8 Hour Volume of Delayed Pedestrians									33

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic Adj1(ShirleyX2)

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
1A	480	720	600	900	1,520	1,624	1,213	1,307	1,449	1,875	1,969	1,674		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	53	202	45	48	38	196	89	45		
	COMPLIANCE %				44	100	38	40	32	100	74	38	465	58
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours — Yes ☐ No ☑ Lesser of 1A or 1B at least 80% fulfilled each of 8 hours — Yes ☐ No ☑									

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
2A	480	720	600	900	1,467	1,422	1,168	1,259	1,411	1,679	1,880	1,629		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	44	155	34	36	43	143	62	30		
	COMPLIANCE %				88	100	68	72	86	100	100	60	674	84
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours — Yes ☐ No ☑ Lesser of 2A or 2B at least 80% fulfilled each of 8 hours — Yes ☑ No ☐									

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☐	NO ☑	YES ☐	NO ☑
Justification 2	Delay Cross Traffic	YES ☑	NO ☐		NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	1,467	41	115	36 %	50 %
	16:00	1,679	156	115	100 %	
	17:00	1,880	51	115	44 %	
	18:00	1,629	23	115	20 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic Adj1(ShirleyX2)

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	58	%		
2. Delay to Cross Traffic	A	Main Road	100	%	☐	☑
	B	Crossing Road	84	%		
3. Combination	A	Justificaton 1	58	%	☐	☑
	B	Justification 2	84	%		
4. 4-Hr Volume			50	%	☐	☑
5. Collision Experience			7	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? MR 80 at Shirley Avenue

What is the direction of the Main Road street? North-South

When was the data collected? 2026 Total Traffic (Adj.2 70% from North)

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Rural **Population < 10,000 AND Speed >= 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	14	344	37	8	1	3	1	1,029	49	23	7	4	2
9:00	30	414	74	98	19	28	3	811	105	26	15	1	31
12:00	5	571	6	15	2	5	3	568	18	14	3	3	4
13:00	4	607	17	12	2	4	3	618	12	20	2	6	4
15:00	9	727	19	4	1	1	6	628	32	19	5	3	12
16:00	16	946	34	109	16	31	2	635	54	17	8	7	24
17:00	8	1,231	35	36	5	10	3	579	28	26	4	4	3
18:00	2	1,070	25	16	2	5	2	526	5	14	1	6	1
Total	**88**	**5,910**	**247**	**298**	**48**	**87**	**23**	**5,394**	**303**	**159**	**45**	**34**	**81**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	1
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	156		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									36
Net 8 Hour Vehicular Volume on Street Being Crossed									13,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	70	5	0	0	0	0	0	0	
Factored volume of total pedestrians	156		0		0		0		
Factored volume of delayed pedestrians	145		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									36
Net 8 Hour Volume of Delayed Pedestrians									33

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic (Adj.2 70% from North)

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
1A	480	720	600	900	1,520	1,624	1,213	1,307	1,454	1,875	1,969	1,674		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	46	187	42	46	33	188	85	44		
	COMPLIANCE %				38	100	35	38	28	100	71	37	447	56
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours — Yes ☐ No ☑									

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
2A	480	720	600	900	1,474	1,437	1,171	1,261	1,421	1,687	1,884	1,630		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	40	174	36	38	40	166	70	33		
	COMPLIANCE %				80	100	72	76	80	100	100	66	674	84
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours — Yes ☑ No ☐									

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☐	NO ☑	YES ☐	NO ☑
Justification 2	Delay Cross Traffic	YES ☑	NO ☐		NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	1,474	34	115	30 %	48 %
	16:00	1,687	156	115	100 %	
	17:00	1,884	51	115	44 %	
	18:00	1,630	23	115	20 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic (Adj.2 70% from North)

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	56	%		
2. Delay to Cross Traffic	A	Main Road	100	%	☐	☑
	B	Crossing Road	84	%		
3. Combination	A	Justificaton 1	56	%	☐	☑
	B	Justification 2	84	%		
4. 4-Hr Volume			48	%	☐	☑
5. Collision Experience			7	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? MR 80 at Shirley Avenue

What is the direction of the Main Road street? North-South

When was the data collected? 2026 Total Traffic (Adj 3 PedsX2)

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Rural **Population < 10,000 AND Speed >= 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	28	344	37	6	1	5	1	1,029	35	23	7	4	2
9:00	60	414	74	70	19	56	3	811	75	26	15	1	60
12:00	10	571	6	11	2	9	3	568	13	14	3	3	4
13:00	7	607	17	9	2	7	3	618	9	20	2	6	4
15:00	18	727	19	3	1	2	6	628	23	19	5	3	20
16:00	31	946	34	78	16	62	2	635	39	17	8	7	46
17:00	16	1,231	35	26	5	20	3	579	20	26	4	4	3
18:00	3	1,070	25	12	2	9	2	526	4	14	1	6	1
Total	**173**	**5,910**	**247**	**215**	**48**	**170**	**23**	**5,394**	**218**	**159**	**45**	**34**	**140**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	1
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	156		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									36
Net 8 Hour Vehicular Volume on Street Being Crossed									13,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	70	5	0	0	0	0	0	0	
Factored volume of total pedestrians	156		0		0		0		
Factored volume of delayed pedestrians	145		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									36
Net 8 Hour Volume of Delayed Pedestrians									33

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic (Adj 3 PedsX2)

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
1A	480	720	600	900	1,520	1,624	1,213	1,307	1,454	1,875	1,969	1,674		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	46	187	42	46	33	188	85	44		
	COMPLIANCE %				38	100	35	38	28	100	71	37	447	56
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours — Yes ☐ No ☑									

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
2A	480	720	600	900	1,474	1,437	1,171	1,261	1,421	1,687	1,884	1,630		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	38	175	32	35	47	157	60	29		
	COMPLIANCE %				76	100	64	70	94	100	100	58	662	83
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours — Yes ☑ No ☐									

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☐	NO ☑	YES ☐	NO ☑
Justification 2	Delay Cross Traffic	YES ☑	NO ☐		NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	1,474	34	115	30 %	48 %
	16:00	1,687	156	115	100 %	
	17:00	1,884	51	115	44 %	
	18:00	1,630	23	115	20 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic (Adj 3 PedsX2)

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	56	%		
2. Delay to Cross Traffic	A	Main Road	100	%	☐	☑
	B	Crossing Road	83	%		
3. Combination	A	Justificaton 1	56	%	☐	☑
	B	Justification 2	83	%		
4. 4-Hr Volume			48	%	☐	☑
5. Collision Experience			7	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? MR 80 at Shirley Avenue

What is the direction of the Main Road street? North-South

When was the data collected? 2026 Total Traffic Adj1+2+3

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Rural **Population < 10,000 AND Speed >= 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	13	344	37	7	2	3	1	1,029	43	23	14	4	2
9:00	27	414	74	83	38	24	3	811	93	26	30	1	60
12:00	5	571	6	14	4	4	3	568	15	14	6	3	4
13:00	3	607	17	11	4	3	3	618	11	20	4	6	4
15:00	7	727	19	3	2	1	6	628	24	19	10	3	20
16:00	14	946	34	97	32	27	2	635	48	17	16	7	46
17:00	7	1,231	35	32	10	9	3	579	25	26	8	4	3
18:00	2	1,070	25	15	4	4	2	526	4	14	2	6	1
Total	**78**	**5,910**	**247**	**262**	**96**	**75**	**23**	**5,394**	**263**	**159**	**90**	**34**	**140**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	1
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	156		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									36
Net 8 Hour Vehicular Volume on Street Being Crossed									13,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	70	5	0	0	0	0	0	0	
Factored volume of total pedestrians	156		0		0		0		
Factored volume of delayed pedestrians	145		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									36
Net 8 Hour Volume of Delayed Pedestrians									33

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic Adj1+2+3

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
1A	480	720	600	900	1,520	1,624	1,213	1,307	1,449	1,875	1,969	1,674		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	53	202	45	48	38	196	89	45		
	COMPLIANCE %				44	100	38	40	32	100	74	38	465	58
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours — Yes ☐ No ☑									

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
2A	480	720	600	900	1,467	1,422	1,168	1,259	1,411	1,679	1,880	1,629		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	46	207	38	39	52	192	71	34		
	COMPLIANCE %				92	100	76	78	100	100	100	68	714	89
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours — Yes ☑ No ☐									

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☐	NO ☑	YES ☐	NO ☑
Justification 2	Delay Cross Traffic	YES ☑	NO ☐		NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	1,467	41	115	36 %	50 %
	16:00	1,679	156	115	100 %	
	17:00	1,880	51	115	44 %	
	18:00	1,629	23	115	20 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic Adj1+2+3

Summary Results

Justification			Compliance	Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100 %	☐	☑
	B	Crossing Volume	58 %		
2. Delay to Cross Traffic	A	Main Road	100 %	☐	☑
	B	Crossing Road	89 %		
3. Combination	A	Justificaton 1	58 %	☐	☑
	B	Justification 2	89 %		
4. 4-Hr Volume			50 %	☐	☑
5. Collision Experience			7 %	☐	☑
6. Pedestrians	A	Volume	Justification not met	☐	☑
	B	Delay	Justification not met		

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? MR 80 at Shirley Avenue

What is the direction of the Main Road street? North-South

When was the data collected? 2026 Total Traffic (Adj 4 Non-school LT+50%)

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Rural **Population < 10,000 AND Speed >= 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	28	344	37	6	1	5	1	1,029	35	35	7	4	2
9:00	60	414	74	70	19	56	3	811	75	39	15	1	31
12:00	10	571	6	11	2	9	3	568	13	21	3	3	4
13:00	7	607	17	9	2	7	3	618	9	30	2	6	4
15:00	18	727	19	3	1	2	6	628	23	29	5	3	12
16:00	31	946	34	78	16	62	2	635	39	26	8	7	24
17:00	16	1,231	35	26	5	20	3	579	20	39	4	4	3
18:00	3	1,070	25	12	2	9	2	526	4	21	1	6	1
Total	**173**	**5,910**	**247**	**215**	**48**	**170**	**23**	**5,394**	**218**	**240**	**45**	**34**	**81**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	1
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	156		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									36
Net 8 Hour Vehicular Volume on Street Being Crossed									13,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	70	5	0	0	0	0	0	0	
Factored volume of total pedestrians	156		0		0		0		
Factored volume of delayed pedestrians	145		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									36
Net 8 Hour Volume of Delayed Pedestrians									33

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic (Adj 4 Non-school LT+50%)

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
1A	480	720	600	900	1,532	1,637	1,220	1,317	1,464	1,884	1,982	1,681		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	58	200	49	56	43	197	98	51		
	COMPLIANCE %				48	100	41	47	36	100	82	43	496	62
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours — Yes ☐ No ☑ Lesser of 1A or 1B at least 80% fulfilled each of 8 hours — Yes ☐ No ☑									

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
2A	480	720	600	900	1,474	1,437	1,171	1,261	1,421	1,687	1,884	1,630		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	50	159	39	45	49	144	73	36		
	COMPLIANCE %				100	100	78	90	98	100	100	72	738	92
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours — Yes ☐ No ☑ Lesser of 2A or 2B at least 80% fulfilled each of 8 hours — Yes ☑ No ☐									

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☐	NO ☑	YES ☐	NO ☑
Justification 2	Delay Cross Traffic	YES ☑	NO ☐		NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	1,474	46	115	40 %	52 %
	16:00	1,687	156	115	100 %	
	17:00	1,884	51	115	44 %	
	18:00	1,630	28	115	24 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic (Adj 4 Non-school LT+50%)

Summary Results

Justification			Compliance	Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100 %	☐	☑
	B	Crossing Volume	62 %		
2. Delay to Cross Traffic	A	Main Road	100 %	☐	☑
	B	Crossing Road	92 %		
3. Combination	A	Justificaton 1	62 %	☐	☑
	B	Justification 2	92 %		
4. 4-Hr Volume			52 %	☐	☑
5. Collision Experience			7 %	☐	☑
6. Pedestrians	A	Volume	Justification not met	☐	☑
	B	Delay	Justification not met		

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? MR 80 at Shirley Avenue

What is the direction of the Main Road street? North-South

When was the data collected? 2026 Total Traffic (Adj 5 Non-school LT+100%)

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Rural **Population < 10,000 AND Speed >= 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
8:00	28	344	37	6	1	5	1	1,029	35	46	7	4	2
9:00	60	414	74	70	19	56	3	811	75	52	15	1	31
12:00	10	571	6	11	2	9	3	568	13	28	3	3	4
13:00	7	607	17	9	2	7	3	618	9	40	2	6	4
15:00	18	727	19	3	1	2	6	628	23	38	5	3	12
16:00	31	946	34	78	16	62	2	635	39	34	8	7	24
17:00	16	1,231	35	26	5	20	3	579	20	52	4	4	3
18:00	3	1,070	25	12	2	9	2	526	4	28	1	6	1
Total	**173**	**5,910**	**247**	**215**	**48**	**170**	**23**	**5,394**	**218**	**318**	**45**	**34**	**81**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	0
13-24	1
25-36	0

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Factored 8 hour pedestrian volume	156		0		0		0		
% Assigned to crossing rate	23%		34%		30%		100%		
Net 8 Hour Pedestrian Volume at Crossing									36
Net 8 Hour Vehicular Volume on Street Being Crossed									13,000

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	75	6	0	0	0	0	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	70	5	0	0	0	0	0	0	
Factored volume of total pedestrians	156		0		0		0		
Factored volume of delayed pedestrians	145		0		0		0		
% Assigned to Crossing Rate	23%		34%		30%		100%		
Net 8 Hour Volume of Total Pedestrians									36
Net 8 Hour Volume of Delayed Pedestrians									33

Analysis Sheet

Input Sheet | Results Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic (Adj 5 Non-school LT+100%)

Justification 1: Minimum Vehicle Volumes

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 Lanes		2 or More Lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
1A	480	720	600	900	1,543	1,650	1,227	1,327	1,473	1,892	1,995	1,688		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
1B	120	170	120	170	69	213	56	66	52	205	111	58		
	COMPLIANCE %				58	100	47	55	43	100	93	48	543	68
Free Flow Signal Justification 1:					Both 1A and 1B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours — Yes ☐ No ☑									

Justification 2: Delay to Cross Traffic

Free Flow Rural Conditions

Justification	Guidance Approach Lanes				Percentage Warrant								Total Across	Section Percent
	1 lanes		2 or More lanes		Hour Ending									
Flow Condition	FREE FLOW ☐	RESTR. FLOW ☐	FREE FLOW ☑	RESTR. FLOW ☐	8:00	9:00	12:00	13:00	15:00	16:00	17:00	18:00		
2A	480	720	600	900	1,474	1,437	1,171	1,261	1,421	1,687	1,884	1,630		
	COMPLIANCE %				100	100	100	100	100	100	100	100	800	100
2B	50	75	50	75	61	172	46	55	58	152	86	43		
	COMPLIANCE %				100	100	92	100	100	100	100	86	778	97
Free Flow Signal Justification 2:					Both 2A and 2B 100% Fullfilled each of 8 hours — Yes ☐ No ☑									
					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours — Yes ☑ No ☐									

Justification 3: Combination

Combination Justification 1 and 2

	Justification Satisfied 80% or More			Two Justifications Satisfied 80% or More	
Justification 1	Minimun Vehicular Volume	YES ☐	NO ☑	YES ☐	NO ☑
Justification 2	Delay Cross Traffic	YES ☑	NO ☐		NOT JUSTIFIED

Justification 4: Four Hour Volume

Justification	Time Period	Total Volume of Both Approaches (Main) X	Heaviest Minor Approach Y (actual)	Required Value Y (warrant threshold)	Average % Compliance	Overall % Compliance
Justification 4	8:00	1,474	57	115	50 %	58 %
	16:00	1,687	156	115	100 %	
	17:00	1,884	60	115	52 %	
	18:00	1,630	35	115	30 %	

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: MR 80 at Shirley Avenue

Count Date: 2026 Total Traffic (Adj 5 Non-school LT+100%)

Summary Results

Justification			Compliance	Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100 %	☐	☑
	B	Crossing Volume	68 %		
2. Delay to Cross Traffic	A	Main Road	100 %	☐	☑
	B	Crossing Road	97 %		
3. Combination	A	Justificaton 1	68 %	☐	☑
	B	Justification 2	97 %		
4. 4-Hr Volume			58 %	☐	☑
5. Collision Experience			7 %	☐	☑
6. Pedestrians	A	Volume	Justification not met	☐	☑
	B	Delay	Justification not met		

APPENDIX F

Ontario Pedestrian Signal Warrants
MR 80 / Shirley Avenue

4.9 Justification 6 – Pedestrian Volume and Delay

Purpose

The minimum pedestrian volume conditions are intended for applications where the traffic volume on a main road is so heavy that pedestrians experience excessive delay or hazard in crossing the main road, or where high pedestrian crossing volumes produce the likelihood of such delays.

The justification is applicable to an unsignalized intersection or a mid-block location.

Once justification has been established, determination of the appropriate crossing protection device should be subject to site-specific engineering judgement (see Guideline 3 for options).

Standard

The need for a traffic control device at an intersection or mid-block location must be considered if both the following minimum pedestrian volume and delay criteria are met:

1. The total eight-hour pedestrian volume crossing the main road at an intersection or mid-block location during the highest eight hours of pedestrian traffic fulfils the

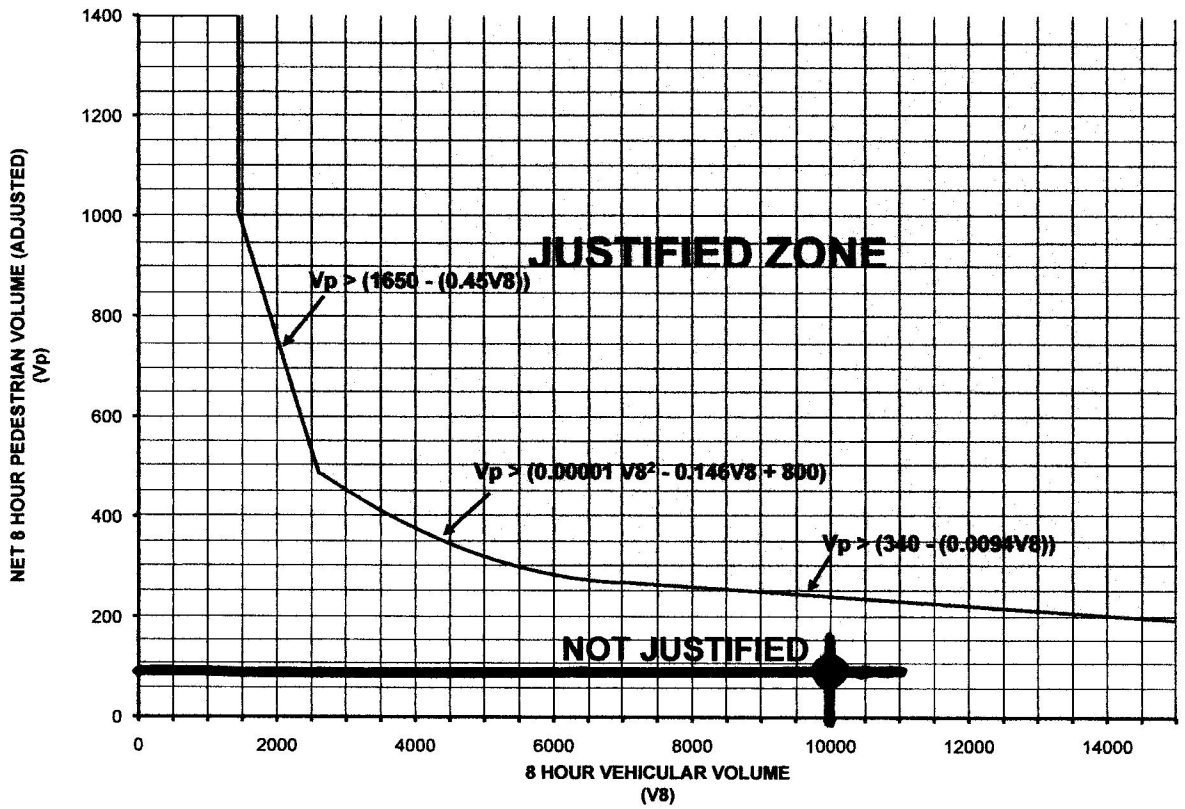


Figure 22 – Justification 6 – Pedestrian Volume

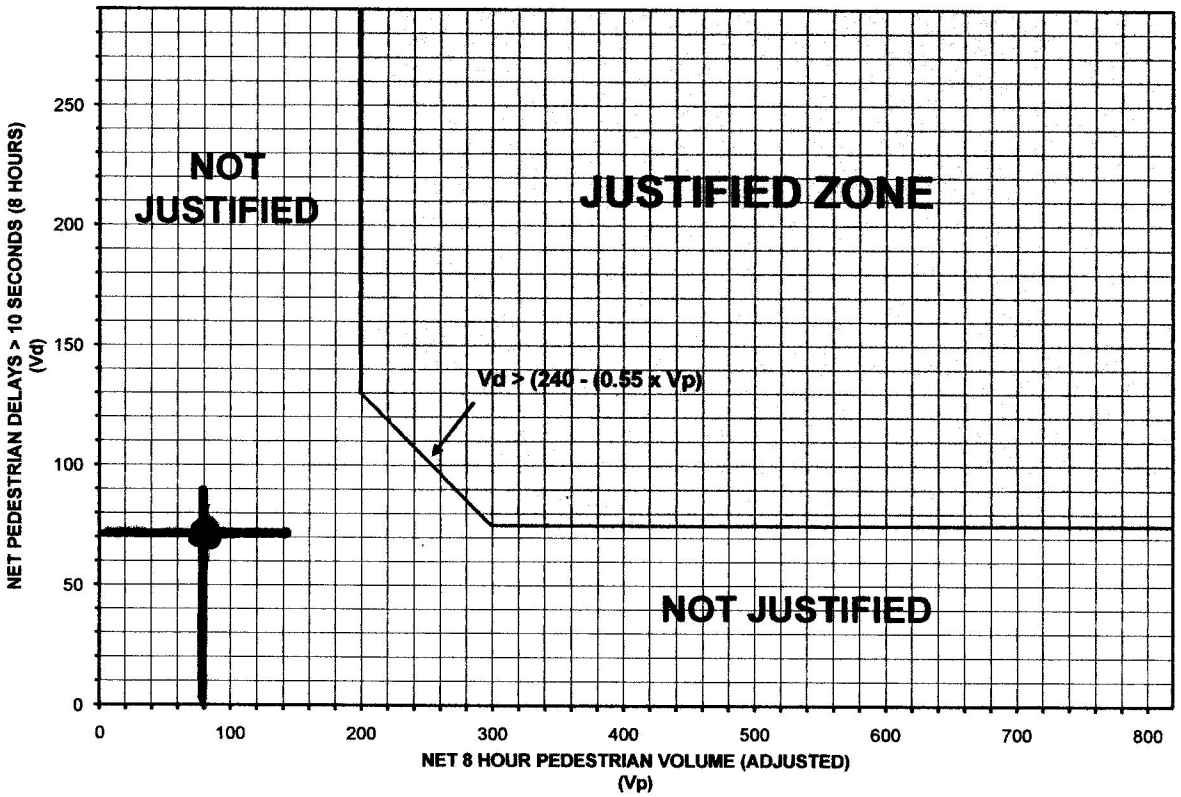


Figure 23 – Justification 6 – Pedestrian Delay

justification requirement identified in Figure 22. A tabular form of the justification values is provided in Table 18.

2. The total 8-hour volume of pedestrians experiencing delays of ten seconds or more in crossing the road during the highest eight hours of pedestrian traffic fulfils the justification requirement identified in Figure 23. A tabular form of the justification values is provided in Table 19.

Guidelines

1. If a roadway is crossed by pedestrians at several locations, and the introduction of a signal-protected crossing is likely to consolidate the crossings at a single point, the road segment may be divided into zones, with an appropriate proportion of crossings in each zone reassigned to the signal-protected crossing zone included in Tables 16 and 17.

2. In the case of a divided roadway with a raised median at least 1.2 m wide, the justification may be calculated separately for each side. The "worst case" will govern the outcome: such that if a protected crossing is justified for one side, the entire crossing will be justified.

3. If both Justification 6 and a traffic engineering study determine that protection of pedestrian traffic crossing a roadway is appropriate, consideration may be given to the variety of options. Consistent municipal practice

751-7/20-04 - (Municipal Road 80, Val Therese
Conservation Sudbury File 4415

Legend

- Road_CGS_2019
- Waterbody
- Wetlands
- Active Municipal Drains
- Watercourse
- Parcels (File Number)
- Floodplain
- Regulation Limits
- Municipal Boundary (CGS)
- NDCA Jurisdiction
- World Imagery
- Low Resolution 15m Imagery
- High Resolution 60cm Imagery
- High Resolution 30cm Imagery
- Citations

Notes

See comments

229.3 0 114.66 229.3 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

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THIS MAP IS NOT TO BE USED FOR NAVIGATION

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May 28, 2008 Ref. Num.: 08-055

Allen Bonnis, P. Eng.
General Manager
Nickel District Conservation Authority
Tom Davies Square, 1st Floor
200 Brady Street
Sudbury, ON P3E 5K3

Regarding: **Whitson River Tributary VIII (Hope Drain) Floodplain Study (Paquette Property)**

K. Smart Associates Limited has been retained to determine the extents of the floodplain of the Hope Drain on lands owned by Norman Paquette, west of Regional Road 80 and south of Kenneth Drive.

Floodplain mapping had been completed by S. A. Kirchhefer Limited in 1988; however, many improvements were made to the Hope Drain in 2006, including channel deepening and widening and channel relocation. As a result, the floodplain mapping from 1988 required updating. The original HEC 2 model used by Kirchhefer in 1988 was obtained and imported into HEC RAS. The channel cross sections were revised to reflect the current drainage channel as per the 2006 Hope Drain Report completed by K. Smart Associates Limited. To ensure the floodplain was accurately defined in the model, a topographical survey of the Paquette lands was completed.

The hydrology model developed by Kirchhefer in 1988 was calibrated against three separate storm events and the regional storm flow rate used by Kirchhefer in previous floodplain studies was deemed suitable and not updated as part of this study.

The updated model indicated the regional storm was contained by the banks of the improved channel across the Paquette lands and the floodplain does not encroach on the property. The maximum water surface elevation in the Hope Drain across the Paquette lands is 288.98 m. It is recommended that any future development of the Paquette lands limit construction of houses to 45 metres from the top of bank of the Hope Drain and that all openings in house foundations (door sills, window sills, stairs to basements) be constructed above elevation 289.30 m.

Two copies of the Hope Drain Floodplain Study Report are enclosed. Please review and provide comments or acceptance of the enclosed reports.

If you have any questions please feel free to call.

David Harsch, P. Eng.
[redacted]
K. Smart Associates Limited

CONSEIL SCOLAIRE CATHOLIQUE NOUVELON

January 19th, 2021,

Mr. Joe Rocca
Traffic and Asset Management Supervisor
City of Greater Sudbury

David Shelsted,
Director of Engineering Services
City of Greater Sudbury

Re: Proposed New Catholic Elementary School
MR 80, Val Therese

The Conseil scolaire catholique du Nouvel-Ontario (CSC Nouvelon) is looking forward to continuing its collaboration with the City of Greater Sudbury on the Active Transportation file at the site of the new school as well as at all schools located in the City. As you are aware, the CSC Nouvelon is in the process of consolidating three existing schools and planning for the construction of a new school located on MR80 in Val Thérèse. A traffic light at Shirley Street and MR80 has been requested to ensure safety measures are in place for this school.

The CSC Nouvelon is a school board that has always prioritized sustainability as well as green initiatives, both in the classroom and outside of the classroom. In recent years, the Board has been recognized in the top five school boards by ***Climate Challenge Network*** at https://sustainableschools.ca/. We build green schools and we focus on the integration of the environment in the classroom curriculum. We also encourage students to become eco-responsible citizens.

The Board also collaborates with the Sudbury Student Services Consortium (SSSC) on initiatives related to the transportation of our students. For example, the board has different walk distances for different student groups. The implementation of walk distances ensures that a certain number of students are required to walk to school. This reduces transportation costs, but most importantly encourages

students to walk or bike to school. We have noticed in the past years that more and more students are being driven to schools and as a result, the four school boards have partnered with the SSSC to share information with parents on the emissions created by driving students to school. This ongoing campaign also highlights the benefits of physical activity for students.

Currently at Jean-Paul II, an elementary school in Val Caron, there are numerous walking and biking initiatives in place. A staff member accompanies the students to the traffic light at Main Street in order to facilitate the crossing of the street by the students. The staff member takes the opportunity to regularly share crossing strategies with the students who walk or bike to school. In addition to this, the school has numerous bicycle racks for the students to park their bicycles during the school day. The school Principal collaborates with Greater Sudbury Police to offer educational sessions to the students on various safety practices, for example: cycling, walking and crossing intersections. The Principal also communicates with parents on a regular basis regarding the implementation as well as the benefits of the initiatives.

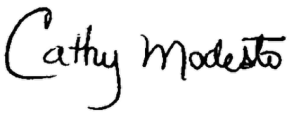
CSC Mouflon is committed to continuing its important sustainable and green initiative work. At the new school, many of the initiatives that exist at Jean-Paul II will be in place. For example, a staff member will accompany students to ensure the students cross MR80 in a safe manner. The school will also solicit volunteer parents who will accompany students across MR80. The school will continue to encourage the use of the sidewalks foot paths as well as bicycle paths that will lead to the school. Several bicycle racks will be installed in order to encourage the students to travel to school with their bicycles.

CSC Nouvelon is extremely interested in continuing its collaboration with the City of Greater Sudbury, as well as all other partners, on numerous initiatives: walking, bussing, recycling and composting, construction as well as many others.

The school Board would like to thank the City's administration team to taking the time to discuss this important issue regarding the construction of our new school.

Should you have any additional questions, I am always available.

Regards



Cathy Modesto
Superintendent of Business and Finance
Le Conseil scolaire catholique du Nouvel-Ontario
[redacted]