

SOUTH FERGUS MASTER ENVIRONMENTAL & SERVICING PLAN & SECONDARY PLAN

County of Wellington, Township of Centre Wellington

Date:

March 2024

Prepared by:

MacNaughton Hermsen Britton Clarkson Planning Limited (MHBC)

540 Bingemans Centre Drive, Suite 200

Kitchener, Ontario

T: 519.576.3650

F: 519.576.0121

Our File 19144A

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1.0

INTRODUCTION

MHBC Planning has led a team (Tatham Engineering, Altus Group and FRI Ecological Services) on behalf of the area landowners to coordinate the South Fergus Master Environmental Servicing Plan (“MESP”) and Secondary Plan. The MESP and Secondary Plan are intended to guide the development of the remaining designated greenfield lands in South Fergus. The Secondary Plan will establish land use designations and policy framework to be included in the Township of Centre Wellington Official Plan through an Official Plan Amendment. The MESP integrates infrastructure requirements for existing and future land use with environmental assessment planning principles. The lands subject to the MESP and Secondary Plan are shown on **Figure 1** and will be referred to as the “Study Area”.

The Study Area comprises an area of 152 hectares (375 acres) and is generally located on the lands bounded by existing development in the north, Jones Baseline/Scotland Street in the east, Second Line in the south and Guelph Street in the west. The Study Area is bisected by Tower Street/Second Line.

1.1 Purpose of Study

The Township of Centre Wellington Official Plan identifies two Secondary Plan Areas within the Fergus Urban Centre, one being located in northwest Fergus and subject to an approved Secondary Plan completed in 2013, and the other being the Study Area. Both of these areas represent large land areas that were added to the Urban Centre boundary in 2003 to accommodate projected growth for at least 20 years. The Northwest Fergus Secondary Plan was completed in 2013. This process is intended to result in a Secondary Plan for the South Fergus Area.

The MESP is a long range plan that integrates infrastructure requirements for existing and future land use with environmental assessment planning principles. These plans examine an infrastructure system in order to outline a framework for planning for subsequent projects and/or developments. At a minimum the MESP addresses Phase 1 and 2 of the Municipal Class Environmental Assessment (“EA”) process. Master planning provides the municipality with a broad framework through which the need and justification for specific projects can be established and the environmental assessment process can be satisfied.

The intent of the Study is to integrate the MESP and Secondary Plan processes. When these planning documents are prepared simultaneously, alternatives can be assessed taking into account land use and servicing issues while addressing a preferred alternative which minimizes, to the extent possible, the impact on the community, natural environment and the economy. The integrated approach satisfies the requirements of the Class EA and the *Planning Act*. Documentation and supporting technical reports prepared through the MESP process have been provided to the public and review agencies for review and comment, as required.

Council of the Township of Centre Wellington authorized an agreement between the Township and Participating Landowners to provide for the completion of the Study on March 22, 2021. MHBC has been retained as the project manager for the MESP and Secondary Plan and to provide planning, urban design and cultural heritage expertise. The consulting team also includes Tatham Engineering, FRi Ecological Services, AMICK Consultants Limited and Altus Group.

1.2 Study Objectives

The following Problem/Opportunity Statement has been developed for the Study:

The Township Official Plan requires the completion of the South Fergus Secondary Plan and Master Environmental Servicing Plan (MESP) to provide an integrated planning approach for future urban development within the Study Area.

The objectives for the MESP are as follows:

- Assess existing conditions;
- Identify alternative solutions to the problem or opportunity;
- Assess impacts and determine mitigation measures and management alternatives;
- Determine the preferred solution;
- Document the study, including the problem or opportunity, alternative solutions, preferred solutions and consultation and decision making processes; and
- Engage in public consultation through Public Information Centres, to ensure that subwatershed, resident and stakeholder issues are incorporated into the Study.

A Terms of Reference was developed to guide the completion of the Study in consultation with the County of Wellington, the Township of Centre Wellington and the Grand River Conservation Authority. The Terms of Reference are included as **Appendix A**.

The requirements for the MESP outlined in the Terms of Reference include:

- Background Review and Existing Conditions, including: policy review, socio-economic conditions, natural environment, functional servicing, surface water resources, stormwater management, groundwater, hydrogeological, floodplain hydraulics, fluvial geomorphology and erosion assessment.
- Supplementary Reports/Analysis, including: Transportation Plan, Urban Design Guidelines, Parks Concept, Fiscal Impact Study, Archaeological Assessment and Cultural Heritage Evaluation and Assessment.
- Management Plan including components related to the Natural Heritage System, storm water management measures and monitoring and implementation.
- Preparation of a Secondary Plan to provide the land use vision and policy framework for the Study Area.

This Study forms the basis of an Official Plan Amendment, to be approved by Township and County Council, to implement the Secondary Plan. This amendment will direct the preparation and approval of future Planning Act applications to facilitate the development of the Study Area.

1.3 Study Process

The South Fergus MESP and Secondary Plan was completed in coordinated and comprehensive manner and included involvement of a Technical Advisory Committee (“TAC”), including the County, Township and GRCA. Various stages of consultation, review and approval occurred, including the preparation of the Terms of Reference (TOR) and Technical Work Plan (TWP), Existing Conditions Report and the final document. During the process, meetings were held with the TAC to guide the study.

Appendix B – Technical Advisory Committee Appendices contains copies of the TAC meeting documents.

The Existing Conditions Report was issued in September 2021. The purpose of that report was to document the background research and inventory of the existing conditions related to the natural, social and cultural environment. It also included an assessment of constraints and preliminary impact assessment. The existing conditions report was used as the baseline to identify alternative solutions, assess potential impacts of the alternative solutions on the environment and recommend any measures to mitigate those impacts through a preferred solution. A summary of existing conditions is contained in this Report.

Public consultation was facilitated through Public Information Centres (PICs) at which the general public was informed about the process and the study findings/recommendations. The first PIC occurred on June 24, 2021, and provided members of the public an opportunity to review the work completed to date and to provide input into and comments on the South Fergus MESP and Secondary Plan. The second PIC was held on April 13, 2022 to provide members of the public an opportunity to review the findings of the Existing Conditions Report and Preliminary Land Use Options. The final PIC was held on May 16, 2023 and provided the public an opportunity to review the draft recommendations and preferred land use plan for the Study Area. A Public Meeting, as required by the Planning Act, was held on July 26, 2023. Notice of Study Completion will be issued upon Council endorsement of the MESP.

Appendix C includes the Record of Public Consultation contains copies of the public consultation documents.

The following provides a general graphical overview of the process:



1.4 Technical Studies

A number of technical studies were undertaken as part of the MESP, including natural heritage, hydrogeological study, transportation impact study, fiscal impact, servicing studies (stormwater, sanitary and water) and an archaeological assessment.

The Environmental Impact Assessment (“EIA”) was prepared by FRi Ecological Services. The EIA focused primarily on Provincially Significant Wetlands, Significant Woodlands, Habitat of Endangered Species and Threatened Species, Significant Wildlife Habitat and Fish Habitat. The report assesses and evaluates the potential impact to natural heritage features and functions and recommends avoidance and mitigation measures.

The Transportation Plan was completed by Tatham Engineering. This report assesses the existing road network, traffic volumes resulting from the development of the Study Area, and the impacts on the future road network. The report addresses the needs of the road network to accommodate the future conditions associated with the development of the Study Area.

The Functional Servicing Report was completed by Tatham Engineering. This report assesses various water, sanitary, stormwater and traffic servicing alternatives for the Study Area. The report also recommends a servicing strategy for the Study Area and implementation recommendations.

The Stormwater Management Report was completed by Tatham Engineering. This report outlines the proposed drainage patterns for the Study Area, stormwater management criteria, a strategy to provide water quality and quantity control and an erosion and sediment control plan.

A Fluvial Geomorphic Characterization and Erosion Threshold Analysis was prepared by Water’s Edge. This report characterizes the existing watercourse and watershed conditions within the Study Area and establishes the erosion threshold criteria through an erosion threshold assessment.

A Fiscal Impact Study was prepared by Altus Group. This report examines the potential fiscal impacts of development of the Study Area on the finances of the Township.

A Stage 1-2 Archaeological Property Assessment was prepared by AMICK Consultants limited. This report evaluates the archaeological potential of the Study Area.

1.5 Purpose of Report

The first phase of the MESP included preparation of an Existing Conditions Report, dated August, 2021, which provided a contextual framework of the Study Area, summary of existing conditions, an overview of the existing policy framework, including Provincial policies, County and Township Official Plan policies and Grand River Conservation Authority regulations, identification of constraints and preliminary impact assessment.

This Report represents the culmination of the second phase of the Secondary Plan and MESP process. The purpose of this report is to:

- Identify and assess preliminary land use options.
- Determine preferred land use concept for Secondary Plan Area.
- Assess the impact of the proposed Secondary Plan and MESP, including land use and infrastructure in terms of impacts to groundwater recharge and quality, surface water quality and quantity, the integrity of the surrounding environmental features.
- Identify opportunities for enhancement and/or restoration of natural heritage.
- Determine Urban Design Guidelines for the Secondary Plan Area.
- Develop a Management Plan for the Secondary Plan Area, based on the information provided in the previous sections of the MESP. The Management Plan includes components that apply within and outside of the identified natural heritage system, general stormwater management measures appropriate for the mitigative requirements, and comprehensive pre-, during-, and post-development monitoring programs. Criteria and guidelines are outlined for determining the natural heritage system, developing a buffer management strategy and stewardship strategy.
- Establish an Implementation Plan that includes guidelines for the implementation of recommendations through the development process. A Phasing Plan will be established based the stormwater management strategy, transportation plan and the availability and capacity of infrastructure required to facilitate development.

The findings of this phase of the MESP, lead to the preparation of a draft Secondary Plan which contains detailed policies intended to guide the development of the Study Area. A copy of the draft Secondary Plan is appended to this Report.

This Report is intended to be read in conjunction the technical reports and memorandums prepared by the project team. These Technical Reports and Memorandums are appended to this Report.

2.0

STUDY AREA & SURROUNDINGS

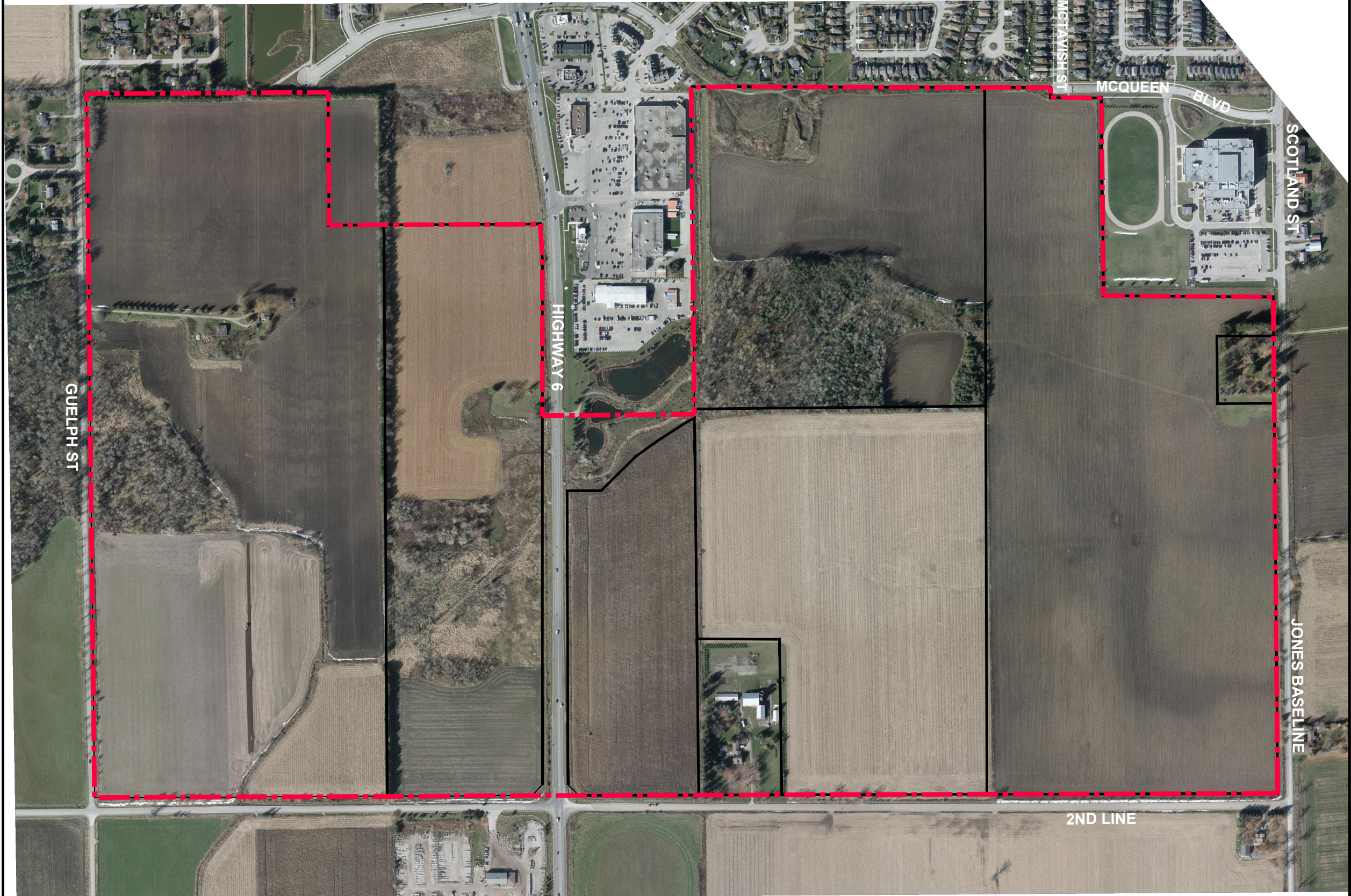
The Study Area is located in the southern portion of Fergus (**Figure 1**). It has an area of 152 hectares (375 acres) and is generally located on the lands bounded by Scotland Street to the east, Second Line to the south, Guelph Street to the west and existing development to the north.

Fergus is one of three Urban Centres within the Township of Centre Wellington. It is located centrally within the County of Wellington, approximately four kilometers west of Elora and 20 kilometers north of Guelph. According to the 2011 census, the population of Fergus was 19,126 residents with 7,508 total private dwellings.

The Study Area is comprised of seven separate properties, the majority of which are used for agricultural purposes. Several of the properties within the Study Area feature existing buildings and structures. The properties within the Study Area include:



- 936 Guelph Street - this property is used for agricultural purposes and features a single detached dwelling and accessory building
- 963 Tower Street South - this property is used for agricultural purposes and does not feature any buildings or structures
- 1100 Tower Street South – this property is used for agricultural purposes and does not feature any buildings or structures
- 7856 Second Line – this property features one single detached dwelling and a number of agricultural-related and accessory buildings
- 7872 Second Line - this property is used for agricultural purposes and does not feature any buildings or structures
- 6330 Jones baseline – this property features a single detached dwelling and accessory building
- 6322 Jones Baseline – this property is used for agricultural purposes and does not feature any buildings or structures

The subject lands are located within the Nichol Drain No. 2 watershed, which covers an area of 559.4 hectares. The Nichol Drain No. 2 Subwatershed Study was prepared in 1996 by R.J. Burnside & Associates Ltd. to provide a general overview of the environmental features within the watershed and establish a stormwater management strategy for the lands in the Study Area, east of Tower Street South (Highway 6). The Nichol Drain No. 2 Subwatershed Study has been considered in the preparation of this MESP.



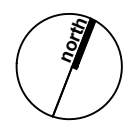
**Figure # 1
Location Plan**

South Fergus MESP and Secondary Plan
Town of Fergus
Township of Centre Wellington
County of Wellington

- Legend**
-  Study Area (±151 ha)
 -  Parcel Fabric*

Base Map Source:
Imagery: Northway\Photomap\Remote Sensing Ltd, 2020 and GRCA 2015
*Parcel fabric digitized from GRCA web mapping and is approximate in size and location

DATE: May 2021
SCALE: NTS
FILE: 19144A
DRAWN: DGS



K:\19144A - South Fergus MESP and Secondary Plan\RPT\Location Plan.dwg



**PLANNING
URBAN DESIGN
& LANDSCAPE
ARCHITECTURE**



FRICORP
ECOLOGICAL SERVICES



TATHAM
ENGINEERING

3.0 POLICY FRAMEWORK OVERVIEW

This section of the report provides a summary of the applicable land use policy framework as it applies to the Study Area, and identifies how future development must be consistent with and/or conform to, this framework. In addition, this section of the report provides a basis for recommended Secondary Plan policies which will seek to improve and complement existing policy direction.

3.1 Provincial Policy Framework

The following is a review of the Provincial Policy framework, at the time of this report, including a review of the key relevant policies which were considered through the MESP.

3.1.1 *A Place to Grow: Growth Plan for the Greater Golden Horseshoe*

The 2020 A Place to Grow: Growth Plan for the Greater Golden Horseshoe (“A Place to Grow”) came into effect on August 28, 2020. This Plan is the framework for implementing the Provincial Government’s initiative to plan for growth and development in a way that supports economic prosperity, protects the environment, and helps the communities achieve a high quality of life within the Greater Golden Horseshoe (“GGH”).

Among the guiding principles of the plan include: support the achievement of complete communities that are designed to support healthy and active living and meet the needs of daily living; prioritize intensification and higher densities to make efficient use of land and infrastructure and support transit viability; provide flexibility to capitalize on new economic and employment opportunities as they emerge, while providing certainty for traditional industries; support a range and mix of housing options; improve the integration of land use planning with planning and investment in infrastructure and public service facilities; provide for different approaches to managing growth that recognize the diversity of communities in the GGH; protect and enhance natural heritage, hydrologic, and landform systems, features, and functions; conserve and promote cultural heritage resources; and integrate climate change considerations into planning and managing growth.

3.1.1.1 Managing Growth

Population and employment forecasts for the GGH are contained in Schedule 3 of A Place to Grow. The County of Wellington population and employment growth forecasted is:

- Population 160,000
- Employment – 70,000

Section 2.2.1.2 provides that forecasted growth will be allocated based on the majority of growth being directed to settlement areas that have a delineated built boundary, have existing or planned municipal water and wastewater systems; and, can support the achievement of complete communities. Within settlement areas, growth will be focused in delineated built-up areas, strategic growth areas, locations with existing or planned transit; and areas with existing or planned public service facilities. Development will be generally directed away from hazardous lands.

Further, section 2.2.1.3 provides that upper and single tier municipalities will undertake integrated planning to manage forecasted growth to the horizon of the plan. This will include establishing a hierarchy of settlement areas, be supported by planning for infrastructure and public service facilities; provide for an urban form that will optimize infrastructure, to support the achievement of complete communities through a more compact built form; and, support the environmental and agricultural protection and conservation objectives of the plan.

Complete communities are defined as:

“Places such as mixed-use neighbourhoods or other areas within cities, towns, and settlement areas that offer and support opportunities for people of all ages and abilities to conveniently access most of the necessities for daily living, including an appropriate mix of jobs, local stores, and services, a full range of housing, transportation options and public service facilities. Complete communities are age-friendly and may take different shapes and forms appropriate to their contexts.”

Section 2.2.1.4 sets out the policies to support the achievement of complete communities, including: feature a diverse mix of land uses and convenient access to local stores, services and public service facilities; improve social equity and overall quality of life; provide a diverse range of housing options including additional residential units and affordable housing; expand convenient access to a range of transportation options, public service facilities, publicly accessible open space, parks, trails and other recreational facilities and healthy, local and affordable food options; provide for a more compact urban form and more vibrant public realm; mitigate and adapt to the impacts of a changing climate; and integrate green infrastructure and appropriate low impact development.

3.1.1.2 Designated Greenfield Areas

Section 2.2.7 of A Place to Grow sets out the policies for Designated Greenfield Areas and provides that new development will be planned, designated and zoned in a manner that supports the achievement of complete communities; supports active transportation; and encourages the integration and sustained viability of transit services. The minimum density target applicable to the Designated Greenfield Area of Wellington County is 40 residents and jobs combined per hectare. The minimum density target will be measured over the entire Designated Greenfield Area, excluding: natural heritage features and areas, natural heritage systems, and floodplains, provided development is prohibited in these areas; specific utility rights-of-way; employment areas; and cemeteries.

3.1.1.3 Transportation

Section 3.2.2 of the Growth Plan requires transportation, land use planning and transportation investment to be coordinated and that the transportation system within the Greater Golden Horseshoe be planned and managed to: provide connectivity among transportation modes; offer a balance of transportation choice; be sustainable and reduce greenhouse gas emissions; offer multi-modal access to jobs, housing, schools, cultural and recreational opportunities and goods and services; accommodate agricultural vehicles and equipment; provide for the safety of system users. A complete streets approach will be adopted to ensure the needs and safety of all road users.

3.1.1.4 Water and Wastewater Systems and Stormwater Management

In accordance with Section 3.2.6, the water and wastewater services will be planned, designed and constructed to serve growth in a manner that: prioritizes opportunities for optimization and improved efficiency within existing systems; serves growth that supports the minimum density targets of the plan; is designed in accordance with a comprehensive water or wastewater master plan or equivalent, informed by watershed planning.

Section 3.2.7 of A Place to Grow states that proposals for large-scale development proceeding by way of a secondary plan will be supported by a stormwater management plan that is informed by a subwatershed plan, or equivalent; incorporates and integrated treatment approach; establishes planning, design and construction practices to minimize vegetation removal, grading and soil compaction, sediment erosion and impervious services; and aligns with the stormwater master plan or equivalent for the settlement area.

3.1.1.5 A Place to Grow Summary

This summary above includes a review of the key relevant policies of the A Place to Grow. The policies of Place to Grow have been taken into consideration through the preparation of the MESP. The MESP conforms to A Place to Grow.

3.1.2 Provincial Policy Statement

The Provincial Policy Statement, 2020 (the “PPS”) was issued by the Province of Ontario in accordance with Section 3 of the Planning Act. The 2020 PPS applies to all decisions regarding the exercise of any authority that affects a land use planning matter made on or after May 1, 2020.

The PPS provides policy direction on matters of provincial interest related to land use planning and development. It provides a vision for land use planning in Ontario that encourages an efficient use of land, resources and public investment in infrastructure. The PPS encourages a diverse mix of land uses in order to provide choice and diversity to create complete communities. A variety of modes of transportation are required to facilitate pedestrian movement, active transportation opportunities and less reliance on the automobile. The PPS strongly encourages development that will provide long term prosperity, environmental health and social well-being. One of the key considerations of the PPS is that planning decisions ‘shall be consistent’ with the Policy Statement. The following is an analysis of the proposed development in the context of the policies in the PPS.

Policy 1.1.1 provides that healthy, liveable and safe communities are sustained by: promoting efficient development and land use patterns which sustain the financial well-being of the Province

and municipalities over the long term; accommodating an appropriate affordable and market-based range and mix of residential types, employment, institutional, recreation, park and open space, and other uses to meet long-term needs; avoiding development and land use patterns which may cause environmental or public health and safety concerns; avoiding development and land use patterns that would prevent the efficient expansion of settlement areas in those areas which are adjacent or close to settlement areas; promoting the integration of land use planning, growth management, transit-supportive development, intensification and infrastructure planning to achieve cost-effective development patterns, optimization of transit investments, and standards to minimize land consumption and servicing costs; improving accessibility for persons with disabilities and older persons; ensuring that necessary infrastructure and public service facilities are or will be available to meet current and projected needs; promoting development and land use patterns that conserve biodiversity; and preparing for the regional and local impacts of a changing climate.

Policy 1.1.2 requires that sufficient land shall be made available to accommodate an appropriate range and mix of land uses to meet projected needs for a time horizon of up to 25 years. Within settlement areas, sufficient land shall be made available for intensification, redevelopment and designated growth areas.

3.1.2.1 Settlement Areas

Policy 1.1.3.1 of the PPS states that Settlement Areas shall be the focus for growth and development. Settlement Areas are urban areas, rural settlement areas or designated greenfield areas within a municipality where development is concentrated and which have a mix of land uses or lands which have been designated in an official plan for development of the long term planning horizon (25 years).

Land use patterns within Settlement Areas shall be based on a density and mix of uses which: efficiently use land and resources; are appropriate for, and efficiently use, the infrastructure and public service facilities which are planned or available, and avoid the need for their unjustified and/or uneconomical expansion; minimize negative impacts to air quality and climate change, and promote energy efficiency; prepare for the impacts of a changing climate; support active transportation; and, are freight supportive (Policy 1.1.3.2).

Policy 1.1.3.6 provides that new development taking place in designated growth areas should occur adjacent to the existing built-up area and should have a compact form, mix of uses and densities that allow for the efficient use of land, infrastructure and public service facilities.

The Study Area is located within the Urban System identified by the County of Wellington Official Plan. It is outside of the Built Boundary of the Fergus Centre Urban Centre and forms part of the Designated Greenfield Area. As such, the Study Area is considered to be within a designated growth area, as per the policies of the PPS.

Policy 1.1.3.7b) provides that planning authorities should establish and implement phasing policies to ensure the orderly progression within designated growth areas and the timely provision of the infrastructure and public service facilities to meet current and projected needs.

The subject lands are located within an area identified as a Secondary Planning Area on the Township of Centre Wellington Official Plan. This MESP and Secondary Plan provides an integrated planning approach for future urban development within the Study Area.

3.1.2.2 Housing

Policy 1.4.1 provides that planning authorities shall maintain, at all times, the ability to accommodate residential growth for a minimum of 15 years through residential intensification, redevelopment and lands which are designated and available for residential development. Further, Policy 1.4.3 of the PPS states that planning authorities shall provide for an appropriate range and mix of housing options and densities to meet projected market-based and affordable housing needs of current and future residents of the regional market area.

Implementation of the MESP includes the preparation of a Secondary Plan. The Secondary Plan will provide a land use vision and policy framework for the Study Area. The designation of land for development and the consideration of a servicing strategy will contribute to the lands designated and available for residential within the Township. The policies of the Secondary Plan consider the appropriate range and mix of housing options and densities for the Study Area.

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

Policy 1.5.1 of the PPS states that healthy, active communities should be promoted by: planning public streets, spaces and facilities to be safe, meet the needs of pedestrians, foster social interaction and facilitate active transportation and community connectivity; and, planning for a full range and equitable distribution of publicly accessible built and natural settings for recreation.

The MESP includes consideration of public spaces, recreation, parks, trails and open space. Based on the findings of the MESP, it is the intent that open space lands will be designated accordingly through the Secondary Plan and parks and trails will be implemented through plans of subdivision.

3.1.2.4 Municipal Servicing and Stormwater Management

Policy 1.6.1 provides that planning for infrastructure and public service facilities shall be coordinated and integrated with land use planning and growth management. Policy 1.6.6.2 of the PPS, provides that municipal sewage services and municipal water services are the preferred form of servicing for settlement areas.

With respect to stormwater management, policy 1.6.6.7 requires that planning for stormwater management shall: be integrated with planning for sewage and water services and ensure that systems are optimized, feasible and financially viable over the long term; minimize or prevent increases in contaminant loads; minimize erosion and changes in water balance, and prepare for the impacts of a changing climate; mitigate risks to human health, safety, property and the environment; maximize the extent and function of vegetative and pervious surfaces; and promote stormwater management best practices.

The MESP is a long range plan that integrates infrastructure requirements for existing and future land use. The MESP has been integrated with the Secondary Plan process and takes into account land use and servicing issues in identifying a preferred solution. The policies of the PPS regarding servicing and stormwater management are considered in the MESP and Secondary Plan.

3.1.2.5 Transportation

Policy 1.6.7 of the PPS identifies transportation systems should be provided which are safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs. As part of a multi-modal transportation system, connectivity within and among transportation systems and modes should be maintained and improved. Land use pattern, density and mix of uses should be promoted that minimize the length and number of vehicle trips and support current and future use of transit and active transportation.

A detailed assessment of the current road network is included in the Transportation Plan, prepared by Tatham Engineering.

3.1.2.6 Natural Heritage

Policy 2.1.1 of the PPS provides that natural features and areas shall be protected for the long term. Specifically:

- Development and site alteration shall not be permitted in significant wetlands (Policy 2.1.4).
- Development and site alteration shall not be permitted in significant woodlands, significant valley lands, significant wildlife habitat, and significant areas of natural and scientific interest, unless it has been demonstrated that there will be no negative impacts to the natural features of the ecological functions (Policy 2.1.5).
- Development and site alteration shall not be permitted on adjacent lands to natural heritage features or areas unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions (Policy 2.1.8).

A Natural Heritage Existing Conditions Report and an Environmental Impact Assessment (“EIA”) have been undertaken to document the limits of the existing natural heritage features and described primary recommended buffers. Implementation of the recommendations from the EIA is intended to occur through the Management Plan and the Secondary Plan process. Through the Secondary Plan process, the boundaries of the natural heritage features have been defined, based on the limits of the existing features and recommended buffers, and appropriate land use designation have been applied.

3.1.2.7 Water

Policy 2.2 of the PPS sets out policies requiring that planning authorities protect, improve or restore the quality and quantity of water. Specifically, Policy 2.2.2 provides that development and site alteration shall be restricted in or near sensitive surface water features and sensitive ground water features such that these features and their related hydrologic functions will be protected, improved or restored.

A Surface Water, Floodplain Hydraulics and Erosion Assessment as well as a Hydrogeological Investigation have been completed. The findings of this reporting has been integrated into the MESP.

3.1.2.8 Natural Hazards

Policy 3.0 of the PPS provides policies related to reducing the potential for public cost or risk to Ontario's residents from natural or human-made hazards. Policy 3.1 states that development shall generally be directed to areas outside of hazardous lands adjacent to river, street or lake systems which are impacted by flooding hazards or erosion hazards.

A Surface Water, Floodplain Hydraulics and Erosion Assessment has been completed. This assessment included a preliminary natural hazards study related to establishing the flood and erosion control limits associated with Nichol Drain No. 2 across the Study Area. This information has been used to identify key development constraints.

3.1.2.9 PPS Summary

This summary above includes a review of the relevant key policies of the Provincial Policy Statement that have been taken into consideration through the preparation of the MESP. The Secondary Plan has been prepared to be consistent with the policies of the PPS.

3.1.3 *County of Wellington Official Plan*

The County of Wellington Official Plan was adopted by Wellington County Council on September 24, 1998 and approved by the Ministry of Municipal Affairs on April 13, 1999. It came into effect on May 6, 1999. It has since been amended, including by a five year review, OPA 81, adopted by the County of Wellington on September 26, 2013 and approved by the Ministry of Municipal Affairs and Housing on April 28, 2014.

The County Official Plan provides a consistent set of policies across the County intended to provide sufficient detail for the entire County. Local municipalities have the option, per Section 2.7, to rely on the County's official plan or develop their own more detailed policies. In the Township of Centre Wellington, a local municipal official plan also applies to the delineated Urban Centres.

The County Official Plan designates three major land use systems – the Greenlands System, the Rural System and the Urban System. The Greenlands System consists of natural heritage features. The Rural System consists of prime agricultural areas, and the Urban System consists of Hamlets and Urban Centres. The Study Area is designated Urban Centre, Greenlands and Core Greenlands, as shown on Schedule A1 of the County Official Plan (**Figure 2**).

Section 2.8 of the County Official Plan sets out policies with respect to future Secondary Plans and states that Secondary Plans may be established for all or part of a local municipality either as part of the County official Plan or as locally adopted Official Plans. Secondary Plans will complement the County's Plan by providing greater detail or clarity with respect to local issues. The County Official Plan is to be amended when secondary or local plans are proposed.

The MESP includes a recommended Secondary Plan that will form the basis of an Official Plan Amendment, to be approved by Township and County Council. The Secondary Plan provides a land use vision and policy framework for the Study Area that conforms to the County Official Plan and provides greater detail and clarity with respect to the Study Area.

3.1.3.1 Growth Strategy

Section 3.1 of the County Official Plan sets out the growth strategy for the County. This strategy encourages development patterns which are cost efficient; environmentally sound; compatible with existing uses; maintain small town character; maintain resource land; and provide access to community services and facilities. In order to achieve the general growth strategy, the majority of growth will be directed to urban centres that offer municipal water and sewage services.

Per Table 1 of the County Official Plan, The projected growth in the County to 2041 is a population of 140,000. A total of 62% of this population is projected to be in Urban Centres. The projected growth for Centre Wellington is set out on Table 5 of the County Official Plan. The Fergus Urban Centre is projected to have a total population of 31,630 people and 11,415 households by 2041.

Section 4.4.1 of the County Official Plan requires that the County will ensure that residential growth can be accommodated for a minimum of 10 years through residential intensification, redevelopment and lands which are designated and available for new development.

It is noted that the Provincial Policy Statement, 2020, requires that sufficient land shall be made available to accommodate an appropriate range and mix of land uses to meet projected needs for a time horizon of up to 25 years. Planning authorities are also required to maintain the ability to accommodate residential growth for a minimum of 15 years through residential intensification and redevelopment and lands which are designated and available for residential development.

The Secondary Plan will result in lands within the Fergus Urban Area being designated as contemplated in the County Official Plan.

3.1.3.2 Urban System – Designated Greenfield Area

The Study Area is located within the southern portion of the Fergus Urban Centre, outside of the identified Built Boundary. Accordingly, the subject lands form part of the Designated Greenfield Area.

The Urban System identified by the County Official Plan includes Hamlets and Urban Centers. Section 7.2 provides that new development and increases in population will be directed to the urban system, particularly to those areas with full municipal services. In accordance with Section 7.3, land use patterns in the urban system shall be based on densities and a mix of land uses which efficiently use land and resources; are appropriate for and efficiently use the infrastructure and public service facilities which are planned or available and avoid the need for their unjustified and/or uneconomic expansion; minimize negative impacts to air quality and climate change and promote energy efficiency.

Section 7.4.1 provides that Urban Centres are expected to provide a full range of land use opportunities. Residential uses at various densities, commercial, industrial and institutional uses, as well as parks and open space will be permitted where compatible and where services are available. Section 7.5.3 provides that detailed official plan designations and zoning regulations will identify the location and nature of permitted uses in Urban Centres.

Policies regarding Greenfield housing are set out at Section 4.4.4 of the County Official Plan which state that new developments will be required to achieve densities which promote the overall

greenfield density target of 40 persons and jobs per hectare and, specifically, strive to achieve at least 16 units per gross hectare in newly developing subdivisions. Somewhat lower densities may be considered in newly developing subdivisions where there are physical and environmental constraints. Medium density housing types are encouraged in new subdivisions and other greenfield areas. The Greenfield Housing density target contained in the County Official Plan conforms to the density target for Wellington County set out in A Place to Grow Growth Plan for the Greater Golden Horseshoe.

In accordance with the County Official Plan and the Growth Plan, density calculations exclude environmentally protected features, rights-of-way for electricity transmission lines, freeways, railways, employment areas and cemeteries.

The policies regarding the Designated Greenfield Area set out in the County Official Plan and the density targets required by the County Official Plan and A Place to Grow form the basis for the Secondary Plan. The MESP is intended to ensure the Study Area can be appropriately serviced to support the planned development of the Study Area.

3.1.3.3 Greenlands System

The Study Area is bisected by a creek which is surrounded by environmental features. In addition, a wetland is located along the western portion of the Study Area. These environmental features form part of the County's Greenlands Network and are designated Core Greenlands or Greenlands by the County Official Plan.

Core Greenlands are areas within the Greenlands System that have greater sensitivity or significance. These areas include provincially significant wetlands, all other wetlands, habitat of endangered or threatened species and fish habitat; and hazardous lands. Section 5.4 of the Official Plan provides that these areas will be identified in policy and protected.

Greenlands include other significant natural heritage features, including habitat, areas of natural and scientific interest, streams and valleylands, woodlands, environmentally sensitive areas, ponds, lakes and reservoirs and natural links. Section 5.5 provided that these areas are intended to be afforded protection from development or site alteration which would have negative impacts.

Preparation of this MESP included undertaking analysis related to existing conditions within the Study Area, field investigations and studies related to the natural environment. The extent of natural heritage features has been delineated and recommended buffers have been identified. Information related to natural heritage features, including impact analysis and recommendations related to enhancement and restoration, informed the land use plan, servicing strategy and policy framework to ensure these areas are identified in policy and protected from development.

3.1.3.4 Servicing

Section 11 of the County Official Plan provides policies with respect to water and waste water services, stormwater management facilities and waste management service. Section 11.2.4 provides that municipal services are the preferred method of servicing in all urban centres.

Local municipalities are responsible for the operation of publicly owned water and waste water systems. Stormwater management is primarily a local responsibility. The County is responsible for

reviewing and approving stormwater facilities in plans of subdivision and for stormwater management on County Roads.

This MESP outlines a framework related to infrastructure projects required to provide adequate servicing infrastructure for the subject lands and identifies a stormwater management strategy including the preferred number, size and location of stormwater management ponds.

3.1.3.5 Transportation

The Study Area is bisected by Provincial Highway No. 6./ Tower Street which is under the jurisdiction of the Ministry of Transportation Ontario ("MTO"). Per Section 12.5.2, Provincial highways generally function as major roadways or arterials but are regulated under the Public Transportation and Highway Improvement Act. Access will only be considered to those properties abutting a provincial highway that meet the minimum safety and geometric requirements of the Ministry of Transportation.

The Study Area is bounded by Scotland Street to the east, Second Line to the South, Guelph Street in the west and existing development on local streets to the north. None of the roadways within the Study Area or adjacent roadways are County Roads.

3.1.3.6 Summary

The Secondary Plan conforms to the County of Wellington Official Plan. The County of Wellington is presently preparing a Municipal Comprehensive Review ("MCR") to update the Official Plan policies to prepare for added growth.

3.2 County Official Plan Review

The County of Wellington is currently undertaking a Municipal Comprehensive Review ("MCR") and the Official Plan five-year review process. The County is required to update the Official Plan to the current version of A Place to Grow, Growth Plan for the Greater Golden Horseshoe (the "Growth Plan"), to a 2051 horizon, including a review and evaluation of the minimum greenfield density forecasts contained in the Growth Plan.

At the time of writing, the County had prepared the Phase 2 Land Needs Assessment. The Land Needs Assessment is a process that determines the amount of land required to accommodate the growth projections, the need for any Employment Area land conversions, the need for any urban settlement area boundary expansions and the quantity of excess lands.

The County's Official Plan is being updated through a series of Official Plan Amendments that will bring the County Official Plan into conformity with recent changes to provincial land use plans, consistency with the Provincial Policy Statement and address other legislative changes.

The County's Official Plan review is anticipated to be completed following completion of the MESP and Secondary Plan Process. Phase 2 LNA recognizes that the final Secondary Plan may impact the land needs for Centre Wellington.

The Phase 3 MCR will focus on Settlement Area Boundary Expansions with a review of location options for new Community Areas and Employment Areas. It will also include a review of the

redesignation of Future Development Lands and the locations of Excess Lands The findings of the South Fergus MESP and Secondary Plan should be considered through the Phase 3 MCR

3.3 Township of Centre Wellington Municipal Official Plan

The Township of Centre Wellington Municipal Official Plan (the “Official Plan”) was adopted by Council on November 24, 2003 and approved by the Ontario Municipal Board on Map 31, 2005. The Municipal Plan has since been amended, including by Official Plan Amendment 5, which brought the Municipal Plan into conformity with the Growth Plan. The Municipal Plan applies only to the Urban Centres in the County of Wellington which include Fergus, Elora-Salem and Belwood.

The Study Area is located within the Urban Boundary of the Fergus Urban Centre. It is within an area identified as a Secondary Planning Area and as “Future Residential” and “Future Employment Lands” on Schedule A-1 of the Official Plan (**Figure 3**). These classifications are not land use designations and are illustrated for public notice to show the general desired mix of land uses in each area as contemplated by the Township at the time the Official Plan was prepared in 2003.

3.3.1.1 Secondary Plan Area

Section D.11 of the Official Plan provides policies with respect to Secondary Plan Areas and states that secondary plans represent a method to undertake more detailed planning of undeveloped areas of the municipality to facilitate the orderly and ultimate development of these areas. These plans address the mix, arrangement and density of land uses; the local street pattern; the size and location of neighbourhood parks and schools; and the location of major services. Section D.11.4.3 sets out the following requirements for Secondary Plans, including, but not limited to:

- a) a general statement of the character of the area along with detailed development objectives;
- b) a conceptual plan for the area which establishes the boundaries of the area, and a land use and transportation framework for the lands, together with a description of the concept and desired future for the area;
- c) policies establishing a strategy for the provision of housing, employment, community facilities, open space, commercial services and other land use matters including location form and intensity of development for such uses, desired forms of housing, range of housing densities and unit types and opportunities for modestly priced housing;
- d) Detailed urban design policies and directions;
- e) A detailed transportation plan, including pedestrian and bicycle paths;
- f) Detailed strategy for the protection of the natural environment including the preservation of natural areas, woodlots and vistas and the maintenance or enhancement of water quality, and establishment of an open space system and recreation facilities;
- g) Servicing strategy;

- h) Population capacity and employment targets, the location, types and density of proposed land uses, and the proposed phasing, servicing and financing of development; and,
- i) Other implementation measures including leisure design policies, environmental/servicing design policies and heritage and archaeological requirements.

A number of background studies are required to be undertaken to complete a Secondary Plan, including: a stormwater management plan, transportation plan, environmental impact assessment, servicing strategy, urban design guidelines, market analysis, development charges studies, development phasing studies, fiscal impact studies, parks concept plan, archaeological assessment, heritage resources assessment, hydrogeological and groundwater impact assessment.

The MESP, including this report, the Existing Conditions Report and the technical studies appended hereto, satisfies the requirement for background studies to be completed as part of the Secondary Plan process. The Secondary Plan has been prepared in accordance with the requirements of the Township Official Plan.

3.3.1.2 Housing

Section C.5.2 requires that the Township shall maintain a minimum ten year supply of residentially designated land within each Urban Area at all times. It is noted that the Provincial Policy Statement, 2020 requires that planning authorities shall maintain, at all times, the ability to accommodate residential growth for a minimum of 15 years through residential intensification, redevelopment and, if necessary, lands which are designated and available for residential development.

In Greenfield Areas, the Township will encourage increased densities and a broader mix of housing. Section C.5.6 of the Township Official Plan sets out the policies applicable to Greenfield Housing which require new developments to achieve densities which promote the overall greenfield density target of 40 persons and jobs per hectare, including 16 units per gross hectare in newly developing subdivisions. The introduction of medium density housing types in other greenfield areas is also encouraged.

The Secondary Plan has been prepared in accordance with the density target and considers the appropriate range and distribution of housing types.

3.3.1.3 Natural Heritage

Schedule A1 of the Township Official Plan designates portions of the Study Area as Core Greenlands, consistent with the designation in the County of Wellington Official Plan. Lands designated Core Greenlands form part of the Township's Natural Heritage System. Per Section C.3.1, lands designated Core Greenlands have a greater sensitivity or significance and include: provincially significant wetlands, habitat of endangered or threatened species and floodways and hazard lands.

Per Section D.8.4, the Core Greenlands designation is based on mapping provided by the County, in consultation with the Grand River Conservation Authority. The limits of the Core Greenlands designation may need to be revised by more detailed mapping on individual sites.

The Environmental Impact Assessment prepared through the MESP process documents the limits of existing natural heritage features and recommends 30 metre buffers. The Secondary Plan includes

revised boundaries of the Core Greenlands designation within the Study Area, defined based on the limits of existing features and recommended buffers identified through the EIA.

3.3.1.4 Municipal Servicing and Stormwater Management

The Township Official Plan requires that all new development in an Urban Center shall be provided with full municipal services including: sanitary and sewage disposal facilities, water supply facilities, storm drainage facilities, public roads and telecommunications.

With respect to the provision of sewer and water services, Section C.6.2 requires that the Fergus Urban Centre has municipal sewer and water services and that it is the long-term intention to eventually provide municipal sewage and water services to all of the areas designated within the Fergus Urban Centre.

Schedule B (**Figure 4**) of the Official Plan identifies the Study Area as being within a Future Municipal Service Areas – Southwest with a future Sewage Pumping Station to the north of the Study Area. In design of servicing for new growth, the Sanitary Sewer Servicing Areas shall be considered and infrastructure sized accordingly.

The Township encourages effective management of stormwater drainage and run-off through the implementation of best management practices and stormwater management techniques, in accordance with applicable provincial policies and guidelines.

It is noted that Council has directed Township staff to proceed with a Municipal Class Environmental Assessment for the expansion of the Union Street West Waste Water Pumping Station to service future growth in the Fergus Urban Centre. This MESP sets out a servicing strategy for the Study Area.

3.3.1.5 Transportation

The Township has an established hierarchy of roads which include: arterial roads, collector roads and local road. Schedule B to the Official Plan (**Figure 4**) identifies existing roads within and surrounding the Study Area as:

- Highway 6 is identified as an Arterial Road
- Second Line is identified as a Future Arterial Road
- Guelph Road is identified as a Future Collector Road
- McQueen Boulevard is identified as a Collector Road and identified to be extended to the east and west.

A detailed assessment of the current road network is included in the Transportation Plan, prepared by Tatham Engineering.

3.3.1.6 Parkland

Per Section C.12 of the Official Plan and the Township's Parks and Recreation Strategic Master Plan, the Township shall endeavor to provide approximately 3 hectares of parkland or open space for every 1,000 people in the Township. Lands suitable for municipal parkland include:

- Lands adjacent to established parks, school yards or storm water management areas,
- Lands within easy walking distance of the residential area served,
- Lands located near the highest density residential developments,
- Lands with adequate street frontage to provide for visibility and safety,
- Lands that are level, regularly shaped and not susceptible to major flooding, poor drainage, or other environmental or physical conditions that would interfere with their development or use for public recreation.

The Township encourages the conveyance of lands with environmental constraints or significant natural features to the Township or the GRCA for passive recreation or conservation use. These lands will generally be excluded for the purpose of calculating the required parkland dedication. A parkland strategy, including the approximate location for future parks within the Study Area, forms part of the Secondary Plan.

3.3.1.7 Official Plan Summary

This report provides a summary of the relevant policies of the Township of Centre Wellington Official Plan which have been taken into consideration through the preparation of the MESP, including the requirements for Secondary Plans. The Secondary Plan has been prepared in accordance with and to conform to the Township Official Plan.

3.4 Township of Centre Wellington Zoning By-law

The Township of Centre Wellington Zoning By-law 2009-045 (the “Zoning By-law”) was adopted by Council in 2009. A number of different zones apply to the Study Area, as illustrated on **Figure 5**. Current zoning of the Study Area are described as follows:

- **Future Development** - The majority of the Study Area is zoned Future Development. The primary purpose of this zone is intended to identify lands where future development may occur subject to appropriate planning studies and zoning regulations. Only uses, buildings and structures lawfully existing on the date of passing of the Zoning By-law are permitted.
- **Environmental Protection** - Lands designated Core Greenlands by the County of Wellington Official Plan have been zoned EP - Environmental Protection. The Core Greenlands features include provincially significant wetlands, wetlands, habitat of endangered or threatened species, floodways, and hazardous lands. The primary purpose of this zone is intended to prohibit development on designated Core Greenlands. Core Greenlands include provincially significant wetlands, wetlands, habitat of endangered or threatened species, floodways, and hazardous lands.

The *Environmental Protection Overlay* corresponds to the Greenlands designation in the County Official Plan, as well as the GRCA regulated area limits (where mapping is available). This is not a separate zone but an overlay that will indicate to property owners and the zoning administrators that a physical feature is present that may require further review or

permissions prior to development approvals or the issuance of a building permit. Where the overlay is indicated on a zoning map, the provisions and regulations of the underlying zone continue to apply, but there may be additional provisions and regulations applied, or conditions that must be fulfilled prior to the granting of any planning approvals or the issuance of any building permit.

- **Agricultural** - The lands municipally known as 7856 Second Line are zoned Agricultural (A), subject to exception 79.2. The 'A' zone permits a range of agricultural uses. However, exception A79.2 limits permitted uses to only include a nursery business, including the sale of nursery stock and landscape materials, greenhouses, a single detached dwelling and accessory uses. Livestock housing facilities are not permitted.

Implementation of the Secondary Plan will proceed through future Planning Act applications including Zoning By-law Amendment and Plan of Subdivision Applications. A comprehensive zoning by-law amendment for the South Fergus Area to implement the Secondary Plan is not planned to occur through this process. Rather, site specific zoning by-law amendment applications are anticipated to permit future development within the Study Area.

3.5 GRCA Policies

The Grand River Conservation Authority Policies for Administering Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation (Ontario Regulation 150/06), (the "GRCA Policy"), was approved and came into effect on October 23, 2015.

Currently the Grand River Conservation Authority ("GRCA") regulates development in river or stream valleys, wetlands, Lake Erie shorelines, inland lakes and hazardous lands within the Grand River Watershed. **Figure 6** to this Report illustrates extent of the GRCA Regulated Area on the Study Area. Updates to the GRCA mapping to reflect the confirmed feature limits may be required. The Secondary Plan will establish the natural feature limits.

Future applications and technical studies and/or assessments, site plans and/or other plans may be required to address development in areas regulated by the GRCA.

The MESP has regard to the GRCA Policies including analysis of any activities proposed within the Regulated Area.

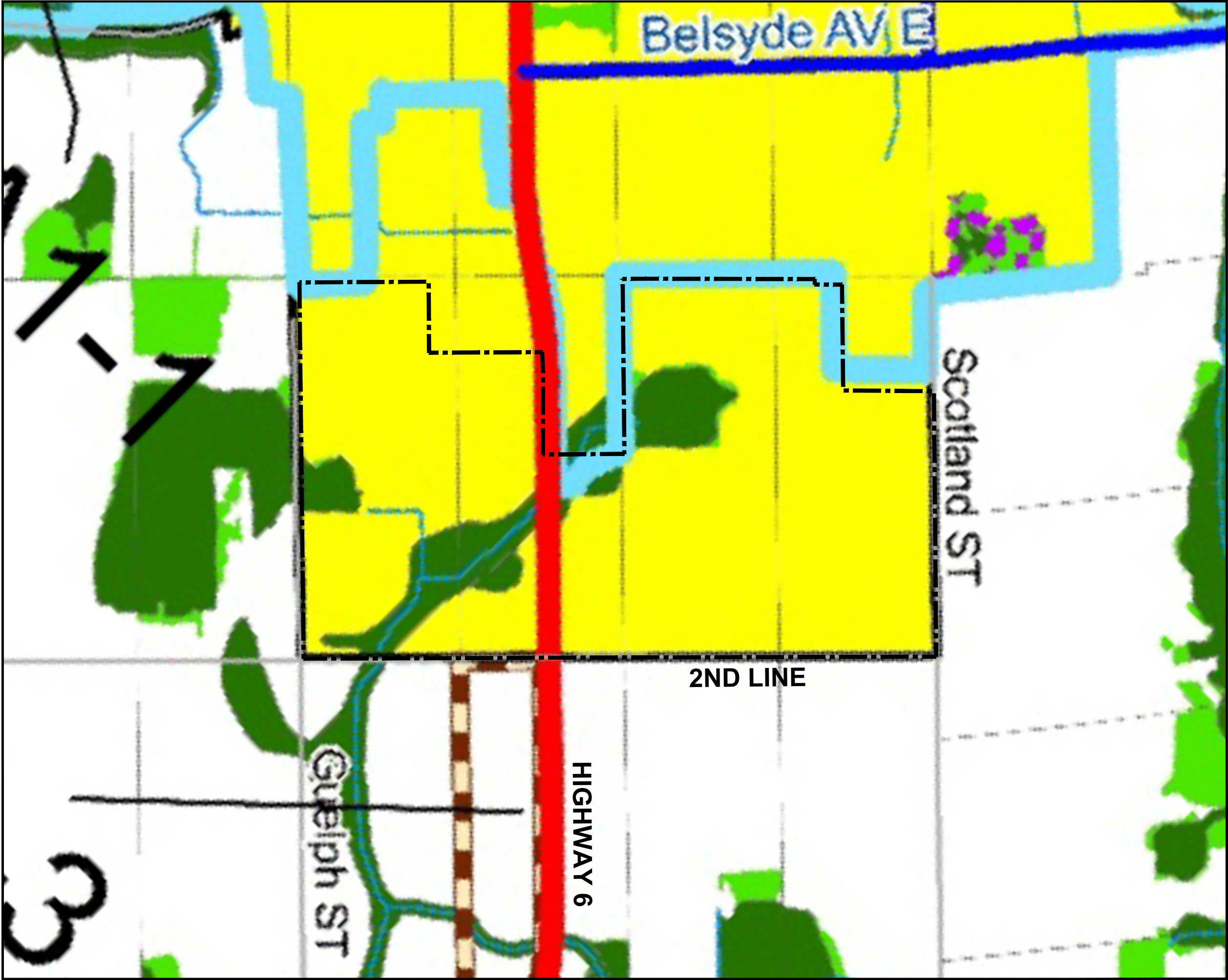


Figure # 2
County of Wellington
Official Plan
Schedule A1
Centre Wellington
South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington

Legend

- Study Area (±151 ha)
- The Greenlands System**
 - Core Greenlands
 - Greenlands
 - Earth Science ANSI
- The Rural System**
 - Prime Agricultural
 - Recreational
 - Rural Employment Area
 - Policy Area
 - Community Planning Study Area
- The Urban System**
 - Hamlet Area
 - Urban Centre
- Other**
 - Trail
 - Landfill Site
 - Montrose Water Management Protection Area
 - Grand River Crossing
 - Deferral
 - County Roads
 - Provincial Highways
 - Built Boundary

Base Map Source:
 County of Wellington Official Plan, Schedule A1 Centre Wellington (Updated January 8, 2021)

DATE: May 2021	
SCALE: 1:10,000	
FILE: 19144A	
DRAWN: DGS	

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









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Figure # 3
Township of Centre Wellington
Official Plan
Schedule A-1 Land Use Plan
Fergus, Elora-Salem

South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington

- Legend**
-  Study Area (±151 ha)
 -  Residential
 -  Highway Commercial
 -  Core Greenlands
 -  Recreational
 -  Secondary Planning Area
 -  Future Residential
 -  Future Employment Lands
- Note: The identification of Future Residential and Future Employment Lands is for public notice only and is subject to future considerations through Secondary Plan requirements.
-  Urban Boundary
 -  Built Boundary
 -  Policy Area
 - S.C.** Shopping Centre

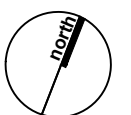
Base Map Source:
 Township of Centre Wellington Official Plan, Schedule A-1 Land Use Plan
 (Updated: November 2016)

DATE: May 2021

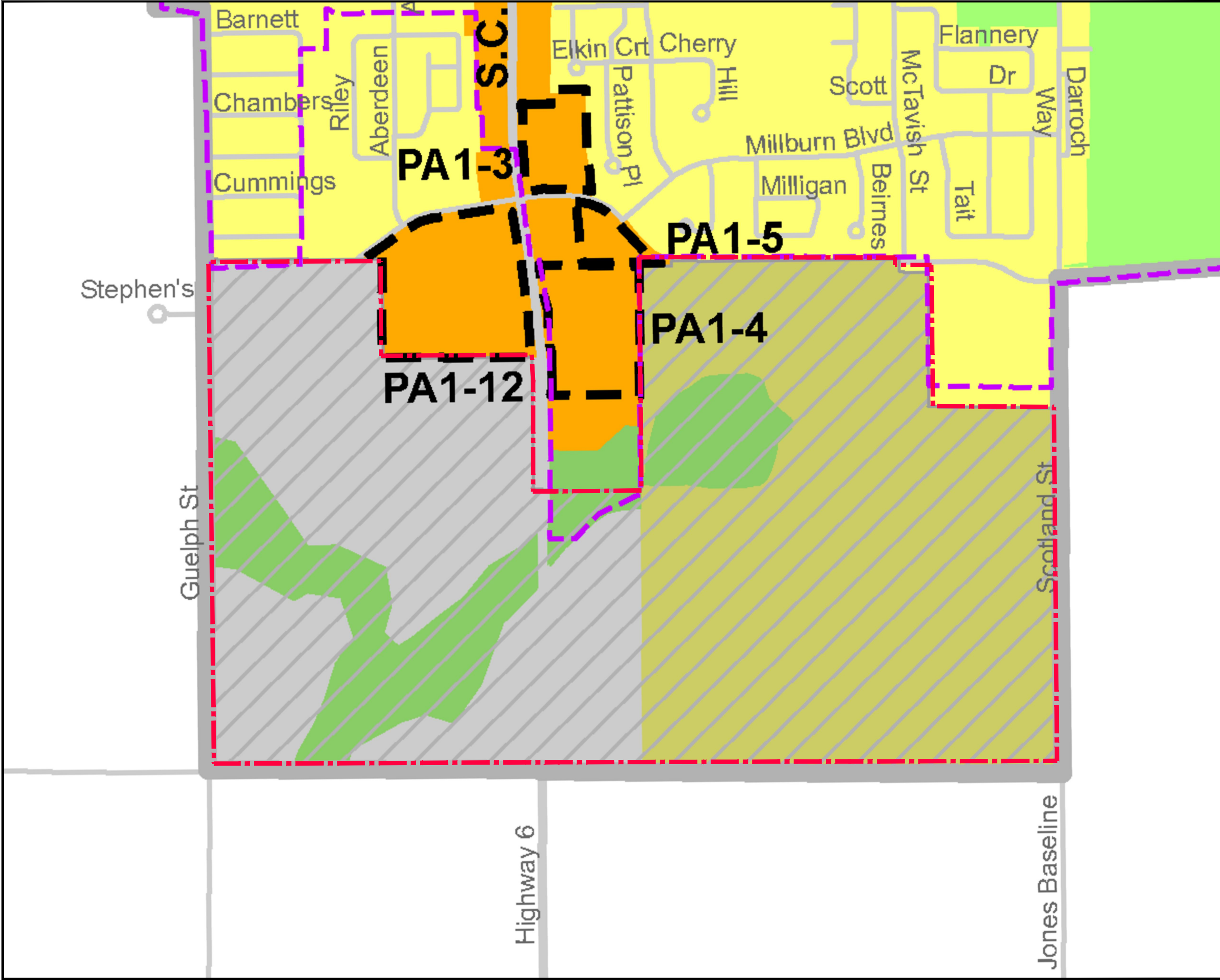
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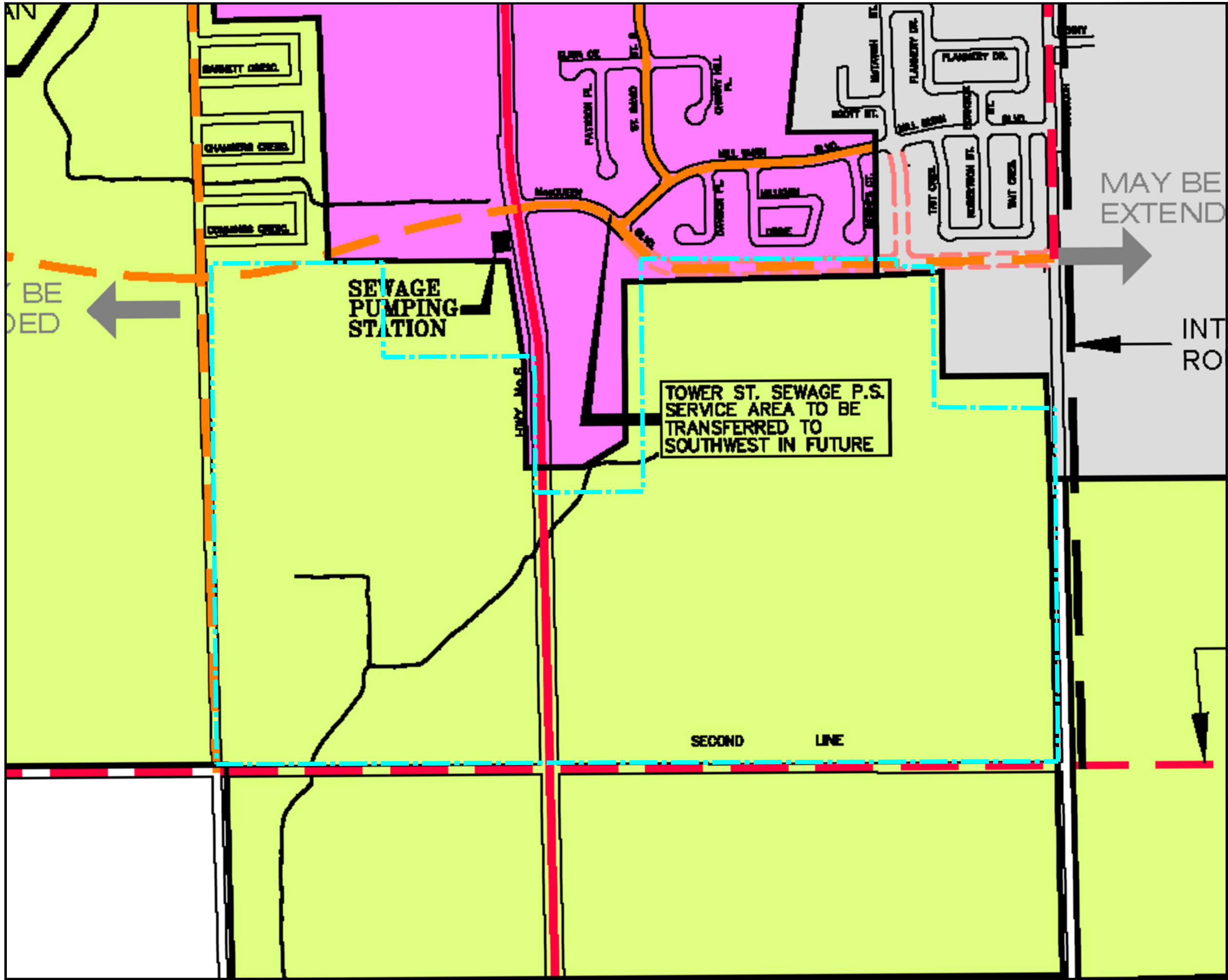


Figure # 4
**Township of Centre Wellington
 Official Plan
 Schedule B
 Municipal Servicing Plan**
 South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington

Legend

Study Area (±151 ha)

ELORA/SALEM MUNICIPAL SERVICE AREAS

- SOUTHEAST
- SOUTHWEST
- TOWER STREET

ROADS

- FUTURE ROADS
- ARTERIAL ROAD
- FUTURE ARTERIAL ROAD
- COLLECTOR ROAD

Base Map Source:
 Township of Centre Wellington Official Plan, Schedule B Municipal Servicing Plan (June 2004)

DATE: May 2021

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DRAWN: DGS

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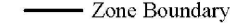

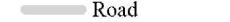

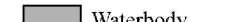


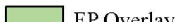
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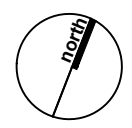
Figure # 5
Township of Centre Wellington
Comprehensive Zoning By-law
2009-045

South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington

- Legend**
-  Study Area (±151 ha)
 -  Zone Boundary
 -  Heritage Area Overlay
 -  Road
 -  Parcel Fabric
 -  Waterbody
 -  Watercourse
 -  EP
 -  EP Overlay



Base Map Source:
 Township of Centre Wellington Comprehensive Zoning By-law 2009-045, Schedules 74, 79 and 84 (Office Consolidation February, 2021)

DATE: May 2021	
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FILE: 19144A	
DRAWN: DGS	

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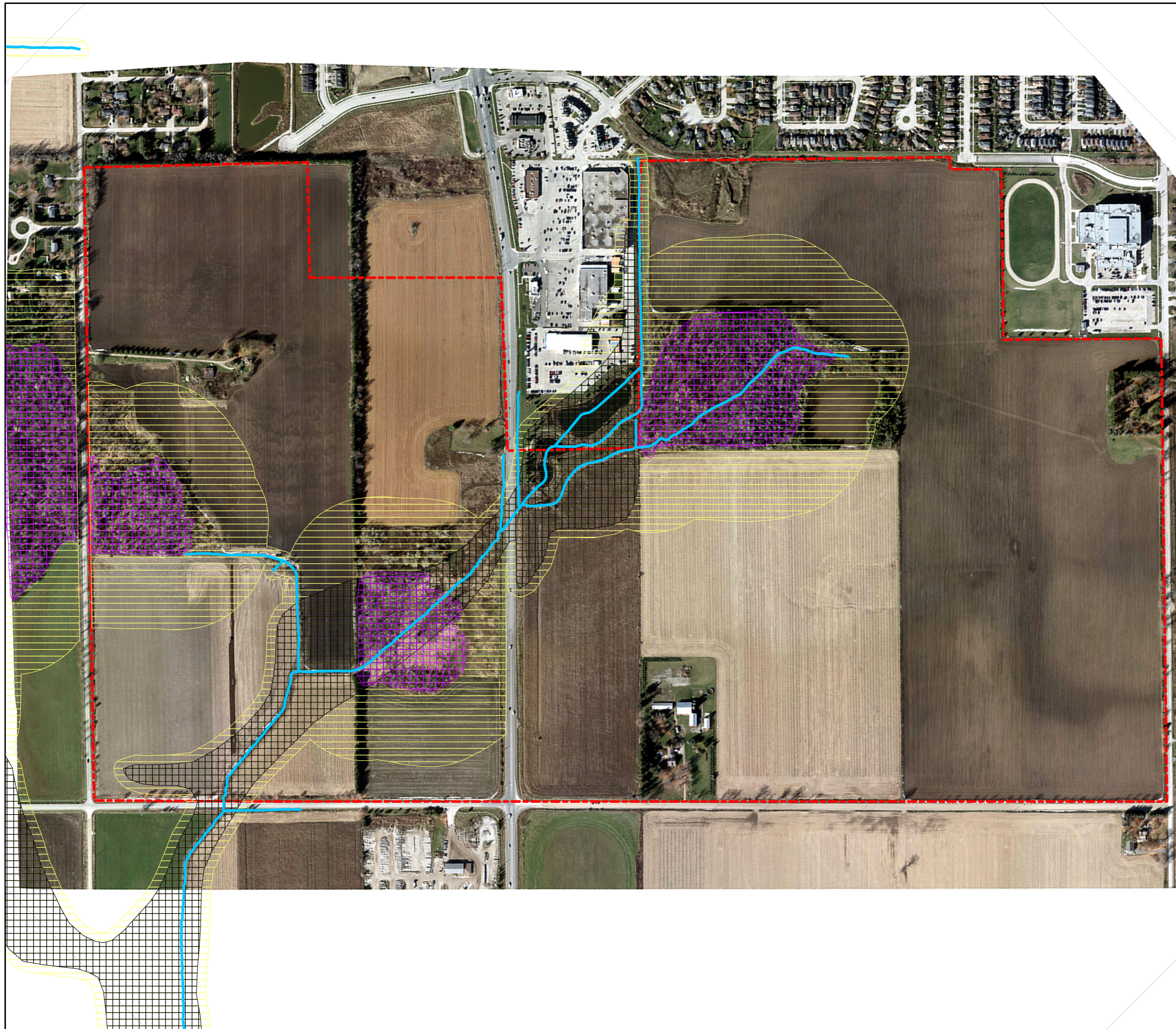
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Figure # 6
Grand River Conservation Authority Data

South Fergus MESP Secondary Plan
Town of Fergus
Township of Centre Wellington
County of Wellington

Legend

-  Property Boundary
-  Watercourse
-  Regulatory Floodplain
-  Regulation Limit
-  Wetland



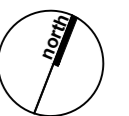
Base Map Source: Northway Photomap Remote Sensing Ltd.

DATE: June 12, 2021

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4.0 EXISTING CONDITIONS SUMMARY & CONSTRAINT ANALYSIS

This section documents and summarizes the existing conditions and various constraints within the Study Area that have potential to cause limitations to how the lands can be planned and developed. Constraints are based on the technical work completed by Tatham Engineering Limited, Fri Ecological Services and the review of the existing background information available for the subject lands and include natural heritage features, transportation networks, cultural heritage resources and surrounding development.

The following section provides an analysis and summary of the constraints that were identified through technical studies completed for the lands in order to analyse how the constraints may affect future development of the Secondary Plan area. Constraints have been consolidated to establish a Structure Plan (**Figure 7**) that was used as a baseline for determining and analysing land use options.

4.1 Cultural Heritage

The Cultural Heritage Evaluation Screen involved a review of the County of Wellington Official Plan and Township of Wellington Official Plan policies with respect to cultural heritage resources, a review of the Township of Centre Wellington's Heritage Property Mapping and Cultural Heritage Landscape Study, as well as correspondence with Township Staff. **Figure 8** indicates identified Cultural Heritage Resources in the Study Area.

The subject lands do not contain any buildings or structures designated under Part IV of the *Ontario Heritage Act* or any Heritage Conservation Districts designated under Part V of the *Ontario Heritage Act*. Further, the Study Area is not located within a Heritage Area identified on Schedule A of the Township Official Plan.

There is one property within the Study Area which is listed on the Township of Centre Wellington Heritage Register. This property is municipally known as 7856 Second Line and it is located on the north side of Second Line, east of Highway 6. The information on the Township's Heritage Register identifies a 1.5 storey dwelling built in 1880 with stretcher brick, medium gable roof, yellow quoins and voussoirs and restored front door and windows. As this property is not designated under Part IV or V of the *Ontario Heritage Act*, no additional information is available.

The MESP considers the location of the house identified in the Township's Municipal Heritage Register. The recommended Secondary Plan and Urban Design Guidelines have been drafted in

recognition of this cultural heritage resource. Further analysis will be required at the time of development of the lands.

4.2 Archaeological Resources

A Stage I and II Archaeological Assessment has been prepared for the Study Area (**Appendix K**). The recommendations contained in this assessment provided that no further archaeological assessment of the Study Area is warranted and the Study Area is clear of any archaeological concern.

There are no constraints related to archaeological resources.

4.3 Natural Heritage Resources

The Environmental Impact Assessment (“EIA”), prepared by FRi Ecological Services, identifies the following Ecosites within the Study Area:

- Agricultural – this includes all lands currently used for agricultural (cash cropping) purposes.
- Anthropogenic – this relates to the two properties containing farmhouses, barns and outbuildings.
- Dry to Moist Old Field Meadow Type – these areas are not currently under intensive agriculture and are dominated by grasses and forbs.
- Mineral Cultural Thicket – this area likely transitioned from an old field meadow as shrub species have become established.
- Fresh to Moist White Cedar Coniferous Forest Type – this occurs mainly as a fringe around the edge of the easterly wetland feature.
- Naturalized Spruce or Cedar Hedgerow – This is mainly a planted narrow hedgerow of Norway Spruce with some Eastern White Cedar.
- Fresh to Moist Poplar Deciduous Forest Type – this occurs adjacent to the wetland features in the central and eastern portion of the Study Area.
- Naturalized Maple Hardwood Treed Hedgerow – this area a mainly a single row of silver maple along Second Line and Scotland Street.
- Naturalized Ash Hardwood Treed Hedgerow – this area is located along Second Line and features ash trees in various levels of decline.
- Reed-canary Grass Mineral Meadow Marsh Type – This is a small area mainly colonized by phragmites.
- Cattail Mineral Shallow Marsh Type – The water levels in this area are largely determined by beaver activity. This is an area that is essentially a monoculture of cattails.
- Open Aquatic – Three stormwater management ponds straddle the Study Area boundary on the east side of Highway 6.

- Black Ash Mineral Deciduous Swamp – this forms the bulk of wetland habitat within the Study Area.
- Willow Mineral Thicket Swamp – this is an extension of the ash deciduous swamp on the westerly wetland.
- Deciduous Thicket Hedgerow – this is a shrub thicket that boards the banks of the small stream within the Study Area.

Figure 9 illustrates the extent of the ecosites within the Study Area.

The Study Area also features a number of natural heritage features, including:

- Provincially Significant Wetland (“PSW”) - A portion of the Speed-Lutteral-Swan Creek Wetland Complex bisects the Study Area and has been designated as provincially significant. The majority of the ecosites identified, apart from agricultural and anthropogenic ecosites are within or adjacent to the PSW.
- Significant Woodland – there are three significant woodlands within the Study Area, roughly corresponding with the three wetland areas.
- Habitat of Endangered or Threatened Species – There are five confirmed Species At Risk that have potential for habitat within the Study Area including the Bobolink, Eastern Meadowlark, Chimney Swift, Barn Swallow (now downgraded from threatened to special concern) and Bank Swallow.
- Significant Wildlife Habitat –Turtle Nesting Area, Amphibian Breeding (woodland and wetland) habitat were identified in the Study Area. In addition, potential habitat for bat maternity colonies, woodland-area sensitive bird breeding and terrestrial crayfish were identified within the Study Area.

With the exception of the Barn Swallow habitat, all of the natural heritage features are within the area presently designated Core Greenlands by the Township of Centre Wellington Official Plan. The remainder of the Study Area is mainly active agricultural lands. There are no natural functional buffers currently to natural heritage systems present.

As part of the design of the preferred land use options for the Secondary Plan and future policy framework, appropriate buffering and setbacks are recommended in order to ensure the protection of the identified natural heritage feature. The natural heritage features and their recommended buffers are illustrated on **Figure 10**.

Potential Impacts arising from the proposed development were evaluated in the EIS including direct impacts, indirect impacts, induced impacts and cumulative impacts. Detailed impact analysis and mitigation measures will follow in this MESP. The extent of the identified natural heritage features is illustrated on the Structure Plan for the Study Area (**Figure 7**). Further refinement may occur through detailed study and design as part of the plan of subdivision process.

4.4 Soil Conditions

Soils in the Study Area are defined, by the Canada Department of Agriculture's 1936 Soils Survey of Wellington County, as:

- Harrison Loam - well-drained;
- Listowel Loam - imperfectly drained;
- Parkhill Loam - poorly drained; and
- Muck - organic deposits in wet, undrained depressions.

A geotechnical investigation was conducted by Golder and Associates for the Study Area which identified the on-site soils as ranging from sand and gravel to silty clay. The soils are generally sand, silty, silty sand and till near the surface in the lands presently used for agricultural purposes and clayey silt to silty clay in the wetland areas.

There are no constraints related to soil conditions outside of the limits of the natural heritage features.

4.5 Hydrogeological and Groundwater Conditions

A Hydrogeological Study was prepared by WSP Golder to characterize the regional geologic setting and the existing hydrogeological and groundwater conditions. In addition, a groundwater monitoring program was carried out which tracked seasonal groundwater elevations. Infiltration testing was also conducted to determine the suitability of infiltration based low impact development measures and the groundwater recharge requirements for the Study Area.

The findings of this work concluded that the seasonal high groundwater levels across the Study Area are at or within 1.2m of existing grade. Infiltration rates range from 36 mm/hr to 71mm/hr at tested locations.

There are a total of 75 water supply wells located within 500 metres of the Study Area. These are primarily deep drilled bedrock wells. A public use well is located approximately 400 metres to the north of the Study Area. This well is a deep drilled bedrock well. There is also a municipal well located approximately 1.3 kilometers to the northwest of the site. It is also a deep drilled bedrock well.

The Study Area is located within the Wellhead Water Quantity Zone in an area designated by the GRCA as 'Significant Risk'. Portions of the Study Area are within Wellhead Protection Area (WHPA) B/C/D or the 2, 5 and 25 year travel time zones. Portions of the Study Area are also mapped by the GRCA as Significant Groundwater Recharge Areas.

Water quality sampled collected at three borehole locations reported exceedances of cobalt, iron, copper, vanadium and zinc.

4.6 Topography and Drainage Patterns

A drone survey was conducted for the Study Area in the fall of 2020. This data was supplemented by a topographic survey of Nichol Drain No. 2 and other key hydrologic features in the area. This topographic data was used to characterize existing drainage patterns in the Study Area. The lands within the Study Area generally drain overland as sheet flow to Nichol Drain No. 2. The drain runs southwest through the Study Area, crossing Tower Street and Second Line, and ultimately drains to Swan Creek, south of the Study Area. Nichol Drain 2 has been identified as a constraint within the Study Area. No other topographic constraints were identified.

A Fluvial Geomorphological Characterization and Erosion Threshold Assessment was completed by Water's Edge Environmental Solutions, as part of the MESP and identifies the following drainage patterns within and external to the Secondary Plan Area. The existing drainage pattern is shown on **Figure 11** and described below:

- There is a drainage channel to the north of the Study Area. Surrounding lands and a significant portion of the agricultural lands (12.4ha) that comprise the Study Area drain to this drainage channel. This drainage channel drains into the water quantity and water quality control stormwater management facility located west of Nichol Drain No. 2, east of Tower Street, associated with the existing Highway Commercial Development. This facility outlets into Nichol Drain No. 2, upstream of Tower Street.
- Approximately 29.6 hectares of agricultural land outside of the Study Area, west Scotland Street drains overland as sheet flow to a culvert crossing Scotland Street and on to the Study Area. This surface runoff and runoff from the agricultural lands within the Study Area drains overland to the upstream end of Nichol Drain No. 2 and in to the wetland on the western portion of the Study Area. The wetland stores runoff releasing it into Nichol Drain No. 2.
- Nichol Drain No. 2 crosses Tower Street via a culvert after receiving flows from the existing stormwater management facility.
- Approximately 4.9 hectares of agricultural outside of the Study Area and south of Guelph Street drains overland to a culvert crossing Guelph Street, on to the Study Area and into a wetland immediately east of Guelph Street. This wetland drains to a municipal drain which converges with Nichol Drain No. 2. A culvert has been installed at this location.
- A culvert has also been installed at Nichol Drain No. 2 to the west of Tower Street crossing Second Line.
- Approximately 15.3 hectares of undeveloped agricultural land currently drains overland into the existing stormwater management facility in the Westminster Subdivision. The Westminster stormwater management pond outlets to Nichol Drain No. 13.
- Approximate 5.3 hectares at the northwest corner of the Study Area drains north in roadside ditches to Nichol Drain No. 13.

4.7 Existing Stormwater Infrastructure

Existing stormwater infrastructure in the Study Area is limited to drainage channels, municipal drains, a stormwater management facility, tile drains and various culvert crossings. There is also a stormwater management facility to the northwest of the Study Area in the Westminster subdivision. Existing stormwater management infrastructure is shown on **Figure 11**.

The existing stormwater management infrastructure includes:

- Nichol Drain No. 2 Phase 1 Pond – This stormwater management facility was designed to provide water quality and quantity controls for the Cherry Hills Estate development, the Highway Commercial lands along Tower Street, and the northeast portion of the Study Area. This pond was designed with consideration for expansion to accommodate a portion of development within the Study Area.
- Three culvert crossings located on Nichol Drain No. 2 which include a road crossing of Tower Street, a road crossing of Second Line and a farm access crossing.
- Westminster Stormwater Management Pond - This facility was designed to provide water quality and quantity controls for the Westminster subdivision, rear yard drainage from the houses on the south side of Elora Street, highway commercial lands west of Tower Street, undeveloped commercial lands outside the Study Area at the intersection of Tower Street and McQueen Boulevard (approximately seven hectares) and a 10.31 hectares portion of the Study Area.

In addition, there are wetlands within the Study Area which provide water quality and quantity controls as part of the existing drainage system. Existing stormwater management facilities are illustrated on the Structure Plan.

4.8 Hydrologic Analysis

A hydrologic analysis of the Nichol Drain No. 2 watershed upstream of the downstream study limit was completed to quantify the existing condition peak flows within and draining through the Study Area.

Peak flows generated correlate with previously completed Subwatershed Study for minor storms and the Regional storm. For the 1:25 year through 1:100 year storms, the Subwatershed Study peak flows exceed those predicted through this Study. This may be due to the over control of peak flows released from the existing stormwater management facility as it was designed to provide water quantity control for a larger area than is currently developed.

4.9 Natural Hazards

Nichol Drain No. 2 is regulated by the GRCA. To establish the flood hazard limit a topographic survey of Nichol Drain No. 2 was completed and a HEC-RAS hydraulic model of the drain was created. The flood hazard limit is illustrated on **Figure 11**.

During the flood hazard assessment, it was noted that spill occurs across Guelph Line on to the Study Area during the Regional Storm due to insufficient channel capacity in Nichol Drain No. 2. This is exacerbated by the flow constriction caused by the Second Line culvert crossing. Modelling was undertaken to evaluate the impacts floodplain storage, peak flow attenuation and the spill have on the Regional Floodplain upstream of Second Line. The model predicts that water will back up through Nichol Drain No. 2, through the adjoining municipal drain into the wetland immediately west of Guelph Line and overtop the street. Once Guelph Line overtops, the water spills southeast to the intersection of Guelph Line and Second Line and continues southeast until it is reintroduced into Nichol Drain No. 2, approximately 360 metres downstream of Second Line.

A Fluvial Geomorphological Characterization and Erosion Threshold Assessment was prepared to provide the potential geomorphic change and erosion potential for Nichol Drain No. 2. The erosion limits have been established as 20 times the assessed bankfull width of each channel reach. The erosion hazard limits are illustrated on **Figure 11**.

4.10 Existing Sanitary Infrastructure

Fergus is serviced by the Fergus Wastewater Treatment Plan which has an average daily capacity of 8,000m³/day. There are two sewage pumping stations (“SPS”) in South Fergus: the Tower Street SPS and the Union Street SPS.

The Tower Street SPS received and pumps waste water from a large area in South Fergus through a forcemain that discharges to a maintenance hole south of the intersection of Tower Street and Elora Street.

The Union Street SPS service area is limited to the properties west of Tower Street and north of Wellington Street (with the exception of Albert Street). The Union Street SPS pumps wastewater through a forcemain that discharges to a maintenance hole at the intersection of Union Street and Anthol Street. From there, the water flows by gravity to the Fergus WWTP.

The Union Street SPS will receive wastewater flows from the Study Area. In order to accommodate increased wastewater flow, the capacity of the pumping station needs to be expanded. A Municipal Class Environmental Assessment for the expansion to this pumping station is underway and upgrades to the Union Street SPS are planned for 2024.

The current Development Charges Background Study (2021) identifies eight planned sanitary system expansion projects around the Study Area, including:

- Union Street Sewage Pumping Station Upgrades (2024)
- New trunk sewers on Guelph Street from McQueen Boulevard to Second Line (2024)
- New trunk sewers on Second Line from Guelph Street to Highway 6 (2024)
- New trunk sewers on McQueen Boulevard from Scotland Street to Guelph Street (2025)
- New trunk sewers on Guelph Street from Union Street to Elora Street (2027)
- New trunk sewers on Guelph Street from Elora Street to McQueen Boulevard (2027)

- New trunk sewers on Second Line from Highway 6 to Jones Baseline (2027).
- Expansion of the wastewater treatment plant (2025-2027)
- Decommissioning of the Tower Street Sewage Pumping Station.

4.1.1 Existing Water Infrastructure

The Centre Wellington Drinking Water System is supplied by nine groundwater wells, five of which are in Fergus. Chlorinated water from these wells supply the combined Elora-Fergus water distribution system that is comprised of three pressure zones. The Study Area is within the Fergus South pressure zone. The closest well is Fergus Well 5 (Well F5), located at 886 Scotland Street.

The Elora-Fergus water distribution system is comprised of approximately 121 kilometers of watermains and four elevated storage tanks. Water is pumped from Elora to Fergus by the Aboyne Booster Pumping Station.

There are no known constraints in the existing water network that limit the capacity of the water network to meet current demands.

In the Draft Water Supply Master Plan, four potential sites for new water supply wells were identified. The Development Charges Background Study (2021) identifies two planning projects in 2022 for the replacement and expansion of existing wells (Wells F2 and F5). With the planned well expansion and the addition of the new wells, the total increased capacity could accommodate the entire Study Area.

The Development Charges Background Study (2021) identifies eight planned watermain extension projects near the Study Area, including:

- Guelph Street from Elora Street to Union Street (2024)
- Guelph Street from McQueen Boulevard to Elora Street (2024)
- Guelph Street from Elora Street to Second Line (2024)
- McQueen Boulevard from Scotland Street to Guelph Street (2025)
- Scotland Street from existing dead end to Scotland Street (2025)
- Second Line from Highway 6 to Jones Baseline (2027)
- Highway 6 from existing dead end to Second Line (2027)
- Second Line from Highway 6 to Guelph Street (2029)

4.1.2 Transportation Network

The existing road network considered as part of this Study included:

- Tower Street South (Highway 6);

- McQueen Boulevard;
- Guelph Street;
- Scotland Street;
- Second Line;
- All respective intersections of the above listed roads.

The designation of roads within the Study Area is illustrated on **Figure 13**. The key characteristics of the streets within the Study Area are detailed in the Transportation Plan prepared in support of the MESP and summarized below.

Tower Street South (Highway 6) is an arterial road. The segment of Tower Street through the Study Area, to about 200 metres north of McQueen Boulevard, is under the jurisdiction of the MTO. North of McQueen Boulevard, jurisdiction of Tower Street reverts to the Township. The portion of Tower Street between Second Line and the commercial development south of McQueen Boulevard is a two lane rural cross section. From the commercial development to McQueen Boulevard Tower Street widens to two northbound lanes, being one south bound lane and select turn lanes. There is a sidewalk east side of this segment of Tower Street. There is an urban cross section along the east side and a rural cross section along the west side. The planned capacity is 1000 vehicles per hour.

McQueen Boulevard is a collector road under the jurisdiction of the Township of Centre Wellington. It is oriented east-west and is located at the northern boundary of the Study Area but has not been fully completed and exists in two segments. To the east and west of Tower Street to its easterly and westerly termini, McQueen Boulevard has a 14 metre wide road allowance. It provides sidewalks on both sides and one lane of travel in each direction, but is designed to accommodate two lanes of travel in both directions. From McTavish Street to Scotland Street it has a 10.5m width which accommodates one lane of travel in both directions. It has an urban cross section with sidewalks on both sides. Extensions to McQueen Boulevard from its westerly terminus to Guelph Street and between Millburn Boulevard and McTavish Street are planned in conjunction with development of the Study Area. The planned capacity is 700 vehicles per hour.

Guelph Street serves as the western boundary of the Study Area. It is a local road with a rural cross section. It has a 6.0 to 7.0 metre paved surface with gravel shoulders providing one lane of travel in each direction. The planned capacity is 500 vehicles per hour.

Scotland Street serves as the east boundary of the Study Area. It is a local road which has an urban cross section from the Centre Wellington District High School to the north with a 10.25 metre paved surface with one lane of travel and a sidewalk on the west side. From the high school to the south, it has a rural cross section with an 8.5m to 9.0m paved surface and one lane of travel in each direction. The planned capacity is 500 vehicles per hour.

Second Line serves as the south boundary of the Study Area. It is a local road with a rural cross section. It has a 7.0 to 8.0 metre paved surface with gravel shoulders. The planned capacity is 500 vehicles per hour.

With the Study Area there are two signalized intersections, both of which are along Tower Street. The signalized intersections are at Tower Street South and McQueen Boulevard and Tower Street South at the existing commercial development. All other intersections are stop controlled.

4.13 Active Transportation

The following sidewalks are currently provided within the Study Area:

- East side of Tower Street, from the limits of the commercial development to McQueen Boulevard and further north beyond the Study Area
- Both sides of all existing sections of McQueen Boulevard
- West side of Scotland Street across the frontage of the Centre Wellington District High School, and extending further north beyond McQueen Boulevard.

There are a number of existing trails within Fergus, including several trails which end at the northerly limits of the Study Area. Existing trails to the north of the Study Area are shown on **Figure 14**. There are no existing trails within the Study Area.

4.14 Traffic Operations Existing Conditions

Traffic counts were undertaken in order to establish existing conditions on the road network. The traffic analysis confirmed that:

- All Study Area intersections are currently providing good operations with average delays, with the exception of Tower Street South and Second Line which experiences poor conditions during the afternoon peak hour. The poor operating conditions are a result of the significant volumes on Tower Street South. Despite this, present conditions do not warrant signalization as volumes on Second Line are relatively low.
- All existing dedicated turn lanes within the Study Area are of a sufficient length.
- The Study Area road network is operation at 88% capacity or less. The greatest capacity is experienced on Tower Street, south of the commercial access where the road reduces to a two-lane cross section. The remaining roads operate at 62% capacity or less.

The traffic analysis confirms that the current road network readily accommodates the current traffic volumes and no improvements are required. There are no constraints related to the current road network.

Further, the Township's Transportation Master Plan lists several planned upgrades which will affect the Study Area road network. All noted road/intersection works are planned for completion between 2024 and 2031. Unless noted, all upgrades are assumed to be in place by 2031. These include:

- The easterly extension of McQueen Boulevard is planned by 2025 to serve the Study Area. McQueen Boulevard is planned to be extended both eastward and westward to provide a continuous collector road between Guelph Street and Scotland Street, by 2031. It is planned

to be extended 200 metres further west to the planned southerly extension of Beatty Line North.

- Signalization of the Second Line and Tower Street intersection is planned by 2025 to address existing conditions.
- Beatty Line north is planned to be extended southward to connect with McQueen Boulevard. This will include a new bridge over the Grand River to create a new north-south connection in western Fergus.
- An extension of Guelph Street between Union Street West and Elora Street is planned, including grade to a collector road between Union Street West and Second Line.
- Tower Street (Highway 6), between the existing southerly limits of Fergus and Second Line, is to be adopted as a connecting link, with the MTO transferring responsibility to the Township.
- Scotland Street is planned to be upgraded to a collector road through the Study Area.
- Second Line is planned to be upgraded to an arterial road between Guelph Street and Scotland Street.

In addition to the planned roadway improvements, a number of intersection improvements are planned including:

- Reconstruction of the Tower Street and Second Line Intersection is planned. This is being considered through a Preliminary Design and Class Environmental Assessment by MTO. Timing has yet to be confirmed. This study assumes a signalized intersection with consideration for a roundabout under future total traffic conditions.
- A new intersection is to be constructed at Guelph Street with the planned extension of McQueen Boulevard. It is assumed that this will be a two-way stop-controlled intersection for the purpose of this report.

4.15 Land Use Compatibility

There are no major land use compatibility issues related to adjacent land uses. The land use designations and policies proposed through the Secondary Plan process will have regard to existing land uses surrounding the Study Area, including, but not limited to:

- Residential uses to the north;
- Highway commercial uses along Tower Street (Highway 6);
- Centre Wellington District High School located at 905 Scotland Street; and,
- The existing landscape operation on the southwest corner of Second Line and Tower Street (Grand River Natural Stone)

With regard to with Minimum Distance Separation (“MDS”) setbacks, MDS setbacks are not required for proposed land use changes within approved settlement areas, as it is generally understood that the long-term use of the land is intended to be for non-agricultural purposes. As such, there are no

constraints associated with MDS setbacks within the Study Area as all of the lands are within the Urban Boundary.


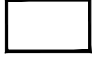






4.16 School Planning and Requirements

The Upper Grand District School Board (“UGDSB”) has confirmed that a new elementary school is required within the Secondary Plan Area. The UGDSB school site is to be eight acres in area and located within the central east portion of the Study Area. The future school site addresses the UDGSB locational requirements. The UGDSB has entered into an Agreement with one of the area landowners related to provision of land for a future school.

The UDGSB and the Wellington Catholic District School Board have indicated that additional schools may be required, depending on the ultimate population and the phasing associated with population growth within the Study Area. As noted in the Section 7.0 of this report, the *Low Density Residential* and *Medium Density Residential* designations permit a school, therefore any additional school board land need requirements can be determined and addressed through future plan of subdivision applications.

Figure # 7
Structure Plan

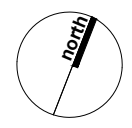
South Fergus MESP and Secondary Plan
Town of Fergus
Township of Centre Wellington
County of Wellington

- Legend**
-  Study Area (±153 ha)
 -  Parcel Fabric*
 -  Properties of Cultural Heritage Value or Interest 7856 Second Line
 -  Existing Stormwater Management Facilities
 -  Natural Heritage Features
 -  30 m Natural Heritage Feature Buffer
 -  Natural Hazard Limit (Includes flood and erosion hazard limits)
 -  Centreline of Creek

Sources:

- Imagery and Topo: Northway/Photomap/Remote Sensing Ltd, 2020
- Floodplain/Hazard mapping: Final Existing Condition Hydrogeological Report, Tatham Engineering, 2021
- Natural Heritage Features and Buffer: FRICORP Ecological Services, 2021
- Preferred SWM Locations: Tatham Engineering, 2021
- *Parcel fabric exported from Wellington County Online mapping and is approximate only

DATE: January 2023
SCALE: NTS
FILE: 19144A
DRAWN: JB



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**PLANNING
URBAN DESIGN
& LANDSCAPE
ARCHITECTURE**



FRICORP
ECOLOGICAL SERVICES



TATHAM
ENGINEERING

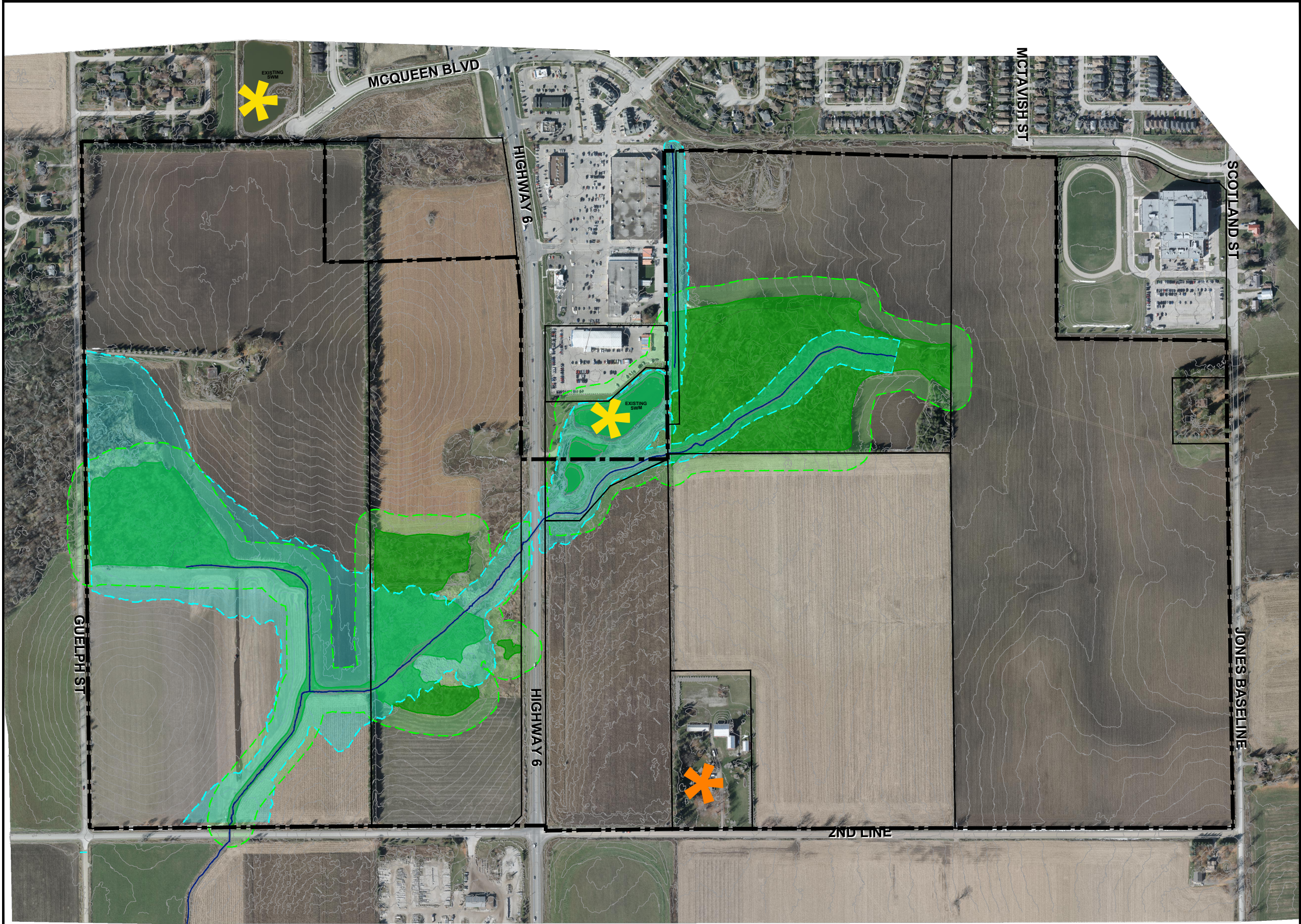






Figure # 8
Cultural Heritage Resources

South Fergus MESP and Secondary Plan

Town of Fergus
 Township of Centre Wellington
 County of Wellington

Legend

-  Study Area (±151 ha)
-  Properties of Cultural Heritage Value or Interest
7856 Second Line
-  Stage 1 and 2 Archaeological Assessment Completed
-  Parcel Fabric*



Base Map Source:

Imagery: Northway\Photomap\Remote Sensing Ltd, 2020 and GRCA 2015
 Archaeology: Stage 1-2 Archaeological Assessment, AMICK Consultants Limited, April 2021
 Heritage: Township of Centre Wellington Heritage Property Mapping

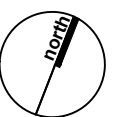
*Parcel fabric digitized from GRCA web mapping and is approximate in size and location

DATE: May 2021

SCALE: NTS

FILE: 19144A

DRAWN: DGS



















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**Figure # 9
Ecosites**

South Fergus MESP and Secondary Plan
Town of Fergus
Township of Centre Wellington
County of Wellington



 Amended Wetland Boundary
Ecosites
 Agricultural
 Anthropogenic
 CUM1-1
 CUT1
 FOC4-1
 FOCM6
 FOD8-1
 FODM11
 FODM12
 MAM2-2
 MAS2-1
 OAO
 SWD2-1
 SWT2-2
 THDM3

DATE: February, 2023
SCALE: NTS
FILE: 19144A
DRAWN: GC



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Figure # 10
Natural Heritage Features & Buffer

South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington



Ecosites

- Agricultural
- Anthropogenic
- CUM1-1
- CUT1
- FOC4-1
- FOCM6
- FOD8-1
- FODM11
- FODM12
- MAM2-2
- MAS2-1
- OAO
- SWD2-1
- SWT2-2
- THDM3
- Natural Heritage Systems with 30m Buffer

DATE: February, 2023

SCALE: NTS

FILE: 19144A

DRAWN: GC



K:\19144A - South Fergus MESP and Secondary Plan\RPT\Natural_Heritage.dwg



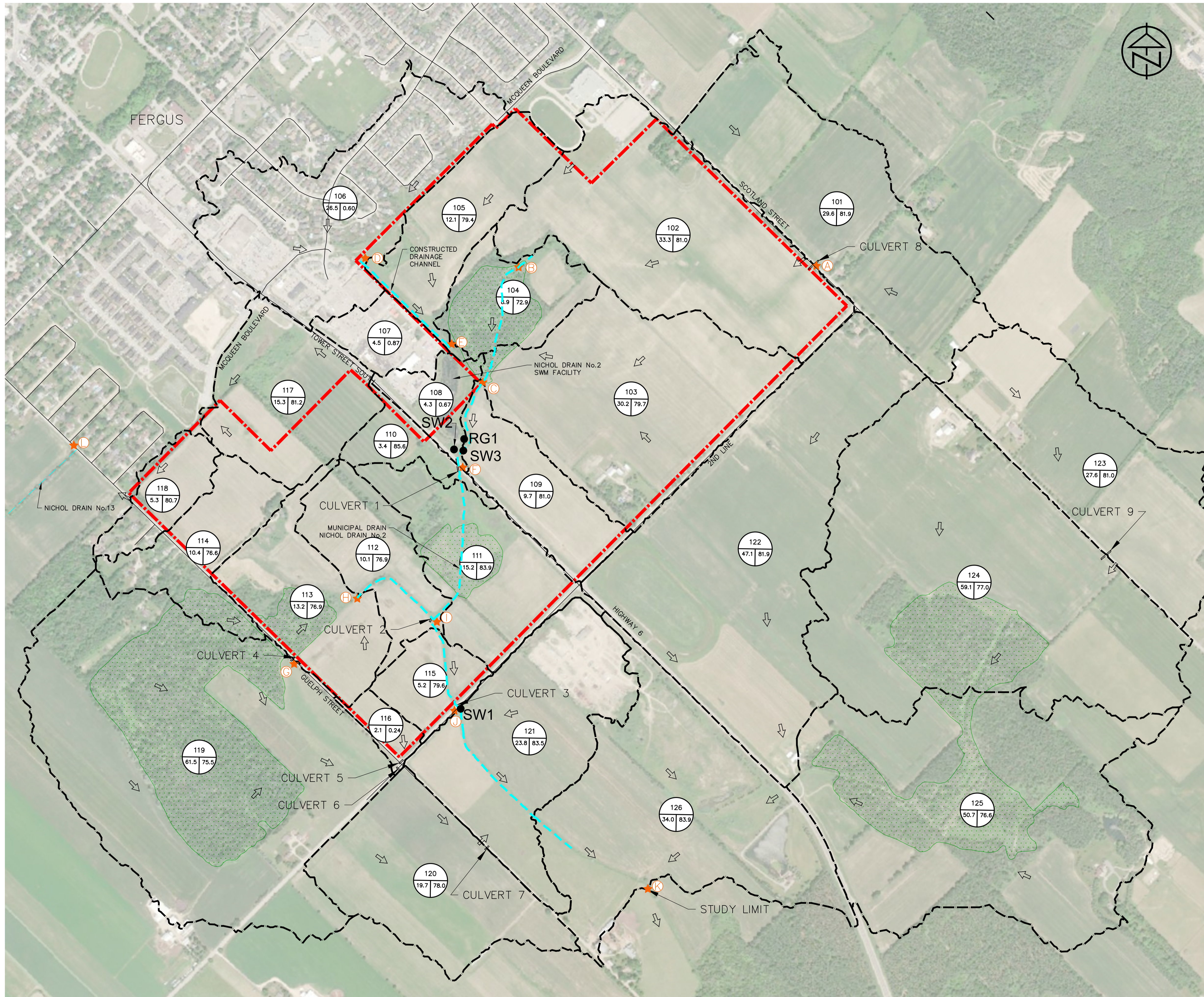
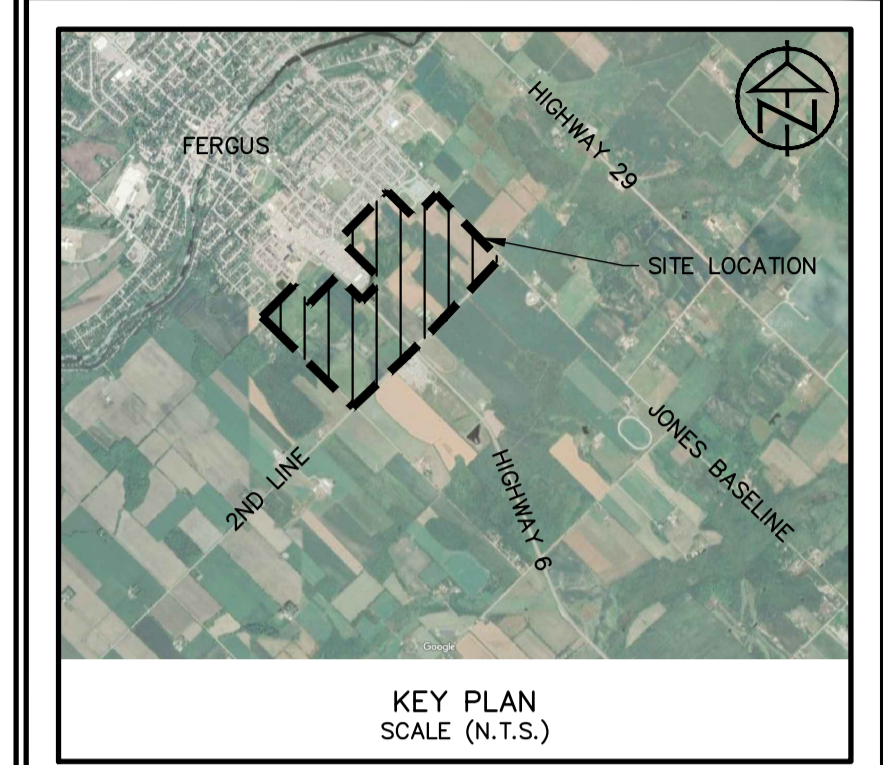


Figure 11
EXISTING DRAINAGE PLAN
 South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington



CULVERTS

CULVERT 1:	3.02m X 1.82m BOX CULVERT
CULVERT 2:	1.2m ϕ CSP
CULVERT 3:	3.0m X 2.0m BOX CULVERT
CULVERT 4:	0.55m ϕ & 0.6m ϕ HDPE
CULVERT 5:	TO BE DETERMINED
CULVERT 6:	TO BE DETERMINED
CULVERT 7:	TO BE DETERMINED
CULVERT 8:	0.45m ϕ CSP
CULVERT 9:	0.45m ϕ CSP

LEGEND

- SOUTH FERGUS SECONDARY PLAN AREA
- OVERLAND FLOW DIRECTION
- CATCHMENT BOUNDARY
- WETLANDS
- CATCHMENT ID
- CURVE NUMBER / IMPERVIOUS FRACTION
- CATCHMENT AREA
- SW STREAMFLOW MONITORING LOCATION
- RG RAIN GAUGE LOCATION
- POINT OF INTEREST

Base Map Source: TOPOGRAPHIC SURVEY (TATHAM) COMBINED WITH TOPOGRAPHIC MAPPING (NORTHWAY/PHOTOMAP REMOTE SENSING LTD.)

DATE:	JUNE 14, 2021
SCALE:	1:2500
FILE:	120157
DRAWN:	KF

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MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE

FRICORP ECOLOGICAL SERVICES

TATHAM ENGINEERING

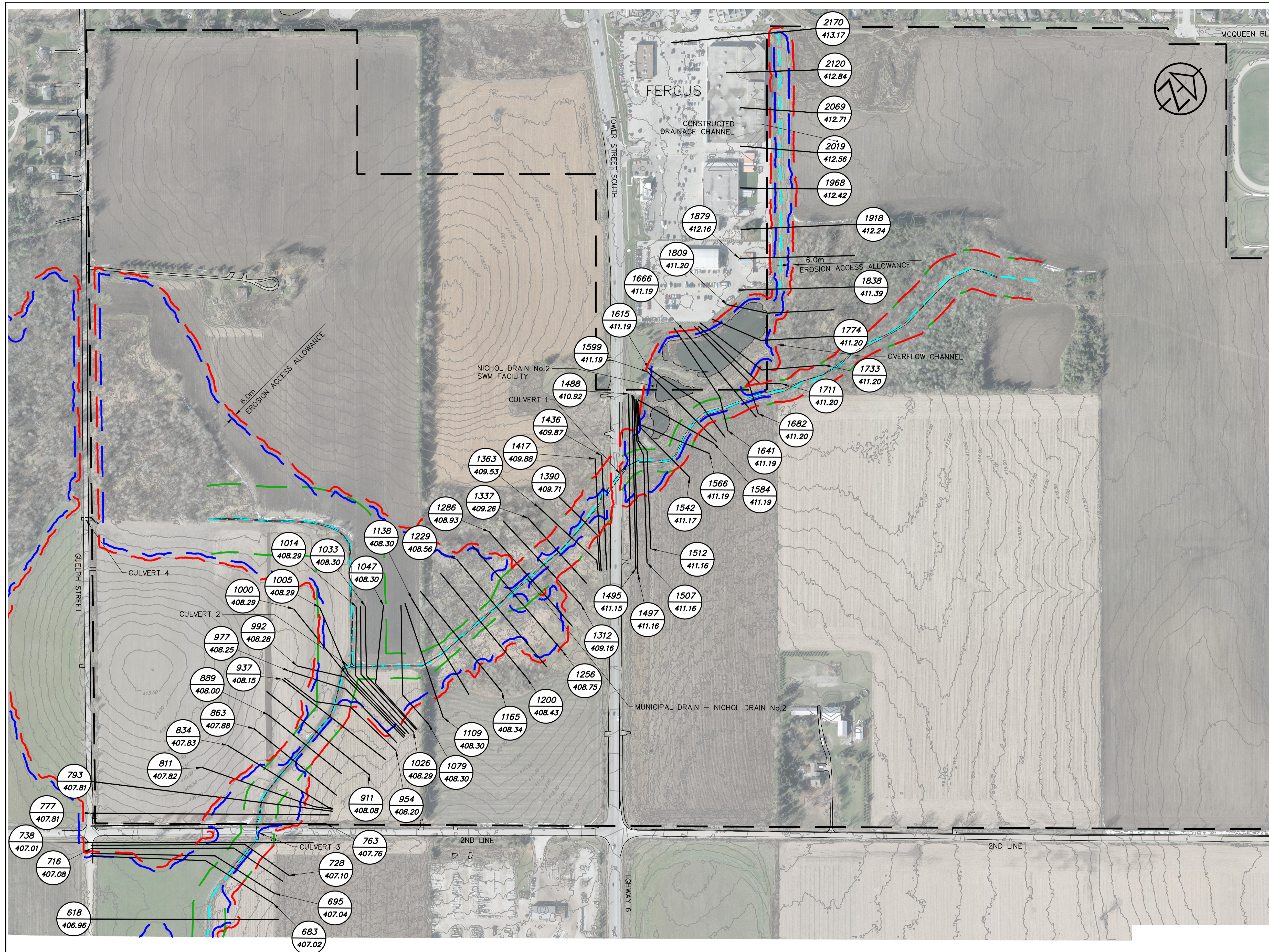
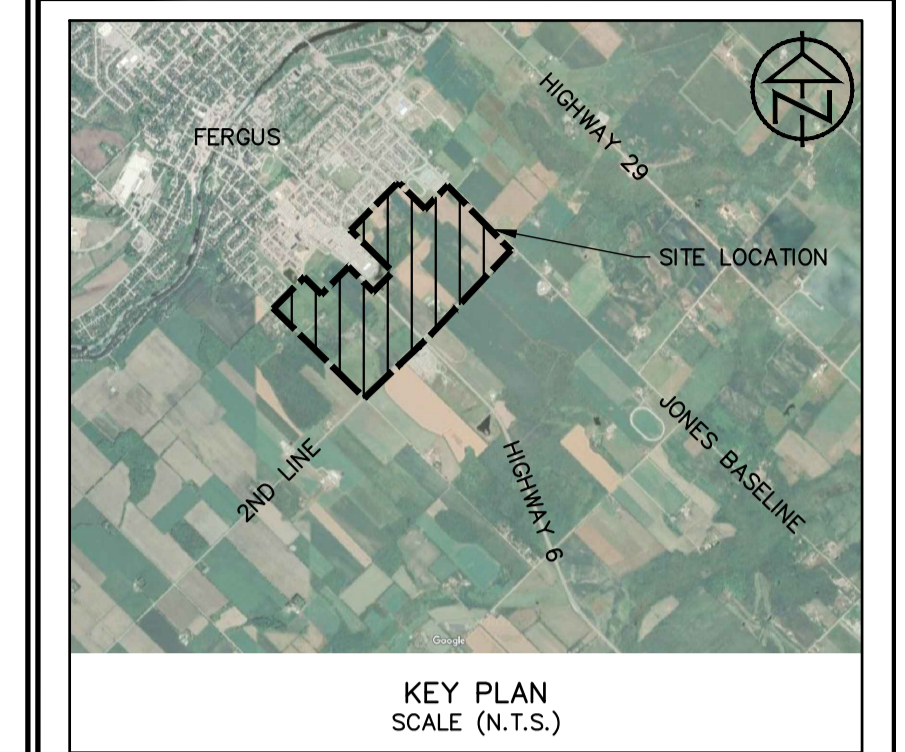


Figure 12
NATURAL HAZARDS PLAN

South Fergus MESP and Secondary Plan
Town of Fergus
Township of Centre Wellington
County of Wellington



- CULVERTS**
- CULVERT 1: 3.05m x 1.82m CONCRETE BOX CULVERT
 - CULVERT 2: 1.20m \varnothing CSP
 - CULVERT 3: 3.0m x 2.0m CONCRETE BOX CULVERT
 - CULVERT 4: 0.6m \varnothing HDPE CULVERT AND 0.55m \varnothing HDPE CULVERT

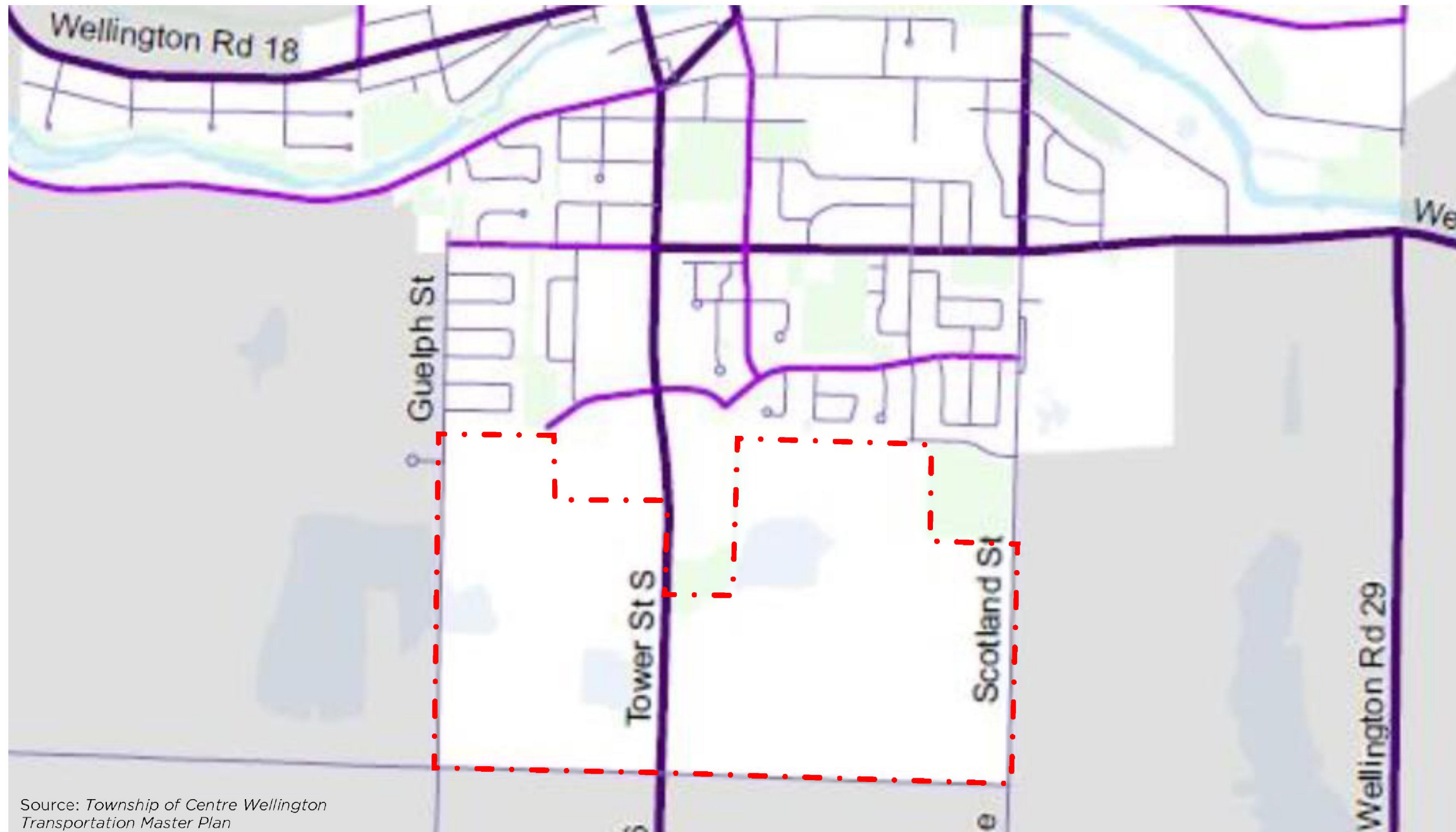
- LEGEND**
- FLOOD HAZARD LIMIT —
 - NATURAL HAZARD LIMIT —
 - CENTERLINE OF DRAIN —
 - EROSION HAZARD LIMIT —
 - SOUTH FERGUS SECONDARY PLAN AREA
 - HEC-RAS RIVER STATION 90
 - REGIONAL WATER SURFACE ELEVATION 411.24
 - EXISTING CONTOUR — 419.50

Base Map Source: TOPOGRAPHIC SURVEY (TATHAM) COMBINED WITH TOPOGRAPHIC MAPPING (NORTHWAY/PHOTOMAP REMOTE SENSING LTD.)






DATE: JUNE 14, 2021
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Figure # 13
Existing Road Classifications

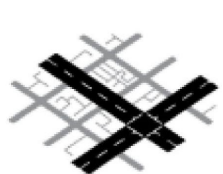
South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington



Legend

-  Study Area
-  Arterial
-  Collector
-  Local
-  Urban Area

Source: Township of Centre Wellington
 Transportation Master Plan



► **Arterial Roadways:** Serve as the major connecting links for inter-urban traffic and generally consist of Provincial highways and County roads.



► **Collector Roadways:** Provide access between local and arterial roads and generally helps to circulate traffic within an individual neighbourhood.



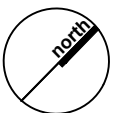
► **Local Roadways:** Connect adjacent properties to collector roads. They are not intended to act as through routes or play a main connecting role in the traffic network.

DATE: February, 2023

SCALE: NTS

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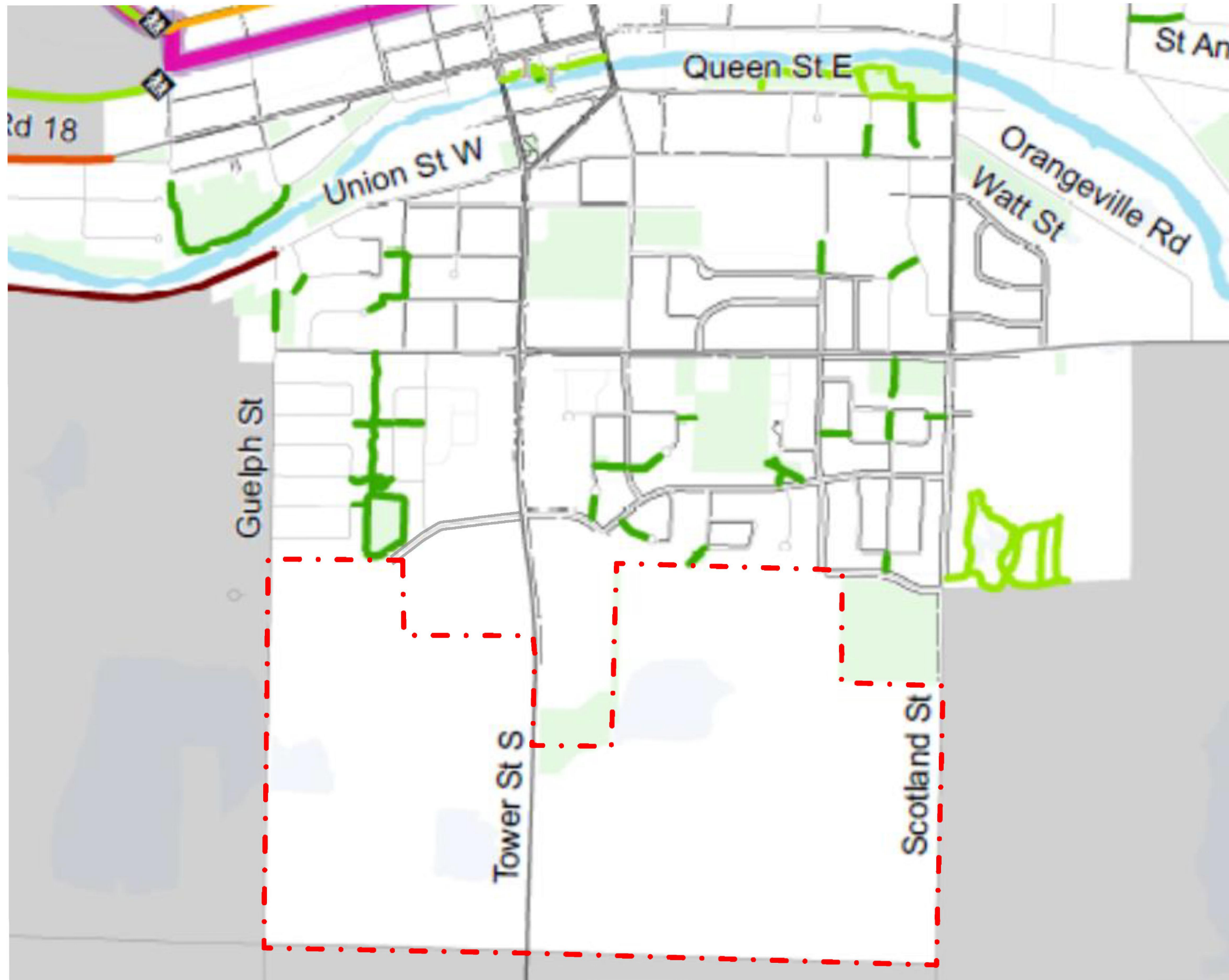


Figure # 14
Existing Trail Network

South Fergus MESP and Secondary Plan
Town of Fergus
Township of Centre Wellington
County of Wellington

Legend

-  Study Area
-  Existing Off-Road Trail
-  Existing Off-Road Trail (Township)
-  Existing Paved Shoulder (County)
-  Existing Paved Shoulder (Township)
-  Existing Signed Route (Township)
-  Sidewalks
-  Elora Cataract Trail
-  Trans Canada Trail
-  Trailhead

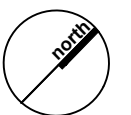
Source:
Centre Wellington Transportation Master Plan

DATE: February, 2023

SCALE: NTS

FILE: 19144A

DRAWN: GC



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5.0 RECOMMENDED MASTER ENVIRONMENTAL SERVICING PLAN & LAND USE

5.1 Recommended Master Environmental Servicing Plan

The purpose of the South Fergus MESP is to develop a natural heritage system, transportation network, stormwater management strategy and a sanitary and water servicing strategy that collectively provide the best framework to guide the development of the South Fergus Lands. The recommended Master Environmental Servicing Plan is shown conceptually at **Figure 15**. The environmental features, the proposed collector road network and stormwater management facilities are all shown conceptually. In addition the MESP shows the preferred location of parks, trails and the future elementary school site. The MESP is a comprehensive plan that integrates environmental, servicing, transportation and community planning analysis that is required to take place.

Section 6.0 of this report summarizes the results of the technical studies, describes the evaluation of the various alternatives, and provides recommendations to the Secondary Plan and future applications for plans of subdivisions and other measures that would implement this MESP.

The Open Space network, shown on **Figure 15**, incorporates the natural heritage strategy recommended in the Environmental Impact Assessment. The Open Space Network includes the natural heritage features as well as the recommended setbacks and buffers.

The recommended collector road network is shown conceptually on **Figure 15** to this report. The ultimate alignment of the roads will be determined through detailed design and the plan of subdivision approval process. The collector road network is based on the findings of the Transportation Study, prepared by Tatham Engineering. The collector road network was developed with input from the project team including consideration of the natural heritage strategy and other MESP components. The Transportation Study recommended two new collector roads within the eastern portion of the Study Area as well as a number of intersection and road improvements on existing streets within and surrounding the Study Area. All other roads within the Study Area are anticipated to be local roads with accesses built off of the collector road network. The local road network will be determined through individual plan of subdivision applications.

The proposed stormwater management facilities are shown on **Figure 15** and described in the Stormwater Management Report, prepared by Tatham Engineering. The stormwater management strategy is a comprehensive approach for the Study Area. The preliminary stormwater management plan maintains existing drainage conditions at the limits of the Study Area. The proposed six

stormwater management facilities provide the necessary preliminary stormwater quantity control. The stormwater management strategy provides the required Level 1 “Enhanced” water quality control for the Study Area. Detailed stormwater management strategies will be determined through the plan of subdivision stage.

The recommended sanitary sewer and watermain connections and alignment are reviewed in detail in the Functional Servicing Report, prepared by Tatham Engineering. The alignment of servicing within the Study Area is primarily a function of the available connection points, coordination with the recommended road network and avoidance of natural heritage features. Connections to the watermain network are all located on lands to the north of the Study Area. The four connection points are recommended to provide sufficient water capacity and pressure to service the development of the lands. The proposed water distribution network is based on planned upgrades including the replacement and expansion of existing wells and the addition of two new wells within the municipality. The proposed sanitary servicing strategy also relies on the completion of planned infrastructure upgrades. The preferred sanitary servicing strategy relies on new trunk sewers aligned with the proposed collector road network as well as a new sanitary pumping station within the Study Area. The completion of the planned Union Street sanitary pumping station has been considered in determining a recommended phasing plan as part of the MESP.

The FSR Report provided as part of this MESP includes preliminary population figures to for the Study Area. The total population for lands within the Study Area will be confirmed through individual Plan of Subdivision applications, in accordance with the policies of the Secondary Plan. Further study, including detailed engineering reports, will be undertaken as part of future development applications within the Study Area.

The MESP recognizes the listing of the property within the Study Area of cultural heritage value or interest at 7856 Second Line. This property is listed on the Township of Centre Wellington’s Heritage Register and was identified in the Existing Conditions Report. The location of this property is shown on **Figure 15**. The MESP and Secondary Plan considers appropriate land uses on and adjacent to this property. Further analysis will be required at the time of development of the lands.

Figure 15 also includes trails and parkland locations. Park locations are distributed throughout the Study Area in order to ensure equitable access for all future residents. In general, parks are shown adjacent to natural heritage features or trails. The precise size and location of the parks will be determined through the Plan of Subdivision process. Conceptual trail locations have been shown to provide connectivity throughout the Study Area.

Finally, there is an existing agreement with the Upper Grand District School Board that an eight (8) acre site for an elementary school be provided on the eastern portion of the Secondary Plan Area. The preliminary identified elementary school location is identified on **Figure 15** and was reviewed and accepted by the UGDSB. The precise location for the future elementary school will be determined through future plan of subdivision applications.

5.2 EVALUATION OF ALTERNATIVES

A range of alternatives for the maintenance of the natural heritage features (including groundwater) and the provision of roads, sanitary and water services and stormwater management were

considered and evaluated. The various options were evaluated within their own context but also in consideration of the other MESP components. For example, a number of collector road alignments were considered and evaluated related to road safety and traffic distribution as well as in relation to the impact on natural heritage features and the overall servicing strategy.

The recommended MESP represents the preferred combination of all potential alternatives for the maintenance of the natural heritage features, and the provision of roads, services and stormwater management facilities for the South Fergus Lands.

5.2.1 ***The ‘Do Nothing’ Alternative***

As part of the study process, the ‘do nothing’ alternative was considered. The Study Area is already used for agricultural and rural residential uses; however they are also designated for urban residential development. The subject lands are located within the Urban Boundary of the Fergus Urban Centre and identified as a Secondary Planning Area by the Township of Centre Wellington Official Plan. The ‘do nothing’ alternative would result in the continued use of the lands for agricultural uses.

Given that the Study Area has been identified as a Secondary Planning Area and is considered in the County’s current Land Needs Assessment for urban development, the ‘do nothing’ alternative has already been rejected from a planning policy perspective. Rather, the MESP sets out the best way for development to occur within South Fergus. The technical work undertaken demonstrates that the necessary infrastructure to service development can be implemented successfully, while protecting the identified natural heritage system. For these reasons, the ‘do nothing’ alternative is not recommended.

**Figure #15
Preferred Land Use Plan**

South Fergus MESP and Secondary Plan
Town of Fergus
Township of Centre Wellington
County of Wellington

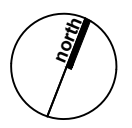
- Legend**
- South Fergus Planning Area
 - Property Lines (Approximate)
 - Natural Heritage Features
 - 30 m Natural Heritage Feature Buffer
 - Creek
 - Natural Hazard Limit
- Proposed Land Use**
- Low Density Residential
 - Medium Density Residential
 - Mixed Use Corridor
 - Gateway Commercial
 - Natural Heritage
 - Highway Commercial
- Future School Location
 - Community Park Location
 - Neighbourhood Park Locations
 - Preliminary SWM Locations
 - Trail Corridor
 - Proposed Collector Roads
 - Potential Roundabout
 - Future Intersection Improvements
 - Property of Cultural Heritage Value or Interest

DATE: February 13, 2023

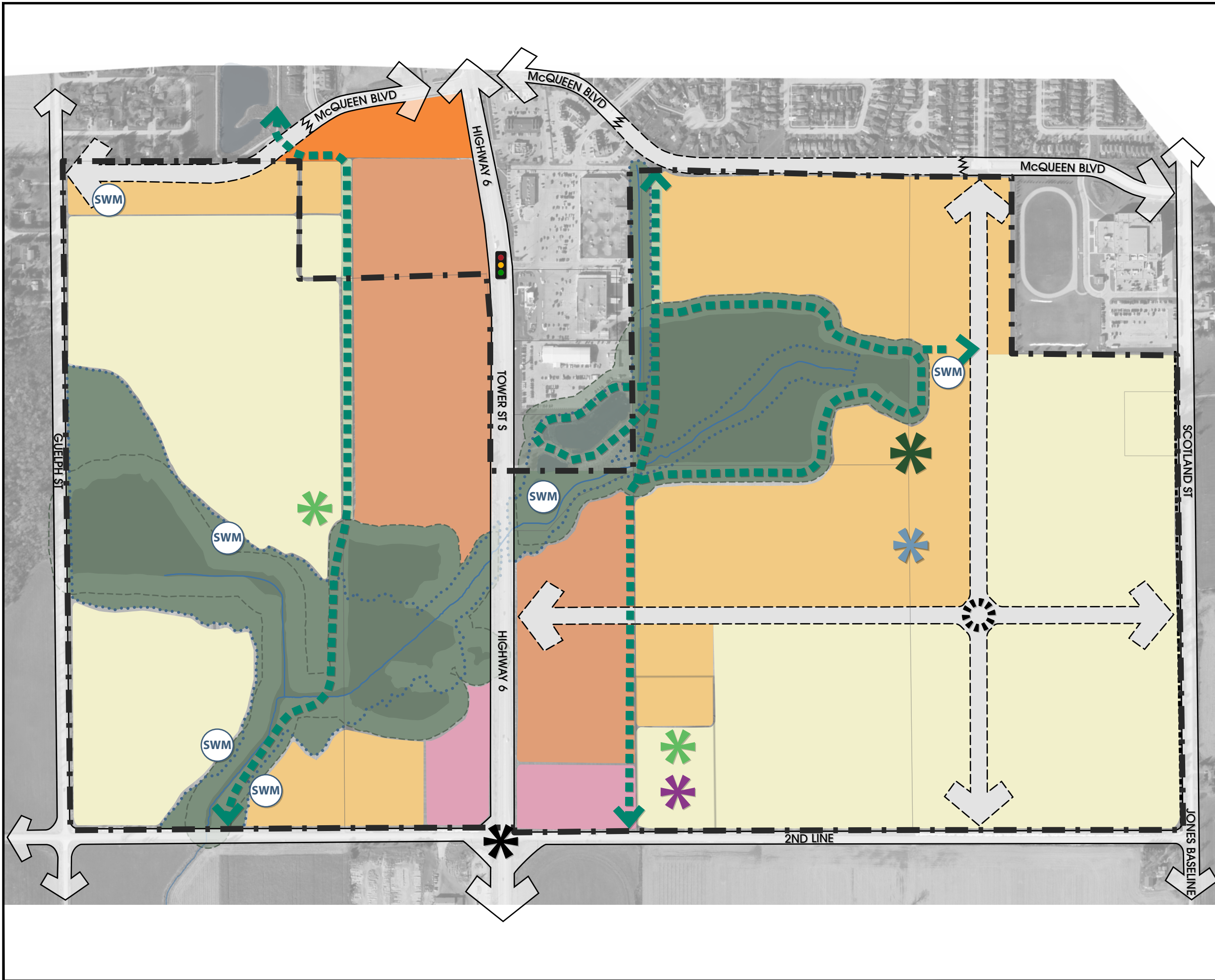
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6.0 ANALYSIS AND RECOMMENDATIONS

6.1 Natural Heritage System

The purpose of this section is to provide an assessment of potential impacts to the Study Area and surrounding areas based on the findings of the technical reports prepared as part of the Secondary Plan and MESP process. Impacts of the proposed land use, infrastructure and trails will be discussed in terms of groundwater recharge and quality, surface water quality and quantity and the integrity of the surrounding environmental features, including ecological connectivity and recommendations for restoration.

An Environmental Impact Assessment (“EIS”) Report was prepared by FRi Ecological Services for the subject lands (**Appendix F**). This report includes a characterization of the natural heritage features within the subject lands.

6.1.1 *Natural Features*

The Preferred Land Use Plan and the draft Secondary Plan propose to designate the identified natural heritage features Core Greenlands, with the exception of the Barn Swallow Habitat. The EIS confirms that the natural heritage features within the Core Greenlands designation will be retained, buffered and enhanced.

Potential impacts arising from the proposed development were evaluated in the EIS including direct impacts, indirect impacts, induced impacts and cumulative impacts.

6.1.2 *Direct Impacts*

A 30 metre contiguous buffer is recommended to the lands designated Core Greenlands. This is proposed to be implemented through the Core Greenlands land use designation in the Secondary Plan as well as implementing Secondary Plan policies. Currently, there is no buffer between the limit of the identified natural heritage features and the adjacent agricultural land uses.

The 30 metre buffer is considered to be generally accepted as a functional buffer. A revegetation plan for the buffer is recommended. In some cases, stormwater management facilities, recreational trail and associated grading, site alteration with grading incursions for transitions to adjacent lands may be permitted within the 30 metre buffer, subject to the findings of an future site-specific Environmental Impact Study. The draft Secondary Plan contains policy direction regarding stormwater management facilities within the buffer area.

The Migratory Birds Convention Act protects migratory birds, their eggs and nests from being harmed or destroyed. Environment Canada identifies the Study Area as Nesting Zone C2 with a corresponding nesting period of April 1 to August 31. During this period it is recommended that there is to be no clearing of vegetation occur within these habitats. Nest searches, as a measure to mitigate impact to nesting birds during the core breeding period should not occur within “complex” habitats such as woodlands where the likelihood of observing all nests and eggs is low while the potential to disturb nesting birds is high. However, nest searches, as a means of mitigation during the core breeding period, may be undertaken in “simple” habitats such as hedgerows, bridges and other constructed features where the potential to observe all active nests is relatively high. The timing restrictions also apply to the removal of the barn that functions for nesting Barn Swallows.

6.1.3 *Indirect Impacts*

Potential sources of indirect impacts associated with the proposed development include potential changes to groundwater and surface water flow patterns, changes to water quality, sedimentation and erosion, and impacts to wildlife. The EIS report contains a fulsome summary of potential indirect impacts to wildlife.

6.1.3.1 **Stormwater Management**

A Stormwater Management Strategy was prepared by Tatham Engineering in support of the MESP and Secondary Plan process. The stormwater management approached is explained in detail at Section 6.4 of this report and a copy of the Stormwater Management Report is appended (**Appendix I**). Based on the Preferred Land Use Plan and utilization of the recommended stormwater management plan, significant impacts to the natural features on the Study Area are not anticipated.

6.1.3.2 **Erosion and Sediment Control**

With regards to sediment and erosion, the MNRF Technical Guide – River and Stream Systems: Erosion Hazard Limit, defines the erosion hazard limit for an unconfined system as 20 times the bankfull channel width centered on the meander belt axis. The Fluvial Geomorphological Characterization and Erosion Threshold Assessment (Appendix B of the Stormwater Management Report) provides a preliminary assessment of potential geomorphic change and erosion potential of Nichol Drain No. 2. The geomorphological characterization indicates the channel reaches through the Study Area are susceptible to erosion and channel instability. The erosion hazard limits have therefore been established as 20 times the assessed bankfull width of each respective channel reach in accordance with the MNRF guidelines.

The proposed vegetated 30-metre buffer will provide enhanced mitigation that does not currently exist. A sediment and erosion control plan will be developed in accordance with appropriate guidelines and the criteria set out in the EIA and the Stormwater Management Plan. Further, environmental monitoring is also recommended.

6.1.3.3 Wildlife Impacts

Indirect impacts to wildlife may arise from noise and dust associated with construction activities and unnatural lighting resulting from the development. Noise associated with construction is anticipated to be temporary; therefore significant effects on wildlife from noise are not expected.

During construction activities such as tree clearing, grubbing, excavation and grading, dust can lead to the following:

- Large amounts of dust may induce changes in vegetation due to increased heat absorption and decreased transpiration;
- High levels of dust can fall into aquatic or wetland systems, causing adverse effects to plants and/or wildlife that are not adapted to high levels of sedimentation, and
- Dust produces an immediate visual impact.

Impacts of dust will be mitigated through the strategic placement of topsoil stock piles and immediate re-vegetation of completed areas following construction.

During site preparation and construction activities involving significant noise, wildlife may temporarily avoid the area. Timing of construction activities will be appropriate as to not interfere with peak mammal and bird breeding seasons. Details will be addressed thorough future approvals.

Detailed lighting designs should be provided at the detailed design stage. Lighting designs should include directional lighting for all areas of road and developments that are within 30 metres of the Core Greenlands and natural heritage features to eliminate light wash. Building design practices should also be considered that reduce window strikes for bird species.

The watermain system will include locations where it will be necessary to cross the Nichol Drain No. 2 (Figure 4). A Request for Review will be submitted to Fisheries and Oceans Canada that will include timing restrictions, reduced disturbance zones and revegetation and regrading of banks to restore the drain system and protect fish habitat.

6.1.3.4 Induced Impacts

There may be an increase in the potential for interaction between humans and domestic pets and wildlife, as well as an increase in human access into the retained and restored naturalized areas. These can result in vegetation trampling, plant removal, dumping of refuse, creation of unauthorized trails, tree damage, introduction of non-native plant species and wildlife predation and harassment by domestic pets. However, since there are existing homes in the area these impacts are not expected to be significant. The provision of a designated trail corridor as part of the plan will assist in minimizing any potential impacts.

In addition, natural areas will be protected by restricting access and human activities. Signage will direct residents to respect the naturalized areas. Further measures such as rear lot fencing and environmental brochures for homeowners will assist in preventing human induced impacts to the naturalized areas.

The existing agricultural areas currently provide an anthropogenic food source for a variety of wildlife including white-tailed deer, raccoons and rodents. There may be short-term adjustments in the wildlife population induced by the removal of this artificial food source.

6.1.3.5 Cumulative Impacts

Construction practices are not expected to directly disturb the Core Greenlands within the Study Area or the contiguous components west and south of the Study Area. Recommendations for the establishment of enhanced buffers will mitigate any potential loss of function or connectivity to adjacent Core Greenlands and natural heritage systems.

6.2 Transportation Network

A Transportation Plan was prepared by Tatham Engineering in support of the MESP and Secondary Plan (**Appendix G**). The purpose of this study was to assess the existing road network traffic operations and establish any system needs based on existing conditions; establish traffic projections to the full build out of the Study Area and 10 years beyond; identify the future road system and assess the traffic operations and establish and review potential road system connection points to the existing system; determine the location and suitability of new roads; and assess the overall impact of the Secondary Plan and proposed road network.

The findings of the Transportation Study were considered in determining the Preferred Land Use Plan and collector road network. Further, the Transportation Study included a number of upgrades that are recommended along the Tower Street Corridor to accommodate the future total traffic conditions. The recommended road improvements are intended to be implemented through Plan of Subdivision applications for lands within the Secondary Plan Area.

6.2.1 Collector Road Network

Based on the findings of the Transportation Study and the Preferred Land Use Plan, two collector roads are proposed within the Study Area, being:

- An east-west collector road between Tower Street and Scotland Street, approximately 350 metres north of Second Line
- A north-south collector road between McQueen Boulevard and Second Line, aligning with McTavish Street in the north.

Both roads are to have a two-lane cross section. Construction will coincide with the development of the lands to the east of Second Line.

The Transportation Study confirms that the access spacing is acceptable. The east-west collector access location is slightly less than the recommended 400 meter spacing to Second Line, however this is not considered to be problematic given that the new intersection is proposed as a T-intersection with no west leg or northbound left turn lane. The 400 metre spacing recommendation is typically to ensure there is no overlap between back-to-back left turn lanes. The north-south collector terminus on Second Line will be more than 200 metres from the intersections of Scotland Street and Highway 6 and is therefore considered to be appropriate. Local roads and private

accesses connecting to the existing and planned arterial/collector road network will adhere to the minimum spacing requirements set out in the TAC guidelines.

Direct access to Tower Street for the Mixed Use Commercial and Gateway Commercial development will be considered through individual development applications. It has been assumed that access will be located opposite the signalized intersection at the current commercial access, thereby adding a fourth leg to the existing intersection.

Local road access throughout the Study Area will be assessed through future plan of subdivision applications. These accesses will be built to municipal standards.

A collector road on the west side of the Study Area was considered. This road was screened out due to impacts on the Natural Heritage System and crossing of the Nichol Drain.

6.2.2 Road Network

Analysis of total future traffic operations was undertaken to assess road operations and identify improvements are required. The Transportation Study identified several road and intersections within the Study Area required to ensure acceptable operations due to the increase in traffic volumes. The recommended improvements are summarized below.

6.2.2.1 Road Improvements

Tower Street South

The section of Tower Street South, between the Skyline Retail access and Second Line currently consists of a single lane in each direction. Under future total conditions, this portion of the road is recommended to be upgraded to provide a minimum 4-lane cross-section. If direct access to Tower Street is planned from the commercial development, inclusion of a continuous two-way left turn lane between McQueen Boulevard and Second Line should be considered.

Highway 6

To the south of Second Line, Highway 6 is operated by the MTO. This is assumed to continue. The Transportation Study assumes the section of Highway 6, between Second Line and Wellington Road 7 will be upgraded to a 4-lane rural cross section by 2031. This will be sufficient to accommodate increased volumes travelling along this corridor due to developments planned within South Fergus.

6.2.2.2 Intersection Improvements

The following lists intersections where improvements from background conditions are required to provide acceptable operations to the 2049 horizon and the year each improvement is to be in place to ensure adequate performance of the network is maintained. New intersection construction or the intersection of new legs is recommended to be in place at the start of the development phase.

- Tower Street at McQueen Boulevard (2039 to serve the horizon of 2039-2049)
 - 50 metre exclusive right turn lane on the north leg
 - 30 metre exclusive right turn lane on the south leg

- Lengthening the south bound left turn storage to 75 metres
- Addition of protected left turn phases (advanced green) for all left turn movements
- Tower Street at retail access (2025 to serve Phase 2 between 2025-2031)
 - Addition of a west leg to serve the development, containing one shared through/right turn lane and one 50 metre exclusive left turn lane
 - Addition of a 75 metre exclusive left turn lane on the north approach
 - Addition of a 100 metre exclusive left turn lane on the south leg
 - Addition of protected left turn movements to the signal phasing plan for northbound and south bound left turn movements
- Tower Street at retail access (2039 to serve the 2039-2049 horizon)
 - Addition of a 50 metre exclusive right turn lane on the north leg
- Tower Street South and East/West Collector Road (2031 to serve Phase 3 from 2031-2039)
 - Construction of a new signalized T-intersection connecting the east/west collector road to Tower Street. The configuration would include:
 - a north leg with two through lanes and one 100 metre exclusive left turn lane with a protected left movement
 - a south leg with two through lanes and one 100 metre exclusive right turn lane
 - an east leg with one 50 metre exclusive left turn lane and one exclusive right turn lane.
- Tower Street South/Second Line (2039 to serve the horizon of 2039-2043)
 - Addition of a 30 metre exclusive left turn lane on the east leg
 - Addition of a 50 metre exclusive left turn lane on the west leg
 - Addition of protected left movements to the signal phasing plans for all left turn movements.

The Transportation Study also analyzed the feasibility of a roundabout at the intersection of Tower Street and Second Line and recommends a conventional signalized intersection rather than a roundabout due to anticipated lengthy queues along Tower Street during the afternoon peak hour.

6.2.3 Trails

The recommended MESP provides for trails and pedestrian facilities. The conceptual trail network is illustrated on the Preferred Land Use Plan. There are opportunities to extend the off-road multi-use trail network in appropriate environmental buffers, stormwater management facilities and parks and open space. There are also opportunities to allow for the extension of the bicycle network in

connection with the collector road network. The precise location of trails and bicycle lanes will be determined through future plan of subdivision applications. Where trails are planned within the buffers of natural heritage features, additional guidance on design details should be provided in an EIA (i.e. lighting, plantings, signage, trail material, etc).

6.3 Water and Sanitary Service Connections

A Functional Servicing Report was prepared by Tatham Engineering (**Appendix H**) to determine the recommended approach to provide sanitary sewer and water services to the Study Area. The analysis reviewed the existing connection points for both sanitary and water services, evaluated potential connection locations and analyzed infrastructure capacity to accommodate the Study Area.

6.3.1 Sanitary Services

Six options are considered in the Functional Servicing Report for servicing the Study Area and connecting to the Union Street SPS. From the Union Street SPS, wastewater will be conveyed to the Fergus Waste Water Treatment Plant ("WWTP"). The internal servicing routing was considered through the various options considered the sewer invert at the outlet from the Study Area. The following section describes each of the options analyzed.

Until the sanitary trunk sewer is constructed, the Tower Street Sewage Pumping Station ("SPS") has sufficient capacity to accommodate wastewater for the first phase of development at the northeast portion of the Study Area. Wastewater will be directed to the existing maintenance hole at the intersection of McQueen Boulevard and Millburn Boulevard, where it will then be conveyed to the Tower Street SPS. At such time that the Tower Street SPS is decommissioned, flows will be redirected to a future sanitary sewer on Guelph Street.

The Fergus Waste Water Treatment Plant ("WWTP") does not have sufficient capacity to treat the projected additional wastewater flow from the entire South Fergus area. A facility expansion to increase the capacity will be required for full build out of the Study Area.

6.3.1.1 Sanitary Servicing Options

Two routes for an external sewer outlet were considered:

- Route One: Guelph Street to Union Street
- Route Two: Guelph Street to the Nichol Drain No. 13 to Union Street

The six servicing options considered are described as follows:

Option One – The entire Study Area and the Tower Street SPS service area would drain by gravity to a new SPS located in the northwest corner of the Study Area. The new SPS would pump flows via a forcemain along Guelph Street to Union Street as it is considered to be the most direct route and is within a public right-of-way. In this option, Barnett Crescent, Cummings Crescent and Chambers Crescent could drain south on Guelph Road by gravity to the new SPS in the future.

Option Two – Option Two is similar to Option One, however, the new SPS forcemain would discharge to a proposed trunk gravity sewer on Guelph Street, and from there connect to Union Street. In this option, only limited portions of Cummings Crescent and Chambers Crescent could

drain by gravity to the new trunk sanitary sewer in the future. This option requires an outlet that is in part on private lands.

Option Three - The entire Study Area and the Tower Street SPS service area would drain by gravity to a proposed deep trunk sanitary sewer on Guelph Street and from there connect to Union Street.

Option Four – This option is similar to Option Three, with the exception of that the catchment area at the southwest corner of the Study Area (Catchment 3) would drain by gravity to a proposed sanitary sewer on Guelph Street that would connect that would connect to the proposed deep trunk sanitary sewer on Guelph Street that would service the remainder of the Study Area. External Routes 1 or 2 could be used to connect to Union Street.

Option Five – Catchment Areas 4 and 5 would drain to a new SPS located near the intersection of Tower Street and Nichol Drain No. 2. This new SPS would convey flows under the drain and up to a shallow sewer on the west side of the drain. The west side of the Study Area would drain by gravity to a proposed trunk sanitary sewer on Guelph Street. External Routes 1 or 2 could be used to connect to Union Street. This option reduces the flow pumped and provides shallower sewers west of Tower Street. The gravity sewer would be two metres deeper than for Option Two. This option requires a sanitary outlet that is outside of the municipal rights-of-way.

Option Six – The entire Study Area would drain by gravity to Guelph Street and to Union Street using external route one or two. This option has the deepest sewer depth with over 50% of the sewers within the Study Area constructed below six metres and some exceeding 27 metres.

The six sanitary servicing options were screened based on their constructability and feasibility. The main factors that impact their constructability and feasibility are sewer depths and anticipated rock depth below the existing ground. Screening is detailed in the Functional Servicing Report.

Through the initial screening, Options Three, Four and Six were screened out. Options One, Two and Five were assessed further. A sanitary pump station is required in the Study Area for Options One, Two and Five. The highest ranked option was Option One as it can be constructed within the Township's right-of-way, has the lowest anticipated project costs and has the potential to service lots beyond the Study Area.

6.3.1.2 Preferred Option

The internal sanitary servicing configuration for Option One involves conveying sanitary flows from the Study Area, Tower Street SPS service area to a future SPS proposed to be constructed in the northeast portion of the Study Area.

East of Tower Street, the development is proposed to have trunk sewers along the north-south collector road to the intersection with Second Line that will convey the wastewater through a trunk main proposed along the east-west collector road from the intersection with Scotland Street to Tower Street. All wastewater will flow from the east half of the Study Area across Tower Street and north to the proposed SPS. The preliminary Sanitary Drainage Plan is included as **Figure 16**. Smaller diameter sanitary sewers will be looped through the development parcels. The areas to be serviced with existing infrastructure, alignment and sizing of the infrastructure will be determined through detailed design of the plan of subdivision.

6.3.1.3 Hydraulic Modelling

Sanitary modelling was conducted using an existing average wastewater generation rate of 213 L/person/day, which resulted in existing sanitary peak flows closer to the Tower Street SPS capacity. Downstream of the Tower Street SPS, the model predicts the trunk sewers on Tower Street experience surcharging under current conditions because the calculated existing flows are near the capacity of the SPS. However, there have been no reported surcharging issues in the area that validate the model's findings.

With additional projected flows from the Catchment 1, the pumps in the Tower Street SPS would cycle more frequently but at the same pumped flow rate. Therefore, surcharging is not anticipated to occur. Flow monitoring is recommended to confirm if the SPS is operating near its capacity and if sewers are experiencing surcharging.

6.3.2 Water Services

Planned upgrades to the current water supply system include the replacement and expansion of Wells F2 and F5 and two new wells (WA3 and WA5). The increased capacity as a result of the planned well expansion and new wells can accommodate the planned development of the Study Area. There are no known existing constraints that currently limit the capacity of the existing drinking water network to meet the water demands.

Four connection points to the existing water distribution system are proposed for the Study Area:

- Connection 1 is at the west dead end of the 300mm diameter watermain on McQueen Boulevard
- Connection 2 is at the south dead end of the 300mm diameter watermain on Tower Street
- Connection 3 is at the intersection of the 200mm and the 250 mm diameter watermains at McQueen Boulevard and McTavish Street
- Connection 4 is at the south dead end of the 300 mm diameter watermain on Scotland Street.

There is potential for a future connection to Guelph Street when watermains are extended on Guelph Street and Second Line.

The Study Area is proposed to be serviced by 300 mm diameter trunk watermains along the north-south collector road until the intersection with the east-west collector road. A 300mm diameter trunk watermain is proposed along this roadway from the intersection with Scotland Street and Tower Street. Smaller diameter watermains will be looped throughout the development parcels. The alignment of these watermains will be determined through detailed design.

Hydraulic modelling was undertaken which demonstrates that the operating pressures are sufficient to address fire flows for the Study Area.

The proposed water distribution system is illustrated on **Figure 17**.

6.3.3 Grading

The predominant grading consideration was the storm drainage patterns and preliminary stormwater management facility locations and designs.

The grading plan maintains the existing drainage conditions at the limits of the Study Area by restricting post development peak flow rates to pre-development levels and reduces the potential for adverse impacts resulting from changes to the drainage due to development.

The proposed stormwater management facilities (described in the next section) provide the necessary primary water quantity control. The stormwater management plan provides Level 1 “Enhanced” water quality control for the site effluent at the site outlets.

Safe conveyance of the Regulatory Storm event peak flows through the Study Area to the downstream drainage system is provided. Drainage from all external lands is accommodated within the proposed drainage design. Detailed grading design will occur through future Plan of Subdivision applications.

6.4 Stormwater Management

A Stormwater Management Plan and Report was prepared by Tatham Engineering (**Appendix I**) in support of the MESP and Secondary Plan. The purpose of this report was to outline existing conditions and prepare a stormwater management strategy within the Secondary Plan Area. This strategy includes the proposed drainage pattern the stormwater management criteria and strategy to provide water quality and quantity control, and the erosion and sediment control plan. The stormwater management strategy for the Study Area is intended to be used in the preparation of detailed stormwater management designs through future plan of subdivision applications.

The Stormwater Management Plan maintains existing drainage conditions at the limits of the Study Area by restricting post-development peak flow rates to pre-development levels and reduces adverse impacts resulting from changes to drainage as a result of development. The stormwater management facilities proposed provide the primary water control necessary. The stormwater management plan provides enhanced water quality control for site effluent. Safe conveyance of the regulatory storm event peak flows are provided through the Study Area to the downstream drainage system. Drainage from external lands is accommodated within the proposed drainage design. Erosion and sediment control facilities are recommended.

The Stormwater Management Plan included a number of stormwater management criteria that informed the overall stormwater design. The stormwater management design identified the need for six stormwater management ponds within the Study Area. Operating conditions for each of these ponds has been recommended and will be further assessed through Plan of Subdivision applications. In addition, the Existing Nichol Grain No. 2 Phase 1 Pond as well as the St. Andrews Subdivision Existing SWM Pond have been assessed. However, detailed review is required to confirm functionality and design through the future plan of subdivision application process.

The recommended stormwater management facility locations are illustrated on the Preferred Land Use Concept included **Figure 15**. The Secondary Plan has been written to allow for stormwater

management facilities in all land use designations and for further detailed analysis to confirm the final location and size of the stormwater management ponds.

6.4.1 **Stormwater Management Criteria**

The following criteria were established in preparation of the stormwater management plan for the Secondary Area:

- Maintain existing stormwater runoff rates at key road crossings in Nichol Drain No. 2 and No. 13 by restricting post-development peak flow rates to pre-development levels for the 1:2 year through 1:100 year storms. Where necessary erosion control should be provided based on the receiving watercourse and geomorphological recommendations.
- Achieve the required Level 1 “Enhanced” water quality treatment.
- Consider water balance conditions and infiltration techniques for implementation based on the findings of groundwater and hydrogeological recommendations.
- Provide for safe conveyance of the Regulatory Storm event peak flows to the downstream drainage system.

6.4.2 **Stormwater Management Facilities**

Proposed drainage patterns have been created for the Study Area which identify where quantity and quality control will be required following development. The proposed catchment areas are illustrated on **Figure 18**. Minor flows will be drain via storm sewer networks and major storms will be conveyed through the municipal rights-of-way and overland flow routes to their respective outlets (stormwater management facilities).

A total of six stormwater management facilities have been proposed for the Study Area. These provide water quantity and quality controls, as required by the MOE Stormwater Management Planning and Design Manual and the design criteria set in the Township of Centre Wellington Development Manual. The existing Nichol Drain No. 2 wet pond, the Westminster Subdivision wet pond and the natural wetland have been assessed at a preliminary level and confirmed to be adequate. It is recommended that these facilities/features be reassessed to confirm their functionality as design and development patterns evolve.

The location of the proposed stormwater management facilities is illustrated on **Figure 18**. The proposed facilities are summarized below:

- SWM Facility 401 – serves as mainly a water quality pond given for an area of approximately 6.35 hectares of residential and highway commercial lands located at the corner of Highway 6 and Second Line. There is an opportunity to reduce the size of this pond by implementing on-site controls in the gateway commercial lands that the pond services. This can be explored at the detailed design stage.
- SWM Facility 402 – is located on the west side of Nichol Drain No. 2 and services the residential lands at the corner of Second Line and Guelph Street.

- SWM Facility 403 - is proposed as a wet pond and provides quantity and quality control for approximately 16 hectares of land at the northwest corner of the Study Area before it discharges to Nichol Drain No. 2. The size pond could be reduced by implementing on-site controls in the mixed-use areas this pond serves. This could be explored at the detailed design stage.
- SWM Facility 404 – is proposed as a wet pond and provides quantity and quality control for approximately 38.6 hectares of land southwest of the proposed McTavish Street extension and southeast of Nichol Drain No. 2, before discharging into Nichol Drain No. 2 just upstream of Highway 6. The size of the pond could be reduced by implementing on-site controls in the mixed-use areas this pond serves. This could be explored at the detailed design stage.
- SWM Facility 405 – is a wet pond that provides quality control and some quantity control for approximately 30.2 hectares of developable land east of the proposed McTavish Street extension and 29.6 hectares of external land before it discharges into the existing wetland and Nichol Drain No. 2. Strict post to pre quantity control is not required for this pond due to the wetland immediately downstream providing control ensuring that flows beyond the wetland do not increase in the post development condition. The wetland alone does not provide sufficient water quantity control, as flows increase at Tower Street and Second Line from pre- to post- conditions. Further, it was concluded that due to the volume of flow conveyed through this facility, the storm water management facility provides better water quality treatment than a series of oil grit separators.
- SWM Facility 406 – is a wet pond that provides quality and quantity control for approximately 18.8 hectares of land in the northwest corner of the Study Area and outlets to a roadside ditch on Guelph Street before entering Nichol Drain No. 13.

In addition to the six proposed stormwater management facilities, there are two existing Stormwater Management Facilities:

- Nichol Drain No. 2 Phase 1 SWM Facility – The only change to the watershed of this facility is the proposed medium density residential development to the northeast of the rear drainage channel of the existing highway commercial lands. Under proposed conditions this facility is anticipated to operate normally and does not require any improvements.
- Westminster Subdivision Existing SWM Pond - Additional flows are not proposed to be routed to this facility due to outlet constraints. The stormwater management strategy proposes a 13 hectare reduction in the contributing area to this facility as runoff will be diverted to SWM Facility 406. As a result the Westminster SWM Pond will have reduced water levels and discharge rates.

Finally, wetlands within the Study Area will continue to collect run-off directed toward them following development and will therefore be used for quantity control. A small change in the pre to post development flows directed into the wetlands is anticipated but will not change their function from a water conveyance perspective.

An Erosion Threshold Assessment has been completed which determined that the proposed stormwater management plan provides effective erosion control and there are no adverse impacts anticipated on the downstream reached of Nichol Drain No. 2 as a result of development of the Study Area.

6.4.3 **Stormwater Quality Control and Water Balance**

Nichol Drain No. 2 and No. 13 are part of the Grand River Watershed and therefore Level 1 “Enhanced” water quality control is required for all discharge to the two municipal drains. The stormwater quality plan includes the following:

- Stormwater Management Facilities – water quality control for most of the Study Area will be provided through the proposed stormwater management facilities. The facilities will be designed and constructed to provide sufficient water quality treatment for the runoff generated by the Study Area.
- Oil Grit Separators – on the west side of the Study Area, adjacent to Guelph Street, approximately 2.6 hectares of land planned for low density residential development will drain directly to the wetland to the south. Primary water quality control for this catchment will be provided by an oil grit separator that outlets to a wetland and into the west branch of Nichol Drain No. 2.
- Water Balance and Infiltration – infiltration targets have been established for each development area in the Study Area. LID techniques may include soakaway pits and rain gardens on lots and common space areas and can be implemented through individual Plan of Subdivision applications to achieve the necessary balance. Widespread LIDs in public rights-of-way are not anticipated to be required. Given the relatively high groundwater level in many areas, infiltration targets and implementation strategies should be revisited at the detailed design stage.

6.4.4 **Hydraulic Analysis**

The stormwater management plan directs drainage to Nichol Drain No. 13 along Guelph Road, and accordingly, an assessment of the ditch capacity was required to confirm that flows can safely be conveyed from SWM Facility 405 to Nichol Drain No. 13. The analysis considered:

- improvements to the eastern roadside ditch; and,
- conveyance of flows from SWM Facility 406, immediately beneath Guelph Road to the western roadside ditch and ditch improvements to Nichol Drain No. 13.

A hydraulic model was generated using HEC-RAS which confirmed that containing flows within the eastern ditch, as configured, is not feasible. The western ditch was also reviewed for its potential to convey flows.

It is recommended that discharge from SWM Facility 405 be conveyed beneath Guelph Road via twin culvert into the roadside ditch west of Guelph Road. This will provide the capacity to convey the 1:100 year return frequency design storm peak flow to Nichol Drain No. 13.

Guelph Road will be urbanized between Elora Street and Second Line in the future. As part of the urbanization of Guelph Road, the existing roadside ditches will be removed and replaced with storm sewers which will be designed to convey the 1:100 year peak flow from SWM Facility 406 to Nichol Drain No. 13. Guelph Road should be designated as an overland flow route to convey the Regional peak flow safely to Nichol Drain No. 13.

SWM Facility 406 will provide the requisite water quality treatment, extended detention, pond drawdown time and erosion control for the runoff draining from the South Fergus Study Area to Nichol Drain No. 13. This, combined with the reduction in peak flows draining to Nichol Drain No. 13 will ensure flooding and erosion along Nichol Drain No. 13 is not exacerbated.

6.4.5 Siltation and Erosion Control

Siltation and Erosion Control will be implemented for all construction activities within the Study Area, including vegetation clearing, topsoil stripping, road construction and stockpiling materials. It is recommended that the stormwater management facilities associated with each phase of development be constructed first to provide sediment storage and quality control during construction activities.

Grading, servicing and building construction should be carried out in a manner that a minimum amount of erosion occurs and such that sedimentation facilities control any erosion that does occur. Erosion, sediment and pollution control measures should include: erecting silt fences around construction sites; providing sediment traps; confining refueling/servicing of equipment to areas well away from the minor/major system elements; and fitting catch basins and inlet structures with sediment traps during construction.

6.5 Fiscal Impact

A Fiscal Impact Study was prepared by Altus Group in support of this MESP to analyze the potential financial impacts of a proposed residential development on the finances of the Township (**Appendix J**). This report examines the estimates of development charge revenues, capital infrastructure requirements and ongoing revenues and expenditures.

6.5.1 Development Charge Revenues

The Township imposes municipal-wide development charges (DCs) for all services excluding water and wastewater services. Under the current DCs the proposed development would generate approximately \$45.8 million in DC revenues, including \$24.8 million for roads, \$12.6 million for library services, \$4.6 million for fire protection services and \$2 million for parks and recreation services.

The Township also imposes separate DC charges for water and wastewater in the urban area. In total, development of the Study Area would generate approximately \$29.2 million in additional Township DC revenues for water and wastewater services.

6.5.2 Capital Infrastructure Requirements

It is estimated that the combined water servicing infrastructure for the Secondary Plan would consist of approximately 16.9 km of watermains. It is assumed that the watermains would be a capital

funding responsibility of the developer based on the current Township's Local Service Policy. The long term operating, maintenance and lifecycle costs would be the responsibility of the Township.

It is estimated that the combined sanitary servicing infrastructure for the Secondary Plan would consist of approximately 15.3 km of sanitary services. The Township's Local Service policy provides that internal sewers less than 250mm in size would be a capital funding responsibility of the developer. There are 11.0km of sanitary sewers sized less than 250mm. The long term operating, maintenance and lifecycle costs would be the responsibility of the Township. The remaining 4.3km of sanitary sewers would be DC eligible works.

Development of the Study Area requires stormwater management facilities. Based on the Township's Local Service Policy the capital costs for internal stormwater management ponds will be the responsibility of the developer, or subject to cost sharing agreements among developers. The long term operating, maintenance and lifecycle costs would be the responsibility of the Township.

Based on the Township's local service guidelines, the internal roads would be direct developer responsibility funded by the developer. The required external road improvements that meet the definition of DC eligible works would be funded by Township DC revenues. Both the local roads and the external roads will be assumed by the Township who will have full responsibility for operation and maintenance costs.

6.5.3 Ongoing Revenues and Costs

This section includes an overview of estimated revenues (property tax revenues, non-tax revenues, water/waste water revenues) and expenditures (net operating expenditures, annual operating costs, annual lifecycle funding, indirect lifecycle costs).

6.5.3.1 Revenues

The Fiscal Impact Assessment undertaken set out that the total annual property tax revenue estimated for the development of the Study Area is \$13 million, including approximately \$3.8 million annually for the Township.

In addition to property tax revenues, the units and residents will also generate a variety of annual non-tax revenues through fees, fines and donations. It is estimated that non-tax revenues will be approximately \$119 per capita and \$27 per job. This equates to \$843,800 per year in revenue including \$840,000 for the residential component and \$3,600 for the non-residential component.

With regard to water and wastewater user rate revenues, it is estimated that the development of the Study Area would generate \$3.2 million per year in water rate revenues and \$5.5 million per year in wastewater rate revenues.

6.5.3.2 Expenditures

The additional operating costs that will result in residential and non-residential uses for services is estimated to be approximately \$466 per capita and \$251 per job. This includes services such as recreation, cultural services and fire protection.

The calculation of annual incremental operating costs for roads, water and sanitary services is calculated on a per unit basis. The proposed development is expected to generate \$2.3 million in annual operating costs.

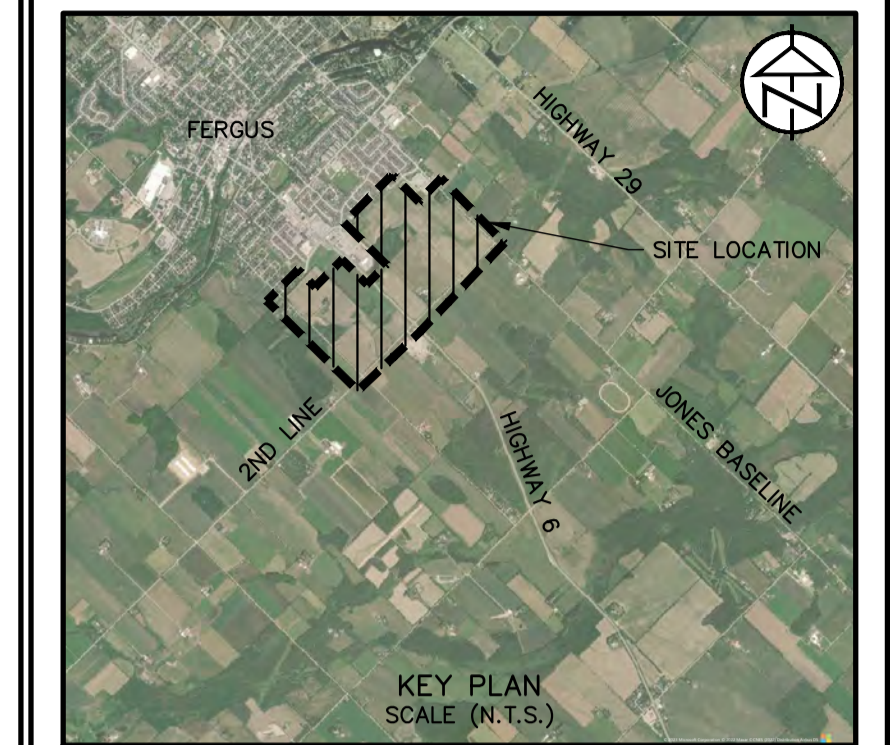
Costs associated with roads, water, sanitary sewer and stormwater works that will ultimately be the responsibility of the Township. This includes operating and maintenance costs but also 'lifecycle' funding requirements to allow for the replacement of works as necessary. Annual lifecycle costs are estimated as \$2.3 million for both the works to be installed but also the development's share of estimated lifecycle costs for all Township-wide infrastructure. Annual operating costs for the roads, water and wastewater infrastructure within the Study Area is estimated to be \$2.3 million.

6.5.3.3 Fiscal Impact

Based on the findings of the Fiscal Impact Analysis, development of the South Fergus Area is estimated to generate a significant positive fiscal impact for the Township at buildout. The estimated annual income to the Township equates to approximately \$5.4 million or \$752 per capita/job per year.

Figure # 16
**SANITARY DRAINAGE PLAN
 OPTION 1**

South Fergus MESP and Secondary Plan
 Township of Centre Wellington
 County of Wellington



LEGEND

- SITE BOUNDARY: [Dashed line symbol]
- CATCHMENT BOUNDARY: [Green dashed line symbol]
- AREA ID: (M)
- SANITARY MAIN: [Red dashed line symbol]
- FORCEMAIN: [Yellow dashed line symbol]
- DRAINAGE DIRECTION: [Arrow symbol]
- CATCHMENT: (#/#)
- POPULATION: (P)
- EMPLOYMENT: (E)
- AREA IN HECTARES (ha): (A)

FLOW AREAS

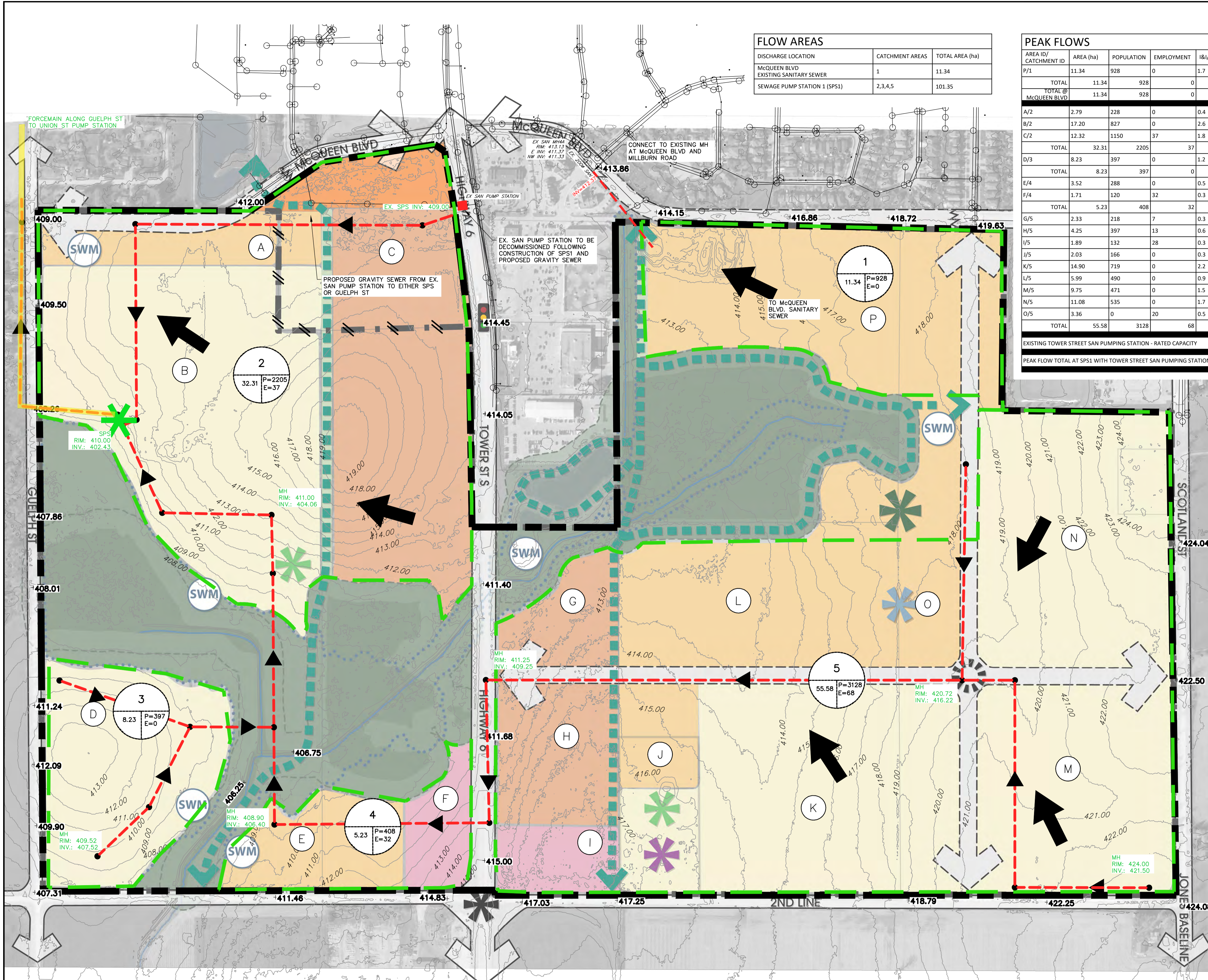
DISCHARGE LOCATION	CATCHMENT AREAS	TOTAL AREA (ha)
McQUEEN BLVD EXISTING SANITARY SEWER	1	11.34
SEWAGE PUMP STATION 1 (SPS1)	2,3,4,5	101.35

PEAK FLOWS

AREA ID/ CATCHMENT ID	AREA (ha)	POPULATION	EMPLOYMENT	I&I (L/S)	ADF (m ³ /d)	PF (L/S)
P/1	11.34	928	0	1.7	472	13.4
TOTAL	11.34	928	0	1.7	472	13.4
TOTAL @ McQUEEN BLVD	11.34	928	0	1.7	472	13.4
A/2	2.79	228	0	0.4	116	3.3
B/2	17.20	827	0	2.6	512	13.0
C/2	12.32	1150	37	1.8	601	17.2
TOTAL	32.31	2205	37	4.8	1229	33.5
D/3	8.23	397	0	1.2	246	6.2
TOTAL	8.23	397	0	1.2	246	6.2
E/4	3.52	288	0	0.5	146	4.1
F/4	1.71	120	32	0.3	71	1.9
TOTAL	5.23	408	32	0.8	217	6.0
G/5	2.33	218	7	0.3	114	3.3
H/5	4.25	397	13	0.6	207	5.9
I/5	1.89	132	28	0.3	77	2.1
J/5	2.03	166	0	0.3	84	2.4
K/5	14.90	719	0	2.2	445	11.3
L/5	5.99	490	0	0.9	249	7.1
M/5	9.75	471	0	1.5	291	7.4
N/5	11.08	535	0	1.7	331	8.4
O/5	3.36	0	20	0.5	96	1.7
TOTAL	55.58	3128	68	8.3	1894	49.6

EXISTING TOWER STREET SAN PUMPING STATION - RATED CAPACITY: 40.5

PEAK FLOW TOTAL AT SPS1 WITH TOWER STREET SAN PUMPING STATION DECOMMISSIONED: 149



OPTION 1: SEWAGE PUMPING STATION PRIMARY LOCATION - ALL SANITARY CATCHMENT AREAS AND EXISTING TOWER STREET SEWAGE PUMPING STATION SERVICING AREA TO DRAIN VIA GRAVITY TO SPS. FORCEMAIN TO EXISTING UNION STREET PUMP STATION (MAINTAIN 3m DEPTH ALONG ROUTE)

Base Map Source: TOPOGRAPHIC SURVEY (TATHAM) COMBINED WITH TOPOGRAPHIC MAPPING (NORTHWAY/PHOTOMAP REMOTE SENSING LTD.)

DATE:	JUNE 14, 2021
SCALE:	1:2500
FILE:	120157
DRAWN:	KH

10087 Report 02101 - South Fergus MESP and Secondary Plan/DCS/Plan/Drawn/Design/02101

PLANNING
 URBAN DESIGN
 & LANDSCAPE
 ARCHITECTURE

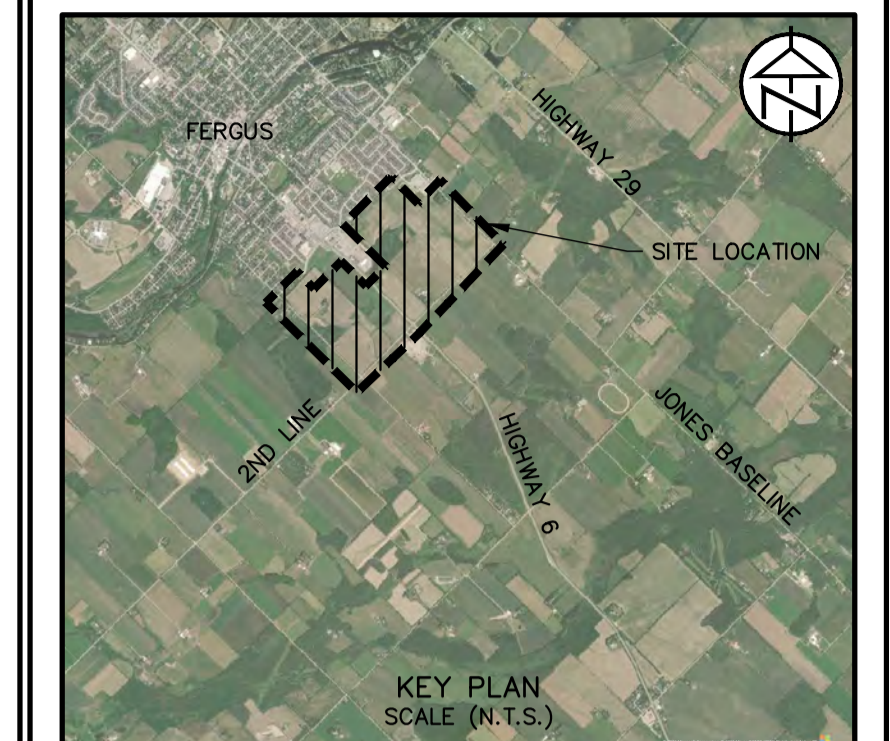
MHBC

FRICORP
 ECOLOGICAL SERVICES

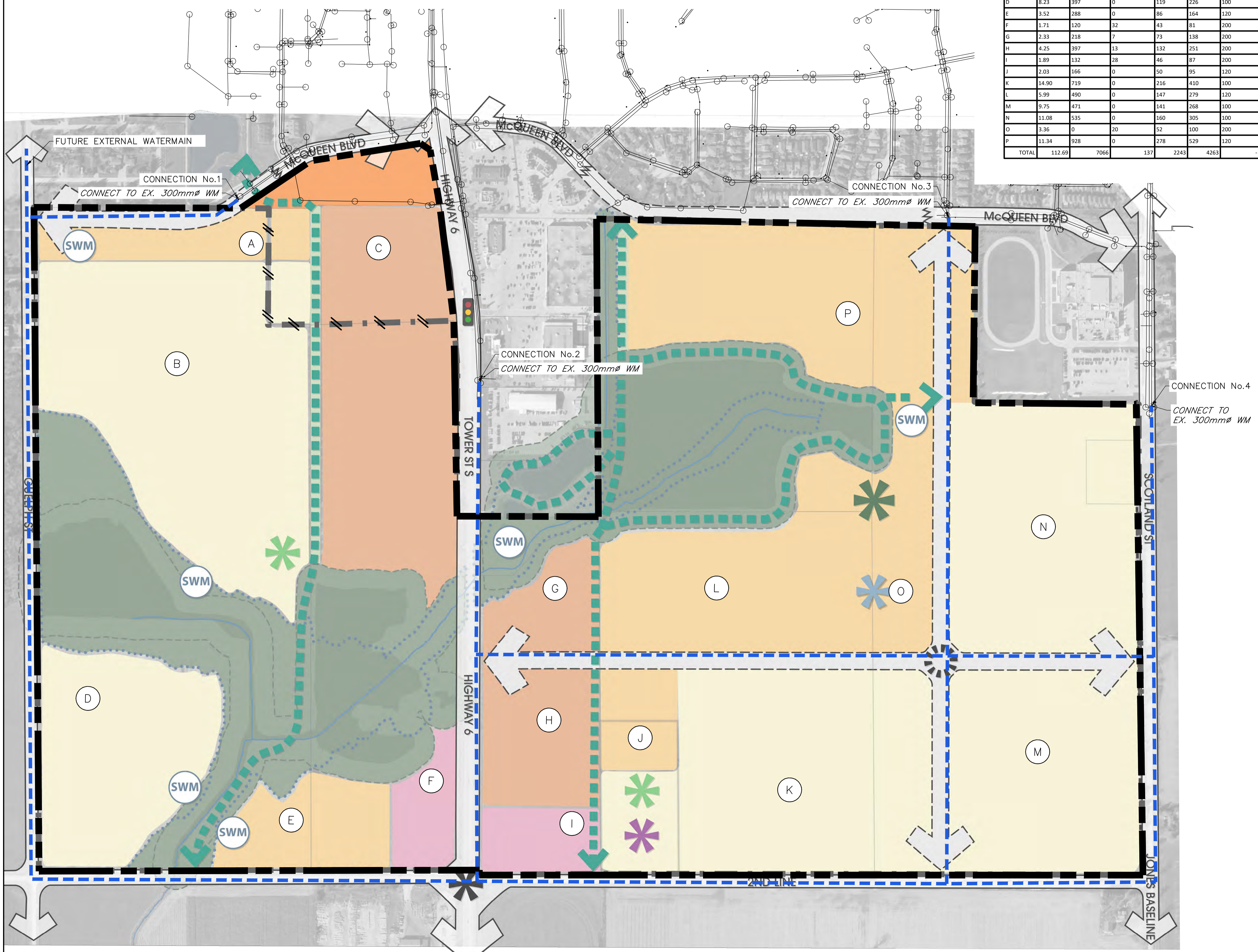
TATHAM
 ENGINEERING

Figure # 17
WATERMAIN LAYOUT

South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington



AREA ID	AREA (ha)	POPULATION	EMPLOYMENT	DEMAND (m ³ /d)		SUGGESTED FIRE FLOW (L/S)
				ADD	MDD	
A	2.79	228	0	68	130	120
B	17.20	827	0	248	471	100
C	12.32	1150	37	384	729	200
D	8.23	397	0	119	226	100
E	3.52	288	0	86	164	120
F	1.71	120	32	43	81	200
G	2.33	218	7	73	138	200
H	4.25	397	13	132	251	200
I	1.89	132	28	46	87	200
J	2.03	166	0	50	95	120
K	14.90	719	0	216	410	100
L	5.99	490	0	147	279	120
M	9.75	471	0	141	268	100
N	11.08	535	0	160	305	100
O	3.36	0	20	52	100	200
P	11.34	928	0	278	529	120
TOTAL	112.69	7066	137	2243	4263	



LEGEND

- SITE BOUNDARY
- PROPOSED 300mm \varnothing TRUNK WATERMAIN
- AREA ID M

Base Map Source: TOPOGRAPHIC SURVEY (TATHAM) COMBINED WITH TOPOGRAPHIC MAPPING (NORTHWAY/PHOTOMAP REMOTE SENSING LTD.)

DATE:	JUNE 14, 2021
SCALE:	1:2500
FILE:	120157
DRAWN:	KH

1:2021 Project: 02107 - South Fergus MESP and Secondary Plan/CCO/over Analysis - Design/Implementation

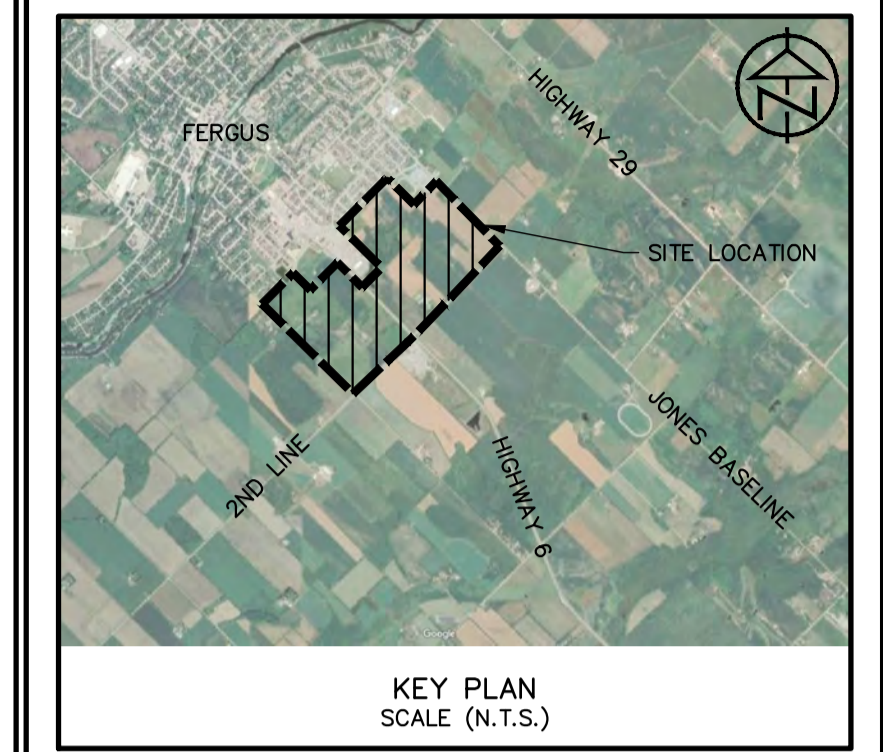
MHBC PLANNING
 URBAN DESIGN
 & LANDSCAPE
 ARCHITECTURE

FRICORP
 ECOLOGICAL SERVICES

TATHAM
 ENGINEERING

Figure # 18
PROPOSED DRAINAGE PLAN

South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington



CULVERTS

CULVERT 1:	3.02m X 1.82m BOX CULVERT
CULVERT 2:	1.2m \varnothing CSP
CULVERT 3:	3.0m X 2.0m BOX CULVERT
CULVERT 4:	0.55m \varnothing & 0.6m \varnothing HDPE
CULVERT 5:	TO BE DETERMINED
CULVERT 6:	TO BE DETERMINED
CULVERT 7:	TO BE DETERMINED
CULVERT 8:	0.45m \varnothing CSP
CULVERT 9:	0.45m \varnothing CSP

LEGEND

- SOUTH FERGUS SECONDARY PLAN AREA
- OVERLAND FLOW DIRECTION
- CATCHMENT BOUNDARY
- WETLANDS
- CATCHMENT ID
- CURVE NUMBER / IMPERVIOUS FRACTION
- CATCHMENT AREA
- SW STREAMFLOW MONITORING LOCATION
- POINT OF INTEREST

Figure # Preferred Land Use Plan

South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington

Legend

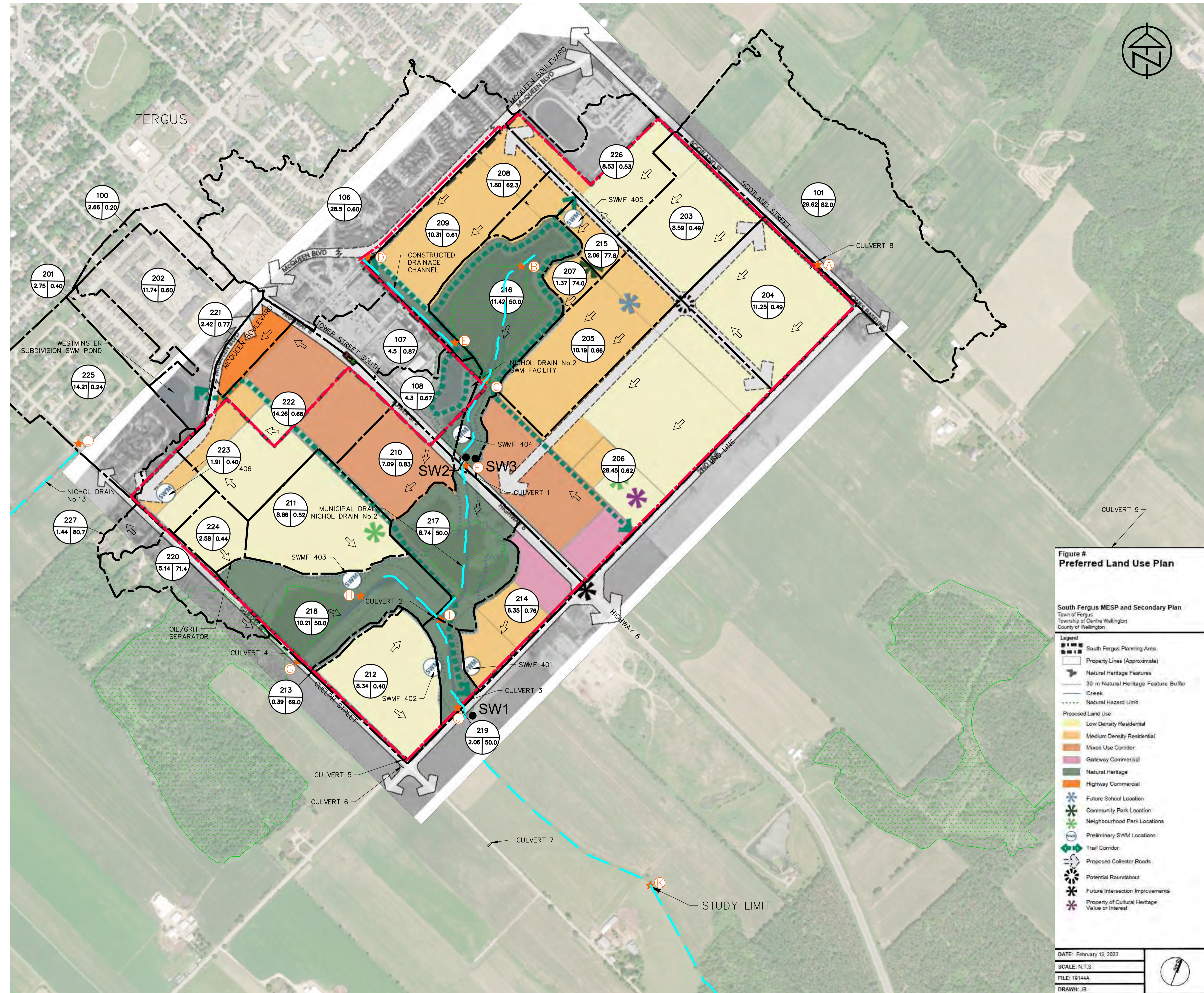
- South Fergus Planning Area
- Property Lines (Approximate)
- Natural Heritage Features
- 30 m Natural Heritage Feature Buffer
- Creek
- Natural Hazard Limit
- Proposed Land Use**
- Low Density Residential
- Medium Density Residential
- Mixed Use Corridor
- Gateway Commercial
- Natural Heritage
- Highway Commercial
- Future School Location
- Community Park Location
- Neighbourhood Park Locations
- Preliminary SWM Locations
- Trail Corridor
- Proposed Collector Roads
- Potential Roundabout
- Future Intersection Improvements
- Property of Cultural Heritage Value or Interest

Base Map Source: TOPOGRAPHIC SURVEY (TATHAM) COMBINED WITH TOPOGRAPHIC MAPPING (NORTHWAY/PHOTOMAP REMOTE SENSING LTD.)

DATE:	JUNE 2022
SCALE:	1:2500
FILE:	120157
DRAWN:	KF

©2022 Preferred Land Use Plan - South Fergus MESP and Secondary Plan/CSP/Cons. Analysis - Design/Preparation/Review

DATE:	February 13, 2023
SCALE:	N.T.S.
FILE:	19144A
DRAWN:	JB



Base Map Source: TOPOGRAPHIC SURVEY (TATHAM) COMBINED WITH TOPOGRAPHIC MAPPING (NORTHWAY/PHOTOMAP REMOTE SENSING LTD.)

DATE:	JUNE 2022
SCALE:	1:2500
FILE:	120157
DRAWN:	KF

©2022 Preferred Land Use Plan - South Fergus MESP and Secondary Plan/CSP/Cons. Analysis - Design/Preparation/Review

DATE:	February 13, 2023
SCALE:	N.T.S.
FILE:	19144A
DRAWN:	JB

MHBC PLANNING URBAN DESIGN & LANDSCAPE ARCHITECTURE

TATHAM ENGINEERING

FRICORP ECOLOGICAL SERVICES

7.0

IMPLEMENTATION

The purpose of the South Fergus MESP is to guide development of the Study Area lands by providing a framework that includes a natural heritage strategy, a servicing strategy, a stormwater management strategy and a transportation strategy. Implementation of the South Fergus MESP will occur through the Secondary Plan for the Study Area and the review of future development applications (most significantly Zoning By-law Amendment and Draft Plan of Subdivision applications).

Recommended implementation measures are set out in the following sections.

7.1 Secondary Plan

The purpose of the Secondary Plan is to address the policies of the Township of Centre Wellington Official Plan related to the detailed planning of the South Fergus Secondary Planning Area in order to facilitate its orderly development. The Secondary Plan addressed the mix, arrangement and density of land use; collector road network; the size and location of parks and school sites and the location of major services. The Secondary Plan provides a conceptual framework for the area and the basis for the preparation of future Planning Act applications.

The Secondary Plan establishes the principles for the design and development of the neighbourhoods. It also establishes the general land use patterns and conceptual locations of community infrastructure such as schools, commercial areas, parks, trails, collector roads and infrastructure. The Secondary Plan also includes the natural heritage network established through the MESP. The Secondary Plan is included as **Appendix D** to this Report.

The Preferred Land Use Concept includes the highest density area within the Study Area along the Tower Street Corridor. As such, lands on the east and west side of Tower Street are designated as *Mixed Use Corridor*. The *Gateway Commercial* designation is proposed at the northeast and northwest quadrants of the intersection of Tower Street and Second Line in order to provide a prominent gateway into Fergus. *Low Density Residential* and *Medium Density Residential* designations are located to the east and the west of the Tower Street Corridor.

All identified natural heritage features on the subject lands are designated *Core Greenlands* in the Secondary Plan. The *Core Greenlands* designation includes the limits of the natural heritage features and a recommend 30 metre buffer. The Secondary Plan permits limited uses within the recommended 30 metre buffer, including stormwater management facilities and recreational trails, subject to the findings of an Environmental Impact Study.

The distribution of land uses within the Secondary Plan Area is as follows:

- *Low Density Residential* - 41.6% of the Secondary Plan Area is planned for Low Density Residential uses

- *Medium Density Residential* – 18.8% of the Secondary Plan Area is planned for Medium Density Residential uses
- *Mixed Use Corridor* – 12.5% of the Secondary Plan Area is planned for Mixed Use Commercial uses
- *Gateway Commercial*– 2.5% of the Secondary Plan Area is planned for Gateway Commercial uses
- *Natural Heritage* – 20.5% of the Secondary Plan Area is planned for Natural Heritage
- *Collector Roads* – 4.1% of the Secondary Plan Area is planned for collector roads.

Overall, the Secondary Plan is anticipated to accommodate approximately 3,088 units and 7,066 residents. This population is based on an overall density of approximately 60 units per hectare, measured across the entire Secondary Plan Area, excluding the natural heritage features. A total of 137 jobs are projected.

The Secondary Plan includes the preferred location of a Community Park and Neighbourhoods Parks. The intent is to provide a well-connected open space network. Parks and trails are intended to be located such that they are well-distributed through the Secondary Plan Area and to also provide for integration with the parks and natural heritage network. The precise location of each will be determined through the plan of subdivision process.

A “Future School Location” is also shown on the Secondary Plan. The UGDSB advised that they have no concerns with the general location for the elementary school illustrated. The location generally satisfies the criteria found in the Board’s School Site Selection Guideline. It is centrally located within the Secondary Plan Area which will allow for a larger walking catchment area for prospective students. The school site has frontage on two collector roads and has the potential to be connected with a community park. The precise location of the school block will be determined through the plan of subdivision process.

Specific land use designations are not required for the park or school sites as they are permitted uses within the residential designations. A conceptual location for an elementary school has been shown in order to guide development through the plan of subdivision process. The UGDSB and the Wellington Catholic District School Board have indicated that additional schools may be required, depending on the ultimate population and the phasing associated with population growth within the Study Area. Any additional school board land need requirements can be determined and addressed through future plan of subdivision applications.

7.1.1 Guidelines for Development Process

The review and approval of future draft plans of subdivision will be based on this MESP and the Secondary Plan. Applications will be reviewed for conformity with these plans. As part of future draft plan of subdivision application submission, further detailed studies will be required. These will include, but are not limited to:

- Scoped traffic impact studies

- Scoped environmental impact studies
- Detailed servicing design studies
- Detailed stormwater management studies
- Grading plans

The technical studies undertaken as part of the MESP will provide the basis for, and provide direction to, any necessary future detailed studies. Future studies required as part of development applications should be consistent with and implement the recommendations of the MESP and the associated technical studies.

Urban Design Guidelines have been prepared and are included as part of this MESP as **Appendix E**. The Guidelines support the design principles of walkability, community connectivity, and attractive streetscapes and encourage the establishment of a gateway into the Fergus community. The design vision and direction established within these Guidelines is intended to be implemented through individual plans of subdivision within the Secondary Plan Area.

7.1.2 **Development Phasing**

Development phasing will be a function of the rate at which services are extended to the community and allocation of capacity associated with development within the area. The development of the Study Area is planned to proceed in two phases. The Phasing Plan has been developed based on the findings of the technical reports. Development of the commercial and institutional uses may occur in parallel with residential development. The following details the specific considerations in determining the phasing plan.

7.1.2.1 **Phase One**

The first phase of development is to be the northeast portion of the Secondary Plan Area. The extent of the phase is based on the limits of the area that can be serviced by gravity and the capacity of the Union Street pumping station. The area of the first phase could be expanded based on the capacity of the pumping station and types of units proposed in the first phase.

Appropriate stormwater management measures are to be implemented based on the extent of the first phase. Stormwater management design should be based on this MESP and may be modified and refined through the development approvals process. The road network within the first phase will be phased with development.

7.1.2.2 **Phase Two**

The Second Phase includes the remainder of the Study Area and may commence following completion of the planned upgrades to the Union Street Pumping Station. The stormwater management network will be refined through detailed design.

A trunk sewer is proposed to connect the east and west lands. The trunk sewer details will be confirmed through the detailed design with consideration of a potential alternative to route north or south of the natural features on the west side of Tower Street.

The road network through the second phase and the required intersection improvements will be phased as development occurs.

The second phase will also confirm the UGDSB requirements and the location of the elementary school planned on the east site of the Study Area.

7.2 Monitoring and Stewardship

In addition to the typical 'during construction' monitoring (eg. erosion and sediment control and stormwater management facility inspection), biological, hydrogeological and groundwater monitoring is proposed. These monitoring programs are the responsibility of the developer and include pre, during and post construction monitoring.

7.2.1 Monitoring

The EIA includes a general monitoring system and locations of proposed biological monitoring stations and activities. Recommended monitoring components are discussed below. The final monitoring programs will be determined through the draft plan of subdivision process.

Pre-Construction

- Baseline monitoring of active barn swallow nests the season prior to demolition
- Mark woodland dripline, wetland boundaries and 30 meter buffer
- Baseline monitoring of streambank stability and riparian vegetation
- Baseline documentation of the natural heritage system and buffer area
- Ensure erosion and sediment controls are installed and functioning as required by the Erosion and Sediment Control Plan.

During Construction

- Ongoing monitoring of the Erosion and Sediment Control Plan components
- Revegetation of disturbed soil and inspection to ensure adequate revegetation has occurred
- Monitor key boundaries, such as dripline, wetland and buffers to ensure compliance with EIS conclusions
- Inspect the Stormwater Management Facility for vegetation establishment, structures and hydraulic controls
- Inspect all planting materials prior to planting to ensure the correct species, health, condition and planting location
- Baseline monitoring of existing streambank stability and riparian vegetation

Post Construction

- Ongoing monitoring of the erosion and sediment controls as per the Erosion and Sediment Control Plan until no longer required
- Revegetation of disturbed soil and inspection to ensure adequate revegetation has occurred
- Inspect the Stormwater Management Facility for vegetation establishment, structures and hydraulic controls until the facilities are assumed by the Township
- Final inspection of all planted material and recommend replacement, if necessary
- Final condition monitoring of existing streambank stability and riparian vegetation.

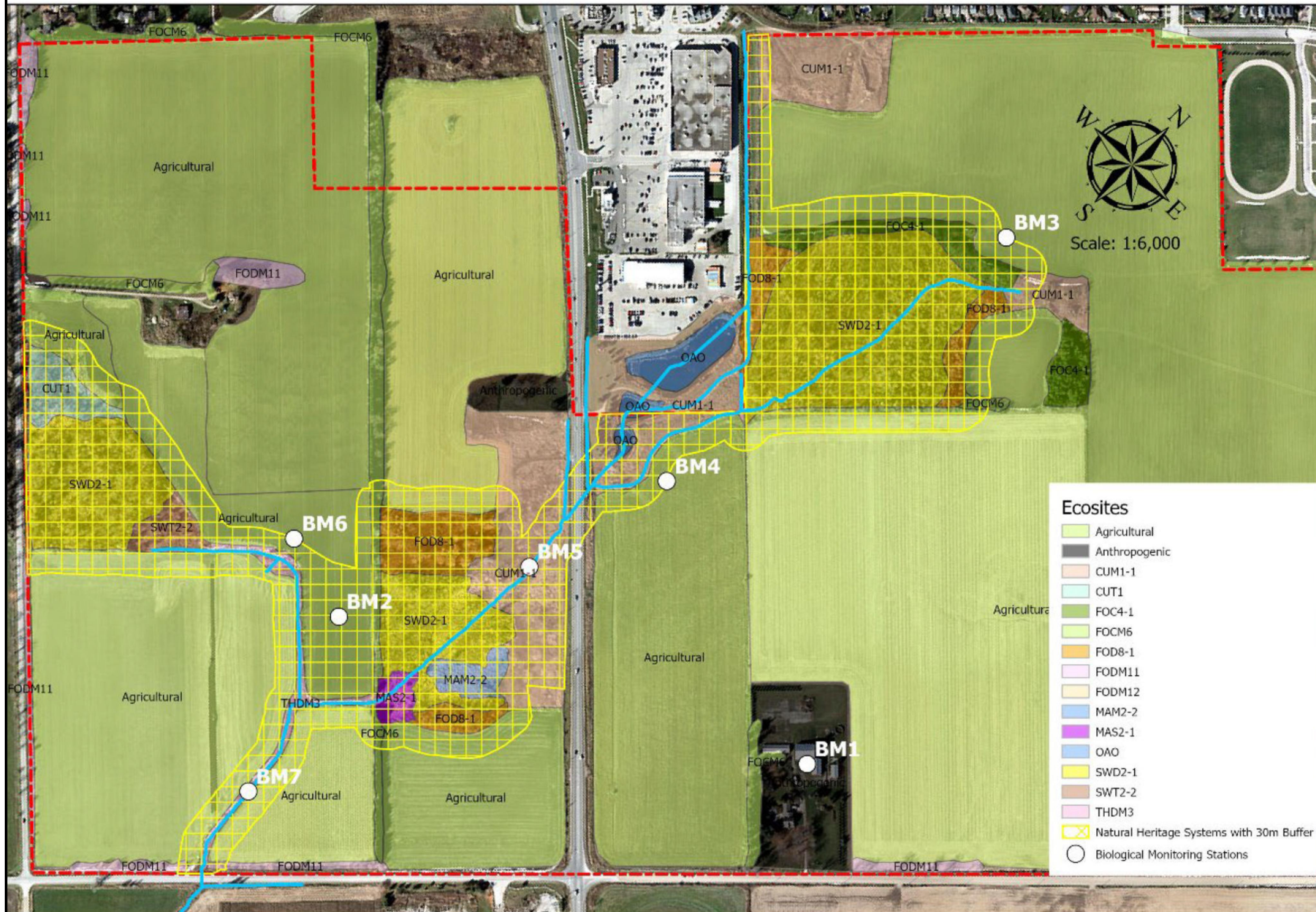
Figure 18 illustrates the general location of the biological monitoring stations.

7.2.2 **Stewardship**

The maintenance of the natural heritage features within and adjacent to the Study Area will be accomplished through implementation of the MESP's natural heritage strategy and the recommendations for setbacks, linkages and areas for ecological restoration.

Following development, ongoing maintenance and health of the natural heritage features will require appropriate actions and stewardship on the part of homeowners and residents. Future EIS studies undertaken as part of the plan of subdivision process will include recommendations related to the long term maintenance of natural heritage features and environmental stewardship. The EIS prepared through this MESP recommends that interpretative signage be placed along the trail corridors highlighting the natural heritage features and educating trail users on the trail networks. Naming of the protected natural heritage system within the development is recommended to create appreciate for the values and a common way to refer to the area.

Figure # 19
Proposed Biological Monitoring Stations
 South Fergus MESP and Secondary Plan
 Town of Fergus
 Township of Centre Wellington
 County of Wellington



Ecosites

- Agricultural
- Anthropogenic
- CUM1-1
- CUT1
- FOC4-1
- FOCM6
- FOD8-1
- FODM11
- FODM12
- MAM2-2
- MAS2-1
- OAO
- SWD2-1
- SWT2-2
- THDM3
- Natural Heritage Systems with 30m Buffer
- Biological Monitoring Stations

DATE: February, 2023
 SCALE: NTS
 FILE: 19144A
 DRAWN: GC



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MHBC PLANNING
 URBAN DESIGN
 & LANDSCAPE
 ARCHITECTURE

FRICORP
 ECOLOGICAL SERVICES

TATHAM
 ENGINEERING