Town of Lincoln

Tallman Drive Municipal Class Environmental Assessment Study

Project File Report

Thursday, November 16, 2023

B001566

CIMA+

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Study Report

Tallman Drive
Municipal Class Environmental Assessment
Town of Lincoln

Project No. B001566

Prepared by:

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This Project File Report is available for a 30 calendar-day public review period from November 16, 2023, to December 16, 2023, on the Town of Lincoln website at:

https://speakuplincoln.ca/tallman-drive-class-environmental-assessment

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1 Executive Summary

1.1 Introduction and Background

The Town of Lincoln has completed a Schedule 'B' Municipal Class Environmental Assessment (MCEA) study for improvements to Tallman Drive. The study area is located north of King Street (Regional Road 81), east of Twenty Third Street and west of Twenty Mile Creek. Tallman Drive is a rural roadway that extends from Twenty Third Street to a dead-end approximately 0.8 km easterly.

The road provides local access to a small group of farms and residences along its length. The road runs adjacent to the 20 Mile Creek tributary ravine for a length of approximately 400 m. The road is currently in a poor condition and suffers from stability and erosion issues. Although there have been previous efforts to stabilize the slope and manage erosion, the problems have persisted, and a long-term solution is needed.

1.2 MCEA Schedule

The Tallman Drive MCEA has been identified as a Schedule 'B' MCEA study and addresses Phases 1 and 2 of the planning process. A Project File Report is required for Schedule 'B' projects to document the decision-making process.

A new amendment to the MCEA was approved by MECP on March 3, 2023, after the Tallman Drive project had commenced. The 2023 amendment has resulted in adjustments to some project classification criteria and outlines a process to transition ongoing MCEA studies to the new process; given the notice of commencement for the Tallman Drive EA had been issued prior to the amendments to the MCEA coming into effect, the Tallman Drive EA can be completed under the class environmental process that was started for the project (MCEA 2000, as amended in 2015).

1.3 Notice of Study Completion

A Notice of Study Completion was issued to announce completion of the MCEA study and commencement of the review period. The notice was emailed to agencies, stakeholders, Indigenous Communities, and members of the public on the study mailing list. A hard copy notice was mailed directly to property owners in the study area. Additional details about the notification process are documented in **Section 7** of this PRF. The 30 calendar-day public review period extends **from November 16, 2023, to December 16, 2023**, and the PFR is available on the Town of Lincoln website at:

https://speakuplincoln.ca/tallman-drive-class-environmental-assessment

During the review period, parties with outstanding comments are encouraged to bring their concerns to the attention of the Town of Lincoln for resolution.

1.4 Need and Justification

Tallman Drive within the study area is in a poor condition towards its eastern end and the current eastern edge of the road is experiencing erosion and instability, due to its location next to the ravine slope. The roadway is known to experience these issues and has been subject to past rehabilitation works and is currently under a truck weight restriction. Through site inspection of the roadway, indications of potential slope instability were observed through localised areas of guide rail deformation and irregularities in the road surface. While the existing roadway is currently still fulfilling its function of providing access to surrounding residential/agricultural properties, these indications of potential slope instability highlight that the existing infrastructure issues remain and emphasise a need for a long-term solution to improve roadway safety, maintenance, and access.

1.5 Planning and Policy Context

Improvements considered by this study align with provincial and local planning and policy context, which is summarized in this Section 3. The policy framework guides infrastructure and land use planning and strategic investment decisions to support Town (and provincial) growth and transportation objectives. These policies are in place to sustain and improve the quality of life of residents while considering the broader municipal interests. Relevant plans and policies reviewed include:

- Provincial Policy Statement (2020)
- A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020)
- Greenbelt Plan (2017)
- Niagara Escarpment Plan (2017)
- Niagara Regional Official Plan (2022)
- Town of Lincoln Official Plan (2018)

1.6 Existing Conditions

Existing land use along Tallman Drive is a mix of residential, agricultural, and natural features associated with Twenty Mile Creek. A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (CHRECPIA) was conducted by this study and found that one adjacent property is listed on the Town of Lincoln Heritage Register, no properties are designated under the Heritage Act, the study area is outside

of the UNESCO Niagara Escarpment Biosphere Reserve, and 10 out of 14 surrounding properties were found to have existing built heritage resources/cultural heritage landscapes or the potential for built heritage resources/cultural heritage landscapes. In terms of Archaeological Assessment, portions of the study area retain archaeological potential that require Stage 2 archaeological assessment prior to ground disturbing activities (0.61 ha, 57.6%). A Stage 2 archaeological assessment was undertaken considering the potential improvements, and it was identified that no further archeological assessment is required (results are further detailed in Section 4.2.2.)

A Natural Heritage Assessment (NHA) was conducted by CIMA+ to identify and describe natural heritage features which may be present on or adjacent to the Site. The Twenty Mile Creek (Earth Science ANSI) was identified to be an important designated natural area and is 100 m from the study area.

1.7 Alternative Solutions

Three alternative solutions were considered by the study:

1. Do Nothing (carried forward for comparison purposes)
2. Solution 1 - Reconstruct/Rehabilitate Existing Road
3. Solution 2 – Road Realignment

1.8 Evaluation of Alternative Solutions

The alternative solutions were assessed in their ability to reasonably address the needs and opportunities. Criteria were developed to guide the assessment process so that the transportation planning, technical, and environmental (socio-economic, cultural, natural environment) conditions were factored into the assessment. Further details are included in **Section 5.2**.

Alternative Solution 2 - Realignment of Tallman Drive was identified as the overall preferred alternative. In most factor areas, Alternative 2 was identified to be preferred over other alternatives, due to reasons further detailed in **Section 5.2** with the key reasons being:

- The Do-Nothing is unviable as existing stability and erosion issues will persist and deteriorating road conditions may result in eventual closure of the road due to safety issues. While the existing road currently serves its purpose, this long-term alternative only defers action.
- Alternative 1 would result in cultural heritage impacts and footprint impacts into the ravine and adjacent natural environment. This alternative is also the most

expensive, including the need to the significant length of retaining wall to mitigate grading impacts to the ravine to the east.

- Alternative Solution 2 keeps the road away from the ravine and natural areas and enable better conformity to Town standards and current construction practices. It is also less expensive than Alternative Solution 1 as no retaining wall is required.

1.9 Recommended Plan

The preferred solution for Tallman Drive (Alternative Solution 2 - Road Realignment) was further developed and is referred to the "Recommended Plan" in the context of the Tallman Drive MCEA Study and is further detailed in the preliminary design plan and profile included in **Section 6** and **Appendix H.**

Key aspects include:

- Realignment of Tallman Drive, west of the existing road, through the construction of approximately 200 m of new local road.
- The realigned road will be classified as a Local Road and have a 20 m Rights-of-Way (ROW).
- The new local road cross-section will be in accordance with Town of Lincoln standards for a Rural Road (Standard Dwg. DPW-401). The cross-section will consist of one 3.5 m lane in each direction and 1.0 m gravel shoulders.
- Reconstruction of the existing cul-de-sac in approximately the same locations as the existing turnaround.
- Decommission of now-disused segments of the existing Tallman Drive, south of 3155 Tallman Drive. The existing length of Tallman Drive adjacent to and north of 3155 Tallman Drive will be repurposed as the driveway to the property and connect with the reconstructed cul-de-sac. The driveway to 3135 Tallman Drive will similarly connect to the reconstructed cul-de-sac.
- No utility relocations are anticipated required because of these works, and utility impacts and considerations during construction will be revisited in the Detailed Design and Construction phases.
- There is an existing septic tank located west of the buildings of 3155 Tallman Drive. The proposed alignment avoids impacting this underground feature however its location and exact limits shall be verified in the Detailed Design phase.
- The property required is predominantly from 3155 Tallman Drive and the improvements would require approximately 0.4 ha of land.

1.10 Preliminary Cost Estimate

A preliminary, quantity-based cost estimate has been prepared for the proposed realignment of Tallman Drive and is included in **Appendix J**. This is a preliminary-level cost estimate and will be refined following the confirmation of design the during the Detailed Design phase. The realignment is estimated to cost approximately **$0.76M.**

1.11 Impacts, Mitigation Measures, and Commitments to Future Work

Given that the Recommended Plan will be implemented over the long term, mitigation measures and commitments to future work made in this MCEA will be reviewed and confirmed during future design stages, subject to mandates of respective agencies, regulations, guidelines, and other applicable factors at that time. **Table 8** provides a summary of commitment to further work and preliminary mitigation measures.

2 Introduction and Background

2.1 Introduction and Study Area

The Town of Lincoln has completed a Schedule 'B' Municipal Class Environmental Assessment (MCEA) study for improvements to Tallman Drive. The study area is located north of King Street (Regional Road 81), east of Twenty Third Street and west of Twenty Mile Creek. Tallman Drive is a rural roadway that extends from Twenty Third Street to a dead-end approximately 0.8 km easterly (**Figure 2-1**).

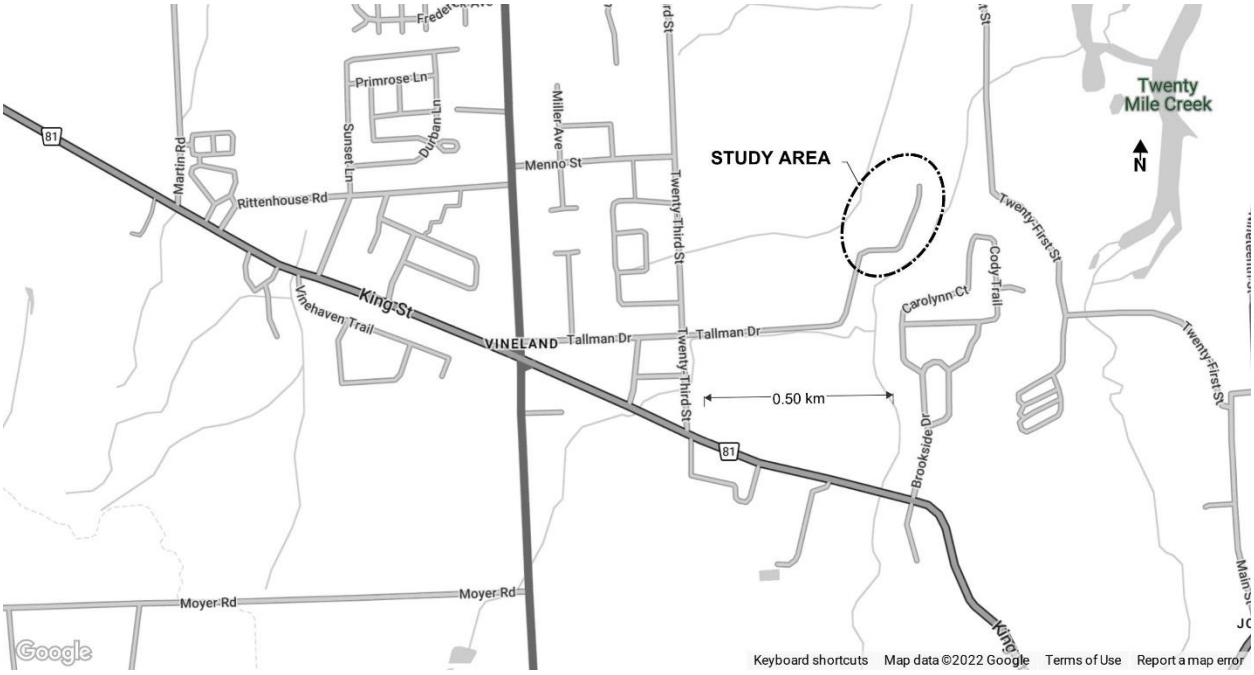

Figure 2-1: Tallman Drive Study Area

The road provides local access to a small group of farms and residences along its length. The road runs adjacent to the 20 Mile Creek tributary ravine for a length of approximately 400 m. The road is currently in a poor condition and suffers from stability and erosion issues. Although there have been previous efforts to stabilize the slope and manage erosion, the problems have persisted, and a long-term solution is needed.

2.2 Environmental Assessment Process

All municipal infrastructure projects are subject to the Ontario Environmental Assessment Act (EA Act). The Class Environmental Assessment is an approved self-assessment process under the EA Act for a specific group or "class" of projects. Projects are considered approved, subject to compliance with an approved Class EA

process. The Municipal Class Environmental Assessment (MCEA), prepared and managed by the Municipal Engineers Association, applies to all municipal infrastructure projects including roads, water, and wastewater.

2.2.1 Municipal Class Environmental Assessment Process

The MCEA outlines a comprehensive planning process and rational approach when considering the environmental and technical advantages and disadvantages of alternatives. It also identifies consultation requirements with agencies, directly affected stakeholders, Aboriginal Communities, and the public throughout the process.

The key principles of successful environmental assessment planning include consultation; consideration of a reasonable range of alternatives; consideration of effects on natural, social, cultural, and economic environments and technical components; systematic evaluation; clear documentation; traceable decision making.

A new amendment to the MCEA was approved by MECP on March 3, 2023, after the Tallman Drive project had commenced. The 2023 amendment has resulted in adjustments to some project classification criteria and outlines a process to transition ongoing MCEA studies to the new process; given the notice of commencement for the Tallman Drive EA had been issued prior to the amendments to the MCEA coming into effect, the Tallman Drive EA can be completed under the class environmental process that was started for the project (MCEA 2000, as amended in 2015).

The Tallman Drive MCEA has been identified as a Schedule ‘B’ and therefore addresses Phases 1 and 2 of the planning process. A Project File Report is required for Schedule ‘B’ projects to document the decision-making process.

Provided that the MCEA planning process is followed, a proponent does not have to apply for formal approval under the *Ontario Environmental Assessment Act*. The MCEA process is shown in **Figure 2-2** and includes:

- Phase 1: Identify the problem or opportunity.
- Phase 2: Identify alternative solutions.
- Phase 3: Examine alternative methods of implementing the preferred solution.
- Phase 4: Prepare and file a Project File Report.
- Phase 5: Proceed to detailed design, construction, and operation.

The classification of projects and activities under the MCEA (2000, as amended in 2015) is as follows:

- Schedule A: Includes normal or emergency operational and maintenance activities, which are limited in scale and have minimal adverse environmental effects. These undertakings are pre-approved, and the proponent can proceed without further assessment and approval.
- Schedule A+: Introduced in 2007, these projects are also pre-approved. The public is to be advised prior to the implementation of the project.
- Schedule B: Includes projects that have the potential for adverse environmental effects. This includes improvements and minor expansions of existing facilities. These projects are approved subject to a screening process which includes consulting with stakeholders who may be directly affected and relevant review agencies.
- Schedule C: Includes the construction of new facilities and major expansions to existing facilities. These undertakings have the potential for significant environmental effects and must proceed under the planning and documentation procedures outlined in the MCEA document.

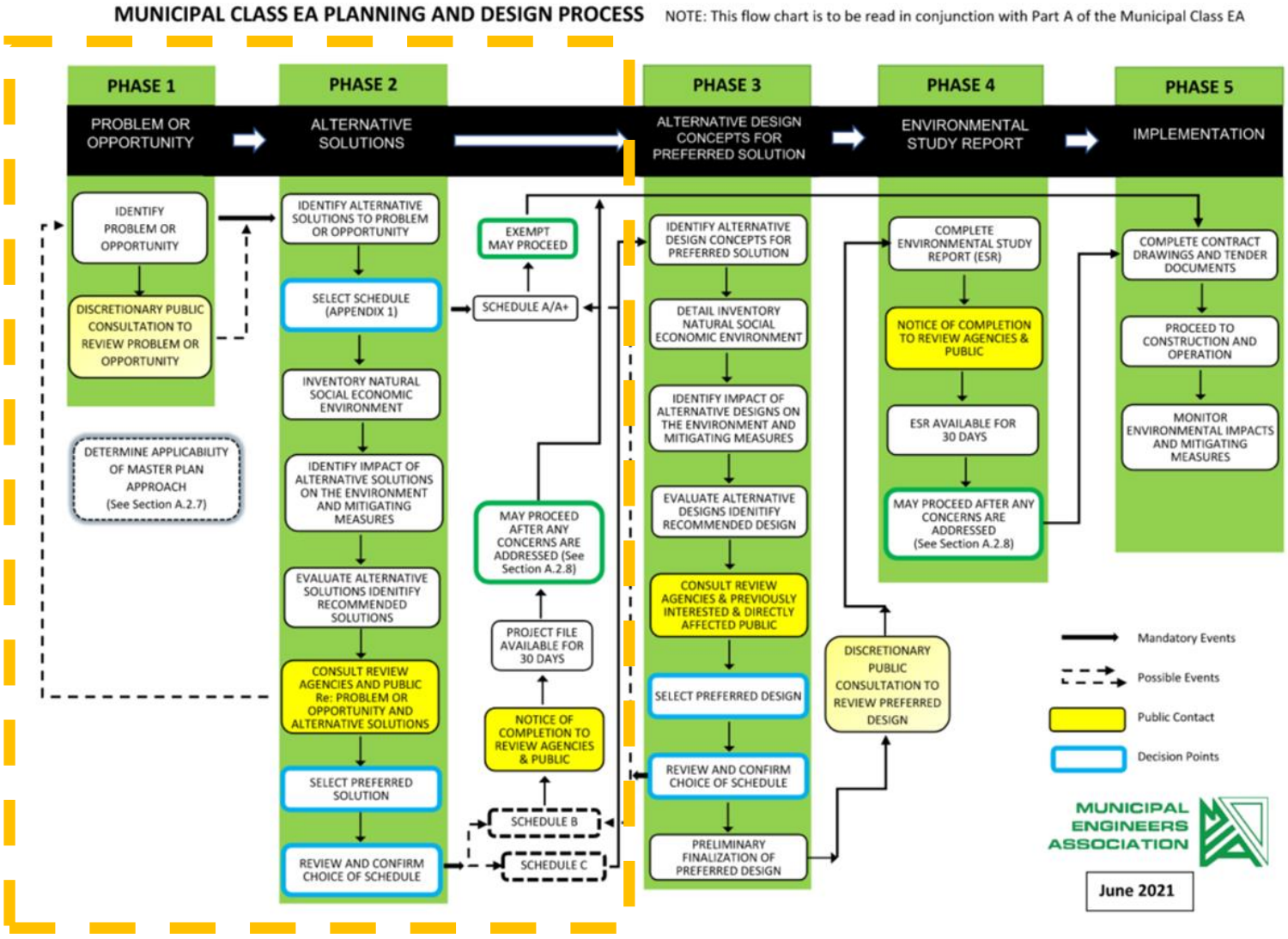

Figure 2-2: Municipal Class EA Planning and Design Process

2.2.2 Project File Report

The Project File Report (PFR) documents the MCEA process to develop the Recommended Plan and the environmentally significant aspects of planning, design, and construction of the proposed works. The PFR is organized into the following sections:

- Section 1 Introduction and Study Process
- Section 2 Need and Justification
- Section 3 Existing Conditions
- Section 4 Alternative Solutions
- Section 5 Recommended Plan
- Section 6 Consultation
- Section 7 Environmental Effects, Mitigation Measures and Commitments to Future Work

This PFR is being made available to regulatory agencies, stakeholders, Indigenous communities, and the public for review. A draft PFR was shared with regulatory agencies and Indigenous Communities prior to it being made available for public review, and the final PFR reflects feedback received during that review.

2.2.3 Notice of Study Completion

A Notice of Study Completion was issued to announce completion of the MCEA study and commencement of the review period. The notice was emailed to agencies, stakeholders, Indigenous Communities, and members of the public on the study mailing list. A hard copy notice was mailed directly to property owners in the study area. Additional details about the notification process are documented in Section 7 of this PRF.

The 30 calendar-day public review period extends from November 16, 2023, to December 16, 2023, and the PFR is available on the Town of Lincoln website at:

https://speakuplincoln.ca/tallman-drive-class-environmental-assessment

During the review period, parties with outstanding comments are encouraged to bring their concerns to the attention of the Town of Lincoln for resolution.

All comments and concerns should be sent directly to Rob Andrea at the Town of Lincoln.

Rob Andrea, Project Manager
Town of Lincoln
905 563 8205
randrea@lincoln.ca

Section 16 Order Request

The MCEA process includes an appeal provision - the Minister of the Environment, Conservation and Parks has the authority and discretion to make an Order under Section 16 of the Environmental Assessment Act. A Section 16 Order may require that the proponent of a project going through a Class Environmental Assessment (Class EA) process:

- Submit an application for approval of the project before they proceed. This is generally referred to as an Individual Environmental Assessment (individual EA).
- Meet further conditions in addition to the conditions in the Class EA. This could include conditions for: further study, monitoring and/or consultation.

The minister can also refer a matter in relation to a section 16(6) Order request to mediation.

Before making an Order, the minister must consider the factors set out in section 16(5) of the Environmental Assessment Act.

If a Section 16 Order request is made, the project proponent cannot proceed with the project until the minister makes a decision on the request. If the minister makes a Section 16 Order, the proponent may only proceed with the project if they follow the conditions in the Order.

Note, Section 16 Order requests were previously known as Part II Order requests.

Reasons for Requesting an Order

A concerned party may ask the minister to make a Section 16(6) Order if:

- they have outstanding concerns that a project going through a Class EA process may have a potential adverse impact on constitutionally protected Aboriginal1 and treaty rights.

[1] The term ‘Aboriginal’ is used here is it refers to the rights recognized and affirmed in Section 35 of the Constitution Act

- they believe that an Order may prevent, mitigate, or remedy this impact.

A Section 16(6) Order request cannot be made to simply delay or stop the planning and implementation of a project that is going through the MCEA process. Prior to making a Section 16(6) Order request, the concerned party should first try to resolve any concerns directly with the project proponent, in this case, the Town of Lincoln.

Timing for an Order Request

During the 30-day public comment period, anyone can review the documentation, submit any comments or concerns to the proponent, and request a Section 16(6) Order

To request a Section 16 Order for a project, on the grounds that an Order may prevent, mitigate, or remedy potential adverse impacts on constitutionally protected, Aboriginal and treaty rights, a concerned party must make the request before the public comment period is complete.

For more information and specific instruction, please visit:
https://www.ontario.ca/page/class-environmental-assessments-section-16-order

2.3 Study Organization and Approach

The study was carried out under the direction of staff at the Town of Lincoln. Internal consultation was conducted with staff across all Town departments to provide appropriate input reflective of the various department mandates and responsibilities.

The consultant team was led by CIMA+ Canada Inc. (CIMA+), who was responsible for the following activities, on behalf of the Town of Lincoln:

- Project Management
- Class EA Process and Consultation
- Roadway Design
- Archaeological Assessment and Cultural Heritage Assessment
    - CIMA+ retained Timmins Martelle Heritage Consultants (TMHC) to undertake the Stage 1 and 2 Archaeological Assessment and Cultural Heritage Assessment
- Natural Heritage Impact Assessment
- Drainage and Stormwater Management Strategy
- Topographic Survey

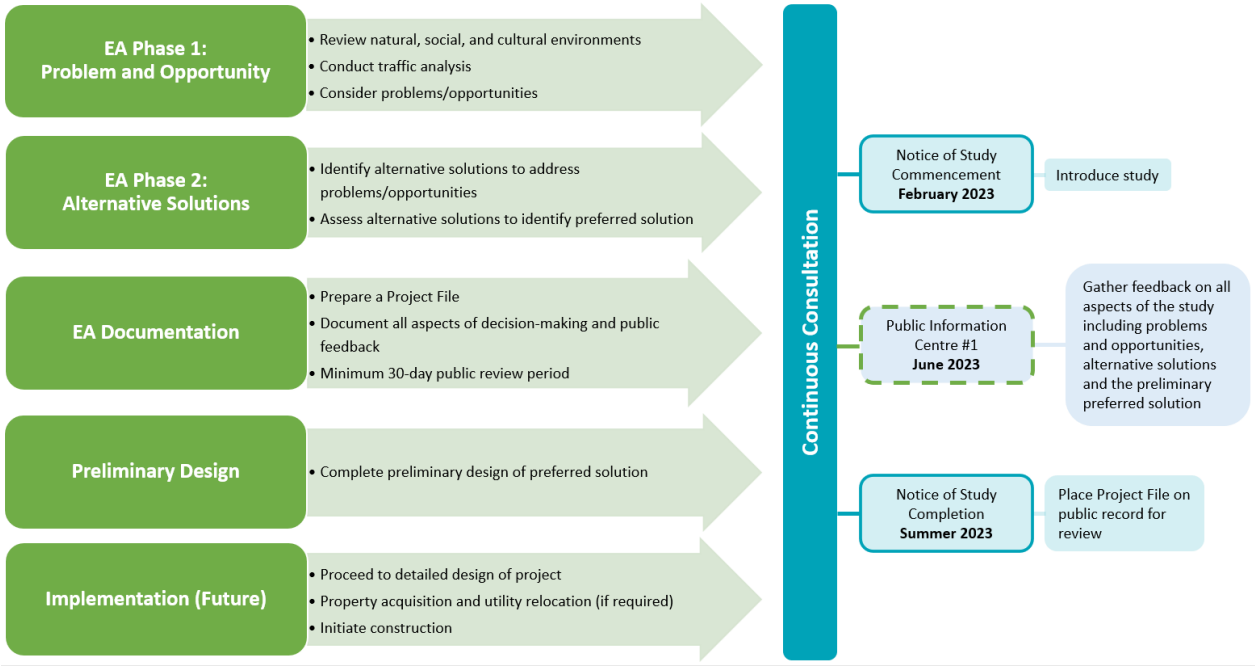

Figure 2-3 Tallman Drive MCEA Study Process

While the overall MCEA process is depicted in **Figure 2-2**, a more simplified and tailored schematic of the study approach is depicted in **Figure 2-3.** The Tallman Drive MCEA formally commenced in February 2023. Phase 2 included one point of public outreach at Public Information Centres (PIC) 1 to present the design work and the proposed design concept. The PFR was prepared through Summer 2023 and, following consultation with agencies and Indigenous Communities, a Notice of Study Completion was issued on November 16, 2023.

3 Need and Justification

3.1 Study Area Needs

Tallman Drive within the study area is in a poor condition towards its eastern end and the current eastern edge of the road is experiencing erosion and instability, due to its location next to the ravine slope. The roadway is known to experience these issues and has been subject to past rehabilitation works and is currently under a truck weight restriction.

Through site inspection of the roadway, indications of potential slope instability were observed through localised areas of guide rail deformation and irregularities in the road surface (**Figure 3-1**). While the existing roadway is currently still fulfilling its function of providing access to surrounding residential/agricultural properties, these indications of potential slope instability highlight that the existing infrastructure issues remain and emphasise a need for a long-term solution to improve roadway safety, maintenance, and access.

Figure 3-1 Site Photo of Tallman Drive - Example of Guide Rail Deformation and the Deteriorating Roadway

3.2 Planning and Policy Context

Improvements considered by this study align with provincial and local planning and policy context, which is summarized in this section. The policy framework guides infrastructure and land use planning and strategic investment decisions to support Town (and provincial) growth and transportation objectives. These policies are in place to

sustain and improve the quality of life of residents while considering the broader municipal interests.

All aspects of the study (e.g., identifying the problems and opportunities, assessing, and evaluating alternative solutions, and developing the preferred solution) were carried out considering the policy framework. This approach was taken to ensure the final recommendations are consistent with the Town's planning and transportation plans / policies.

3.2.1 Provincial Planning and Policy Framework

Provincial Policy Statement (2020)

The Provincial Policy Statement (PPS) (2020) is issued under the Planning Act to support land use planning across the province. As an infrastructure project, the Tallman Drive MCEA study is being undertaken to meet the requirements of the Ontario Environmental Assessment Act. However, the PPS policy direction for using and managing land and infrastructure while protecting the environment and resources and ensuring opportunities for employment and residential development is relevant to the Tallman Drive MCEA study.

Sections of the PPS that apply to the planning of transportation infrastructure include:

Part IV Vision for Ontario's Land Use Planning System - Land development should be optimized to promote efficient use of land, resources, and public investment in infrastructure and public service facilities. These land use patterns promote mixed uses, including residential, employment, recreation, parks, and open space. The supporting transportation infrastructure provides choices and promotes increased use of active transportation and transit before other modes of travel to create livable and healthy communities.

Part V Policies – transportation systems should be safe, energy efficient, facilitate the movement of people and goods, and are appropriate to address projected needs. A multimodal transportation system is to provide connectivity within and amongst the transportation systems.

The Tallman Drive MCEA study is consistent with the PPS as:

- Any improvements will be constructed towards Town standards, including considering the provision of shoulders to standard widths, the road will provide space for pedestrians and cyclists, amongst passing vehicles.
- Making efficient use of infrastructure in that the roadway will be improved.

It is noted that at the time of preparation of the ESR, the Province is updating the PPS to reflect the More Homes Built Faster Act (2022).

A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020)

A Place to Grow: Growth Plan for the Greater Golden Horseshoe ("Growth Plan"), 2020, was prepared and approved under the Places to Grow Act (2005), a legal framework that implements the province's vision for managing growth within the Greater Golden Horseshoe (GGH).The Act enables the provincial government to plan for population growth, economic expansion and the protection of the environment, agricultural lands, and other resources in a coordinated and strategic manner.

A Place to Grow plans for growth and development in a way that supports economic prosperity, protects the environment, and helps communities achieve a high quality of life.

Key sections and policies of the updated Growth Plan that are relevant to Tallman Drive MCEA study are highlighted below:

Section 3.2 Policies for Infrastructure to Support Growth

The Growth Plan provides the framework to guide and prioritize infrastructure planning and investments. The infrastructure framework requires municipalities to undertake an integrated approach to land use planning, infrastructure investments, and environmental protection to support and accommodate forecasted growth.

Section 3.2.2 Transportation – General:

1. Transportation system planning, land use planning, and transportation investment will be coordinated to implement the Growth Plan.
2. The transportation system within the GGH will be planned and managed to:
    a) provide connectivity among transportation modes for moving people and for moving goods.
    b) offer a balance of transportation choices that reduces reliance upon the automobile and promotes transit and active transportation.
    c) be sustainable and reduce greenhouse gas emissions by encouraging the most financially and environmentally appropriate mode for trip-making and supporting the use of zero- and low-emission vehicles.
    d) offer multimodal access to jobs, housing, schools, cultural, and recreational opportunities, and goods and services.

e) accommodate agricultural vehicles and equipment, as appropriate; and

f) provide for the safety of system users.

3. In the design, refurbishment, or reconstruction of the existing and planned street network, a complete streets approach will be adopted that ensures the needs and safety of all road users are considered and appropriately accommodated.
4. Municipalities will develop and implement transportation demand management policies in official plans or other planning documents or programs to:

    a) reduce trip distance and time.

    b) increase the modal share of alternatives to the automobile, which may include setting modal share targets.

    c) prioritize active transportation, transit, and goods movement over single occupant automobiles.

    d) expand infrastructure to support active transportation; and

    e) consider the needs of major trip generators.

The Tallman Drive MCEA study investigated improvements that are consistent with the direction the Growth Plan to support multi-modal uses through provision of safe and comfortable facilities for pedestrians, cyclists, and other active transportation uses, increase efficiency, and provide future flexibility in the transportation network.

Greenbelt Plan (2017)

The Greenbelt Plan was prepared and approved under the Greenbelt Act, 2005, and identifies where urbanization should not occur to provide permanent protection to the agricultural land base and the ecological and hydrological features, areas and functions occurring in the Greater Golden Horseshoe. Tallman Drive is within the Greenbelt Plan's "Protected Countryside".

Sections and policies of the updated Growth Plan that are relevant to Tallman Drive MCEA study are highlighted below:

Section 3.2.2 Natural Heritage System Policies

1. New development or site alteration in the Natural Heritage System (as permitted by the policies of this Plan) shall demonstrate that:
    a) There will be no negative impacts on key natural heritage features or key hydrologic features or their functions.

b) Connectivity along the system and between key natural heritage features and key hydrologic features located within 240 metres of each other will be maintained or, where possible, enhanced for the movement of native plants and animals across the landscape.
c) The removal of other natural features not identified as key natural heritage features and key hydrologic features should be avoided. Such features should be incorporated into the planning and design of the proposed use wherever possible.
d) Except for uses described in and governed by the policies of sections 4.1.2 and 4.3.2,
    i. The disturbed area, including any buildings and structures, of the total developable area will not exceed 25 per cent (40 per cent for golf courses); and
    ii. The impervious surface of the total developable area will not exceed 10 per cent; and

Section 4.2.1 General Infrastructure Policies

1. All existing, expanded, or new infrastructure subject to and approved under the Canadian Environmental Assessment Act, the Environmental Assessment Act, the Planning Act, the Aggregate Resources Act, or the Telecommunications Act or by the National or Ontario Energy Boards, or which receives a similar environmental approval, is permitted within the Protected Countryside, subject to the policies of this section and provided it meets one of the following two objectives:
    a) It supports agriculture, recreation and tourism, Towns/Villages and Hamlets, resource use or the rural economic activity that exists and is permitted within the Greenbelt; or
    b) It serves the significant growth and economic development expected in southern Ontario beyond the Greenbelt by providing for the appropriate infrastructure connections among urban centres and between these centres and Ontario's borders.
2. The location and construction of infrastructure and expansions, extensions, operations, and maintenance of infrastructure in the Protected Countryside are subject to the following:
    a) Planning, design, and construction practices shall minimize, wherever possible, the amount of the Greenbelt, and particularly the Natural

Heritage System and Water Resource System, traversed and/or occupied by such infrastructure.

b) Planning, design, and construction practices shall minimize, wherever possible, the negative impacts on and disturbance of the existing landscape, including, but not limited to, impacts caused by light intrusion, noise, and road salt.
c) Where practicable, existing capacity and co-ordination with different infrastructure services shall be optimized so that the rural and existing character of the Protected Countryside and the overall hierarchy of areas where growth will be accommodated in the GGH established by the Greenbelt Plan and the Growth Plan are supported and reinforced.
d) New or expanding infrastructure shall avoid key natural heritage features, key hydrologic features, or key hydrologic areas unless need has been demonstrated and it has been established that there is no reasonable alternative.
e) Where infrastructure does cross the Natural Heritage System or intrude into or result in the loss of a key natural heritage feature, key hydrologic feature, or key hydrologic areas, including related landform features, planning, design, and construction practices shall minimize negative impacts on and disturbance of the features or their related functions and, where reasonable, maintain or improve connectivity.
f) New or expanding infrastructure shall avoid specialty crop areas and other prime agricultural areas in that order of priority, unless need has been demonstrated and it has been established that there is no reasonable alternative.
g) Where infrastructure crosses prime agricultural areas, including specialty crop areas, an agricultural impact assessment or equivalent analysis as part of an environmental assessment shall be undertaken; and
h) New waste disposal sites and facilities, and organic soil conditioning sites are prohibited in key natural heritage features, key hydrologic features, and their associated vegetation protection zones.

The Tallman Drive MCEA study is consistent with the policies in the Greenbelt Plan as it minimises potential impacts to the Natural Heritage Features present. Further mitigation measures are outlined in Section 8.

Niagara Escarpment Plan (2017)

The study area is outside of the Niagara Escarpment Plan area in the Niagara Escarpment Plan (2017).

3.2.2 Niagara Regional Official Plan (2022)

The 2022 Niagara Official Plan is a long-range land use planning document that sets out what we protect while managing where and how the region will accommodate this growth.

The Tallman Drive MCEA study is consistent with the Regional Official Plan founding principles as it recognizes the important role the natural environment system plays in mitigating the impacts of climate change by protecting and enhancing natural features.

3.2.3 Town of Lincoln Official Plan (2018)

The Official Plan sets out the long-term vision for the future. The Official Plan contains goals, objectives, and policies to guide future land use, physical development, growth and change within the Town. The Tallman Drive MCEA study is consistent with the Official Plan founding principles in the following ways:

- Making efficient use of its infrastructure by focusing on a compact, mixed-use, walkable, bikeable, and connected community – considerations provide an opportunity for pedestrians and cyclist to use the road safely.
- Ensure that natural resources are protected and used in a manner that has minimal impacts on the environment and character of the Town – the study looks at minimizing impacts to the existing agricultural lands/natural heritage features while still providing a safe local road function.
- Develop complete streets which provides the infrastructure support for complete communities where neighbourhoods are well connected to each other, commercial areas, employment areas, and community facilities with a safe and efficient transportation network that accommodates all users on all roads – the intent is to create a local road which allows for multi-modal use.

There are numerous policies within the Official Plan that provide direct guidance to the Tallman Drive MCEA and while the Official Plan should be considered in its entirety, selected policies that are directly relevant to the Tallman Drive MCEA study are highlighted below:

Section 2.4 Natural Environment Area - The purpose of the Natural Environment designation is to improve, protect and enhance the ecological integrity of "The Core Natural Heritage System" as identified by the Region of Niagara and the Greenbelt Natural Heritage and Water Resources Systems as established in the Greenbelt Plan (2005).

Section 6.1.4 (iii) Local Roads - Local roads are designated to carry low vehicle volumes, primarily used to gain direct access to abutting properties, and complete the road network within the Town. **As noted, Tallman Drive is classified as a local road.** Local roads are designed to ensure the road design supports active transportation, safety for all road users (including farm operators with large, slow moving farm vehicles/machinery) and complements adjacent land uses.

As depicted in **Figures 3-1 and 3-2**, the study area is designated as Natural Environment Area – Greenbelt Protected Area in Schedule A1 (Land Use Plan) and Greenbelt Natural Heritage System in Schedule E5 in the Town's Official Plan.

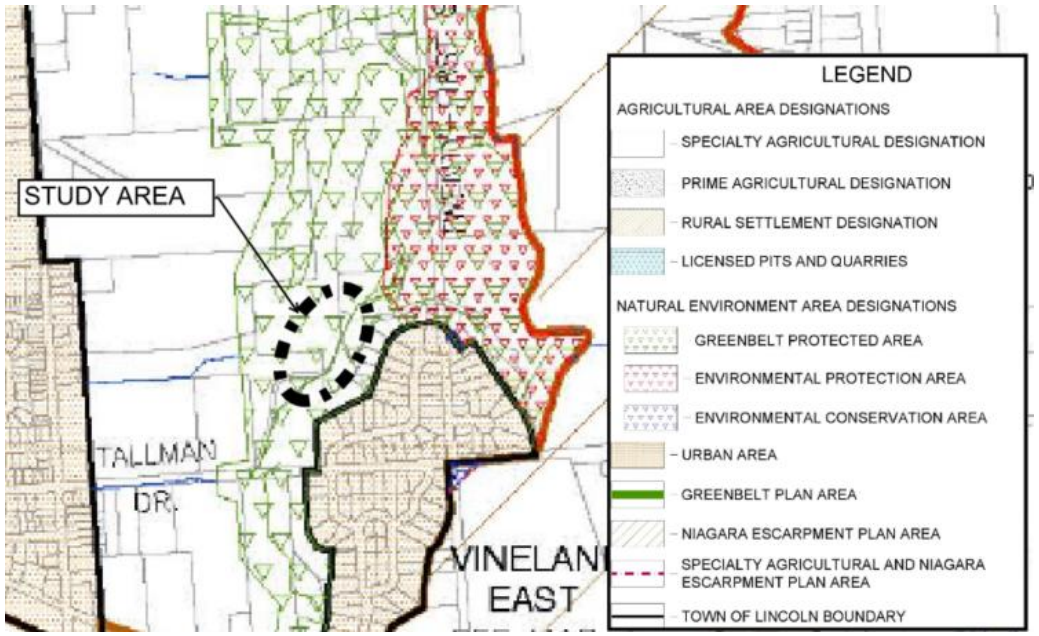

Figure 3-2 Town of Lincoln Official Plan - Schedule A1 Land Use - Excerpt

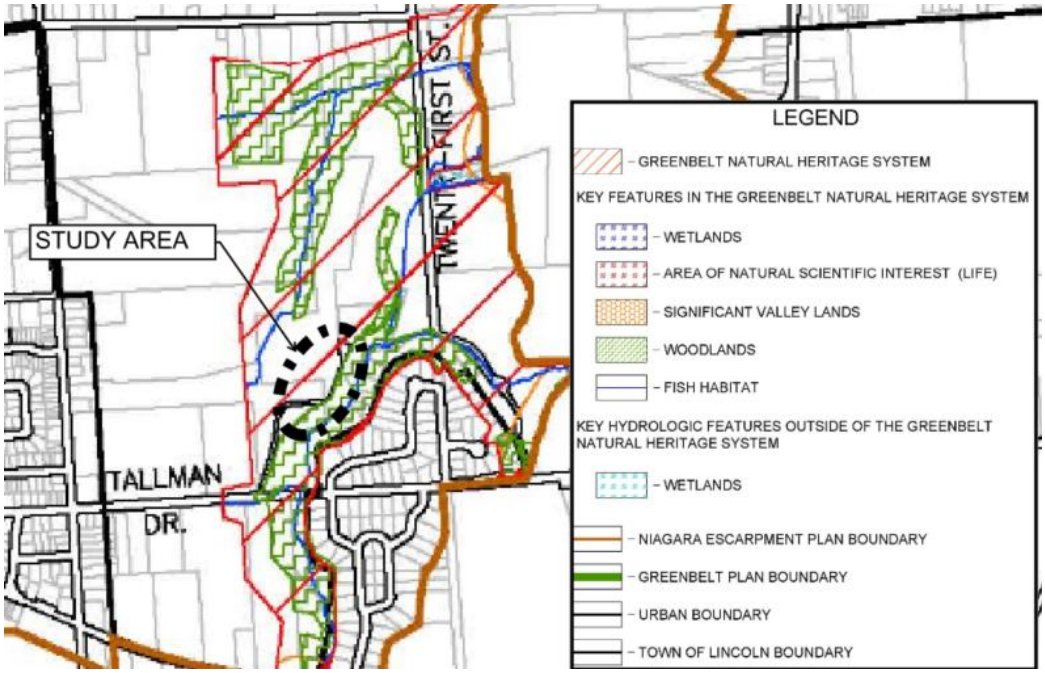

Figure 3-3 Town of Lincoln Official Plan - Schedule E5 – Greenbelt Protected Area Excerpt

4 Existing Conditions

4.1 Socio-Economic Environment

4.1.1 Existing Land Use

Existing land use along Tallman Drive is a mix of residential, agricultural, and natural features associated with Twenty Mile Creek.

As discussed in Section 3 and depicted in Figure 3-1, the study area is designated as Natural Environment Area – Greenbelt Protected Area in Schedule A1 (Land Use Plan) and Greenbelt Natural Heritage System in Schedule E5 in the Town's Official Plan.

4.2 Cultural Environment

4.2.1 Built Cultural Heritage

A Cultural Heritage Report: Existing Conditions and Preliminary Impact Assessment (CHRECPIA) was conducted by TMHC Inc. (TMHC) as part of this study. The full report is included in **Appendix A** and summarized below.

The purpose of the CHRECPIA is to describe the existing conditions of the study area, present an inventory of above-ground built heritage resources and cultural heritage landscapes, assess potential impacts of the proposed undertaking, and propose appropriate mitigation measures and recommendations to minimize and/or avoid negative impacts on identified cultural heritage resources.

The cultural heritage screening determined that of the 14 properties, structures, and landscapes reviewed, 10 were found to have existing built heritage resources/cultural heritage landscapes or the potential for built heritage resources/cultural heritage landscapes. Of the 10 potential properties reviewed, one BHR was identified as having CHVI and two CHLs were determined to have potential CHVI based on professional judgement and the preliminary application of *OHA* O.Reg. 9/06 criteria.

Key findings are summarized as follows:

- One property is listed on the Town of Lincoln Heritage Register.
- There are no properties in or adjacent to the Study Area that are designated under Part IV of the Ontario Heritage Act.
- The Study Area is outside of the UNESCO Niagara Escarpment Biosphere Reserve.

- Of the 14 properties, structures, and landscape features in the Study Area, 10 were found to have existing built heritage resources/cultural heritage landscapes or the potential for built heritage resources/cultural heritage landscapes.

The potential impacts of the proposed undertaking and mitigation measures are discussed in Section 8 of this report.

4.2.2 Archaeology

A Stage 1 Archaeological Assessment was conducted as part of the study. The assessment was carried out by TMHC Inc. (TMHC) in accordance with the Ontario Heritage Act (1990, as amended in 2018) and the 2011 Standards and Guidelines for Consultant Archaeologists, administered by the Ministry of Heritage, Sport, Tourism, and Culture Industries. The full report is included in **Appendix B** and summarized below.

The purpose of the Stage 1 Archaeological Assessment was to is to determine if there are known cultural resources within the proposed Project Area, or potential for such resources to exist. Subsequently, it can act as a planning tool by identifying areas of concern that, where possible, could be avoided to minimize environmental impact. It is also used to determine the need for a Stage 2 field assessment involving the search for archaeological sites.

Based on the assessment, the following recommendations were made:

- Portions of the study area along and directly adjacent to Tallman Road were identified as extensively disturbed (0.3 ha; 28.3%) and do not require further assessment.
- The eastern portion of the study area was identified as steeply sloped (0.15ha; 14.1%) and does not require further assessment.
- The portions of the study area (as seen in **Figure 4-1**) that retain archaeological potential require Stage 2 archaeological assessment prior to ground disturbing activities (0.61 ha, 57.6%). Given the unploughable conditions, the Stage 2 assessment should consist of a test pit survey at 5 m intervals.
- If the overall project area is changed to incorporate lands not previously assessed, further assessment will be required.

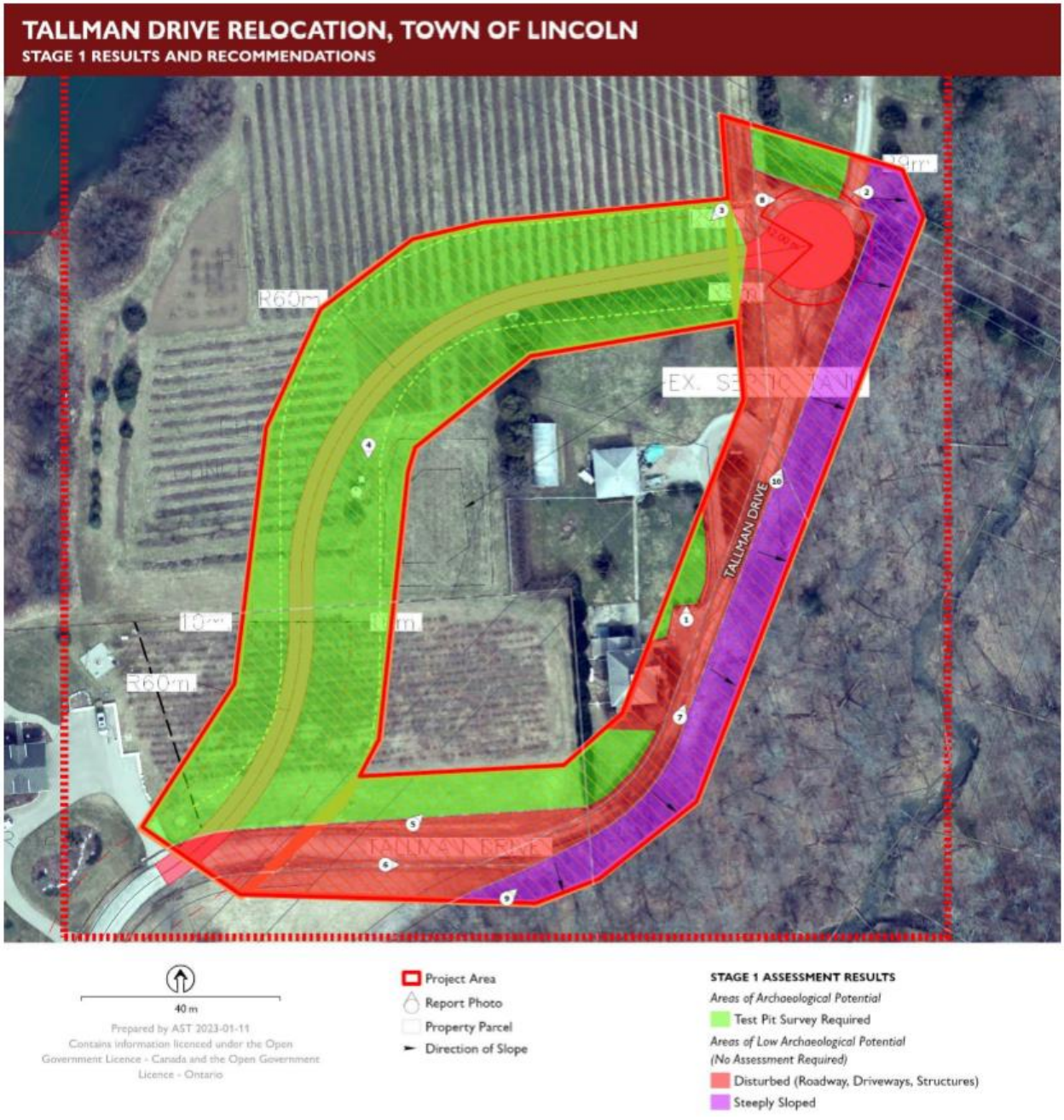

Figure 4-1: Stage 1 Archeological Results

A Stage 2 Archeological Assessment was conducted in accordance with the recommendations made in the Stage 1 and provisions of the Environmental Assessment Act and Provincial Policy Statement. The work was also in keeping with the Niagara Region Archaeological Management Plan (ASI and LHC 2021:36), a guide for assessing potential archaeological impacts in land use planning in the Niagara Region. The purpose of the assessment was to determine whether there were archaeological

resources present within the project area. The full report is included in **Appendix C** and summarized below.

The assessment was completed by test pit survey at a 5 m (0.47 ha; 85%) and 10 m (0.01 ha; 2%) interval, which resulted in the identification of one archaeological location (Location 1) consisting of three nondiagnostic Indigenous artifacts. Based on the assessment, the following recommendations were made:

- Location 1 does not meet provincial criteria for further archaeological assessment.
- The extreme southwest portion of the project area consists of built features that were previously disturbed and deemed of low archaeological potential (0.01 ha; 2%). The remainder of the project area (0.06 ha; 11%) was previously assessed during the Stage 1 archaeological assessment and was not recommended for further work.
- All areas within the study area have now been assessed, and no further archaeological assessment is required within the study area. If plans change to include impacts to lands outside areas previously cleared of archaeological concern, additional archaeological assessment may be required.

It is noted that the Stage 2 Archaeological Assessment Report was circulated to all Indigenous Communities with an invitation to review and provide comment. Indigenous Community outreach is discussed in more detail in Section 7.4. This report was been sent to the Ministry of Citizenship and Multiculturalism on September 18, 2024 and an expedited review has been requested.

4.3 Natural Environment

A Natural Heritage Assessment (NHA) was conducted by CIMA+ to identify and describe natural heritage features which may be present on or adjacent to the Site. This NHA identifies known or potential natural heritage features and provides guidance on how to minimize or avoid negative impacts that could result from the proposed road repair work. The full report is included in **Appendix D** and summarized below.

4.3.1 Background Data Collection

The following sources were consulted as part of the desktop review to aid in the identification of natural heritage features recorded within the vicinity of the Site:

- Satellite imaging and property, zoning, and land use information (Regional Municipality of Niagara).

- Geographic information from Land Information Ontario (LIO, 2021).
- The Ministry of Natural Resources and Forestry's (MNRF) Natural Heritage Information Center (NHIC) Make a Map for square #17PH3179, #17PH3279, #17PH3178, #17PH3278 – search was completed April 2023 (NHIC, 2023).
- Ontario Breeding Birds Atlas squares #17PH37 (Atlas 2 – 2001-2005).
- Ontario Reptile and Amphibian Atlas square #17PH37 (Ontario Nature, 2022)
- Atlas of the Mammals of Ontario (Dobbyn, 1994).
- iNaturalist (2023)
- Fisheries and Oceans (DFO) Aquatic Species at Risk Mapping (DFO, 2022)
- Aerial/Satellite Imagery (ERIS, 2021)
- Niagara Peninsula Conservation Authority (NPCA, 2022)
- Official Plan of the Town of Lincoln (2018)

A review of information from the NHIC, provincial atlases, satellite and drone images has identified the following natural heritage features as being present within 120 m from the Site:

- ANSI, Earth Science
- Woodlands
- Watercourses (fish habitat)
- Potential Species at Risk and/or their habitats

There are no wetlands present on site. A provincially significant wetland, Jordan Harbour Marsh Wetland Complex (PSW), is located 380 m east of Site. The nearest woodlands are located within the site's adjacent lands but are not deemed to be significant on available mapping.

4.3.2 Designated Natural Areas

Greenbelt Natural Heritage System

The study area and its adjacent lands are situated within a Greenbelt Protected Area as indicated in **Section 3**.

Provincially Significant Wetlands

There are no Provincially Significant Wetlands (PSW) within the study area. The closest PSW is Jordan Harbour Marsh Wetland Complex PSW and is approximately 380 m east of the study area.

Area of Natural and Scientific Interest

There are no Area of Natural and Scientific Interest (ANSI) within the study area. The Twenty Mile Creek Drowned River Mouth (Earth Science ANSI) is 100 m from the study area and the Beamsville Escarpment (Life Science ANSI) is approximately 2.5 km west of the study area.

4.3.3 Fish and Fish Habitat

The only potential fish habitat located near the study area include the unnamed tributaries northwest and southeast of the site (**Figure 4-2**). Fish community information for these unnamed features were not readily available on the Aquatic Resource Area (ARA) databases on LIO. Information was available for Twenty Mile Creek, located upstream of both features and approximately 650 m east of the project area. LIO and iNaturalist observations identified 27 species in the reach of Twenty Mile Creek near the study area.

All species except the lake sturgeon are common warm to cold water fish. This list contains 3 sportfish (brown trout, northern pike, and largemouth bass), 10 forage fish (central mudminnow, common shiner, golden shiner, spottail shiner, sand shiner, bluntnose minnow, fathead minnow, white sucker, rainbow darter, and johnny darter), and 6 pan fish (rock bass, green sunfish, pumpkinseed, bluegill, white crappie, and black crappie).

The Department of Fisheries and Oceans Canada Aquatic Species at Risk Map identified 3 species at risk as potentially occurring in the area, one fish (grass pickerel) and 2 freshwater mussels (Lilliput, mapleleaf). The critical habitat of lilliput was also identified. Grass pickerel is listed as a species of special concern both federally and in Ontario (Table 3). Lilliput (*Toxolasma parvum*) is listed as federally endangered under Schedule 1 of the *Species at Risk Act*, and provincially threatened in Ontario. Mapleleaf (*Quadrula quadrula*) is a species of special concern both federally and in Ontario.

Additionally, iNaturalist observations identified the lake sturgeon (Great Lakes-Upper St. Lawrence population) as occurring in the area. This species is not federally listed but is considered threatened in Ontario.

There is an unnamed tributary west of the pond that flows northward through a steep ravine. Based on the Fall survey observations, the channel had an unwetted width of 0.5 m – 1.5 m. The length of the channel adjacent to the pond contained steady flowing water with depths between 5 cm and 20 cm. No fish were observed within this feature; however, no fish sampling was completed during the 2022 field investigations. The

substrate consisted of a mix of fines (80%), gravel and cobbles (20%). No submergent or emergent aquatic vegetation was present within the channel. The dominant riparian vegetation consisted of wild grape, sumac, wildflowers, grasses, and honeysuckle. The vegetation adjacent the tributary was thick and overgrown and provided abundant shade cover.

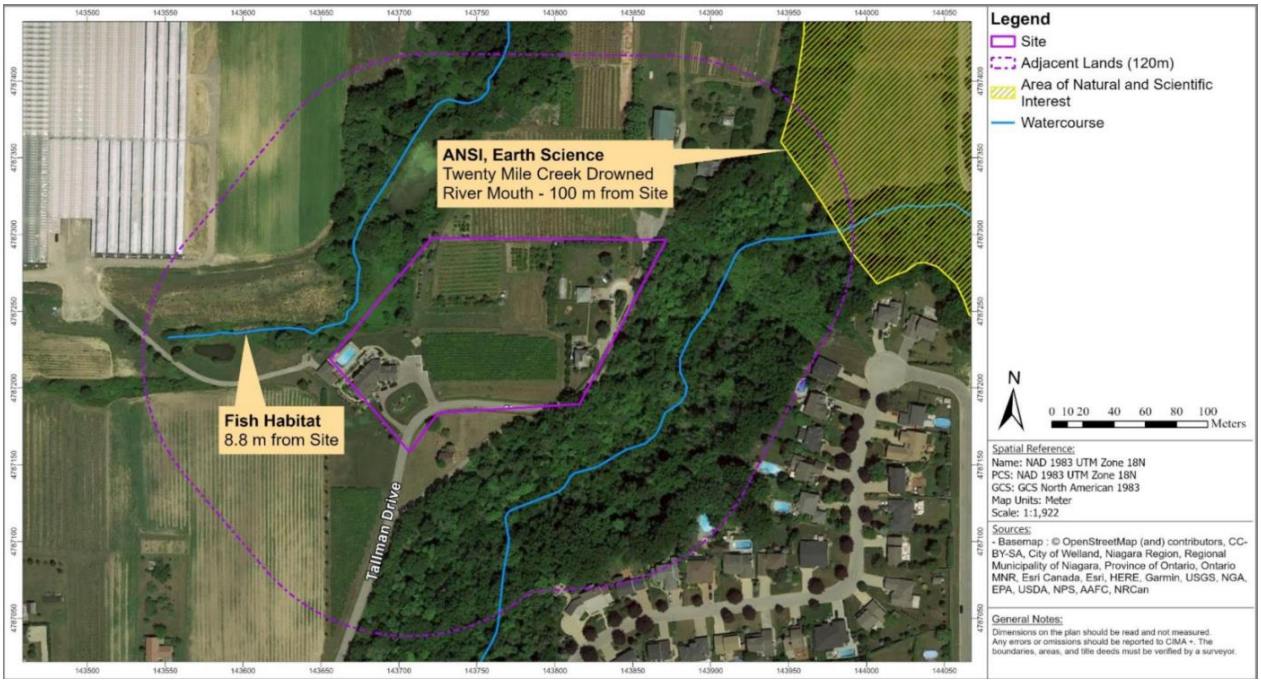

Figure 4-2: Natural Heritage Constraints on Site and Adjacent Lands (120 m)

4.3.4 Vegetation Communities

The study area is dominated by a mix of residential, active agricultural fields, graminoid meadow, and deciduous forested lands. There are three residential properties within the study area and adjacent lands, all containing manicured lawn and planted trees and shrubs. The active agriculture is comprised of vineyards to the southwest, row crop in the northwest, and pick-your-own berry fields in the centre of the Site. Planted pussy willow and corkscrew willow deciduous plantations are situated in the centre of the study area, separated by a MEF – Forb Meadow ecosite comprised mainly of goldenrod and aster species. Another low-shrub deciduous plantation borders the southwest side of Tallman Drive. A deciduous riparian forest is situated in the northwest parcel which straddles a narrow unnamed tributary that flows northwards. This feature slopes into a steep ravine comprised of black walnut, Norway maple, Manitoba maple, and ash, with Staghorn sumac along the edges. There is a pond east of the riparian forest with a manicured grass pathway surrounding it. A FODM9 - Fresh - Moist Oak - Maple -

Hickory Deciduous Forest borders the eastern edge Tallman Drive and runs along a steep ravine containing a tributary of Twenty Mile Creek. This forest is comprised red oak, shagbark hickory, Norway maple, Manitoba maple, American beech, black cherry, and black walnut.

4.3.5 General Wildlife

During the site visit five bird species were observed and/or heard. These included American robin, blue jay, ring-billed gull, song sparrow, and eastern kingbird. All species heard on the study area were common to rural areas and are expected to be present within these habitat features all with secure habitats in Ontario. It should be noted that the site visit was completed outside the breeding bird active season and therefore should be considered a full representation of breeding bird presence on or adjacent the site. Trees and shrubs within the study area likely provide nesting habitat for these and other bird species. One eastern gray squirrel was observed during the survey. No amphibians or reptiles were observed during the site visit; however, the open aquatic pond, and the tributary of Twenty Mile Creek likely provides suitable habitat for herptile basking, foraging and/or overwintering.

4.3.6 Species at Risk

No Species at Risk (SAR) were observed during the 2022 site investigation. Based on review of background SAR data, and habitat available on site, there is potential for five SAR to occur on Site and be impacted by the preferred alternative: Rusty-patched Bumble Bee, Gypsy Cuckoo Bumble Bee, Nine-spotted Lady Beetle, Transverse Lady Beetle, and Gray Ratsnake.

It is anticipated that with the implementation of standard wildlife mitigation, as recommended in **Section 8**, impacts to wildlife, SAR, and their associated habitat because of the project can be avoided.

4.4 Drainage and Stormwater Management

The Drainage and Stormwater Management (SWM) assessment was completed by CIMA+ and identifies the relevant characteristics of the existing and proposed drainage systems, documents the hydrologic assessments to determine the flow related to stormwater management design, reconfiguration of existing drainage features as well as design of new drainage features to accommodate the proposed improvements. The full report is included in **Appendix E** and summarized below.

The entire existing Tallman Drive has rural road section, roadway runoff drains to ditches on both side of the road as well as overland and ultimately discharge into ravine on the east side of the road. There is no existing stormwater management system in to address the runoff quality and quantity control place except the existing drainage ditches. Existing conditions drainage mosaics of the study area is shown in **Figure 4-3** and indicates the following:

- Runoff from Catchment 100 drains northwards through the roadside ditch located on the west side of Tallman Drive. Further north, runoff of Catchment 105 combines with the runoff of Catchment 110 and the combined flow drains via an existing 300mm diameter CSP culvert into 20 Mile Creek tributary ravine located on the south of the culvert. The Total drainage area of these two catchments is 1.20 ha.
- Runoff from Catchment 105 (drainage area 0.11 ha) and 115 (drainage area 0.07 ha) drains through the east side ditch of Tallman Drive and ultimately drains to 20 Mile Creek tributary ravine to the study area.
- Storm runoff from Catchment 125 (drainage area 0.47 ha) and 130 (drainage area 0.21 ha) drains overland in east direction towards the 20 Mile Creek tributary ravine.
- Storm runoff from catchment 120 (drainage area 0.34 ha) drains overland in north-west direction which outlets to the valley to the west side of the study area.

Figure 4-3: Existing Drainage Conditions

In terms of stormwater management, minor storm runoff from Tallman Drive is conveyed by drainage ditches which ultimately discharge into 20 Mile Creek tributary ravine. There are no runoff quality and quantity control measures currently in place.

4.5 Source Water Protection

The Tallman Drive study area is in the Niagara Peninsula Source Protection Area (NPSPA). The Niagara Peninsula Protection Authority plays the role of the lead source protection authority.

In the Niagara region, provision of water & wastewater services is a shared responsibility between the two tiers of municipal government. Niagara Region is responsible for treatment of wastewater generated by the municipalities and for the treatment and movement of water to the local municipalities.

The Town of Lincoln is responsible for the construction, maintenance and operation of the water and wastewater distribution system to its residents. Tallman Drive study area is in a rural area and not fully serviced by municipal water, sanitary and storm sewer.

The Ministry of the Environment, Conservation and Parks Source Protection Information Atlas was queried to identify any potential sensitivities of the Tallman Drive study area with respect to source water protection and potential for drinking water threats. The results are summarized below in **Table 1**. Please refer to **Section 8** for a review of the Source Protection Plan prescribed threats and how these have been considered with respect to Tallman Drive.

4.6 Problem or Opportunity Statement

Tallman Road is currently in a poor condition and suffers from stability and erosion issues. Although there have been previous efforts to stabilize the slope and manage erosion, the problems have persisted, and a long-term solution is needed.

Through the MCEA study process, there is an opportunity to formally gather public feedback and develop and assess a range of potential solutions, including road realignment. At the conclusion of the study, recommendations will be made to Council for implementation.

Table 1: Source Protection Information Summary

Vulnerable Areas	Within Study Area?
Wellhead Protection Area	No
Wellhead Protection Area E (GUDI E)	No
Intake Protection Zone	No
Issue Contributing Area	No
Significant Groundwater Recharge Area	No
Highly Vulnerable Aquifer	Yes, Score is 6
Event Based Area	No
Wellhead Protection Area Q1	No
Wellhead Protection Area Q2	No
Intake Protection Zone Q	No

5 Alternative Solutions

The Class Environmental Assessment for Municipal Road Projects, Schedule 'B' requires that alternative solutions be considered to address the problem(s) identified in the study area. This is Phase 2 of the Municipal Class EA process**.**

Sections 2 and 3 of this PFR sets out the problems and opportunities by providing the planning/policy context and the analysis of existing and future conditions to identify needs and overall project opportunities. **Section 3.6** provides a clear problem and opportunity statement to guide the study.

Alternative solutions represent different potential means of addressing the needs and opportunities – generally as functionally different solutions. The alternative solutions are assessed against their ability to address the problems and opportunities reasonably, and in consideration of the constraints identified in the early stages of the study to identify a preferred solution(s).

5.1 Alternative Solutions for Tallman Drive

5.1.1 Do Nothing

Do Nothing" is considered the status quo, maintaining the existing transportation network as is with no improvements. This Alternative is provided for comparison purposes only as it does not represent a viable long-term option since maintaining the status quo would not address any of the identified needs and opportunities and is not consistent with Provincial and Town planning policies.

5.1.2 Solution 1 – Reconstruct/Rehabilitate Existing Road

This alternative reconstructs and rehabilitates the existing road to mitigate existing stability and erosion issues. Under this solution, the roadway would be widened as the existing roadway is narrow and does not conform to current design standards. However, a 'pinch-point' towards the southern limits of the study area results in a limit to this widening. The existing road aligns between the house of 3155 Tallman Drive to the west, which has cultural heritage value as described in Section 4.2, and the Twenty Mile Creek tributary ravine to the east, identified as a significant natural heritage feature per Section 4.3. Therefore, the widening was limited to a 6 m width (less than the 7m Town of Lincoln standard) and a 'best-fit' alignment had to be identified that considered minimising impacts to the house and ravine.

To identify the 'best-fit' alignment, a high-level screening of potential alternatives was conducted and is summarised in **Appendix F**.

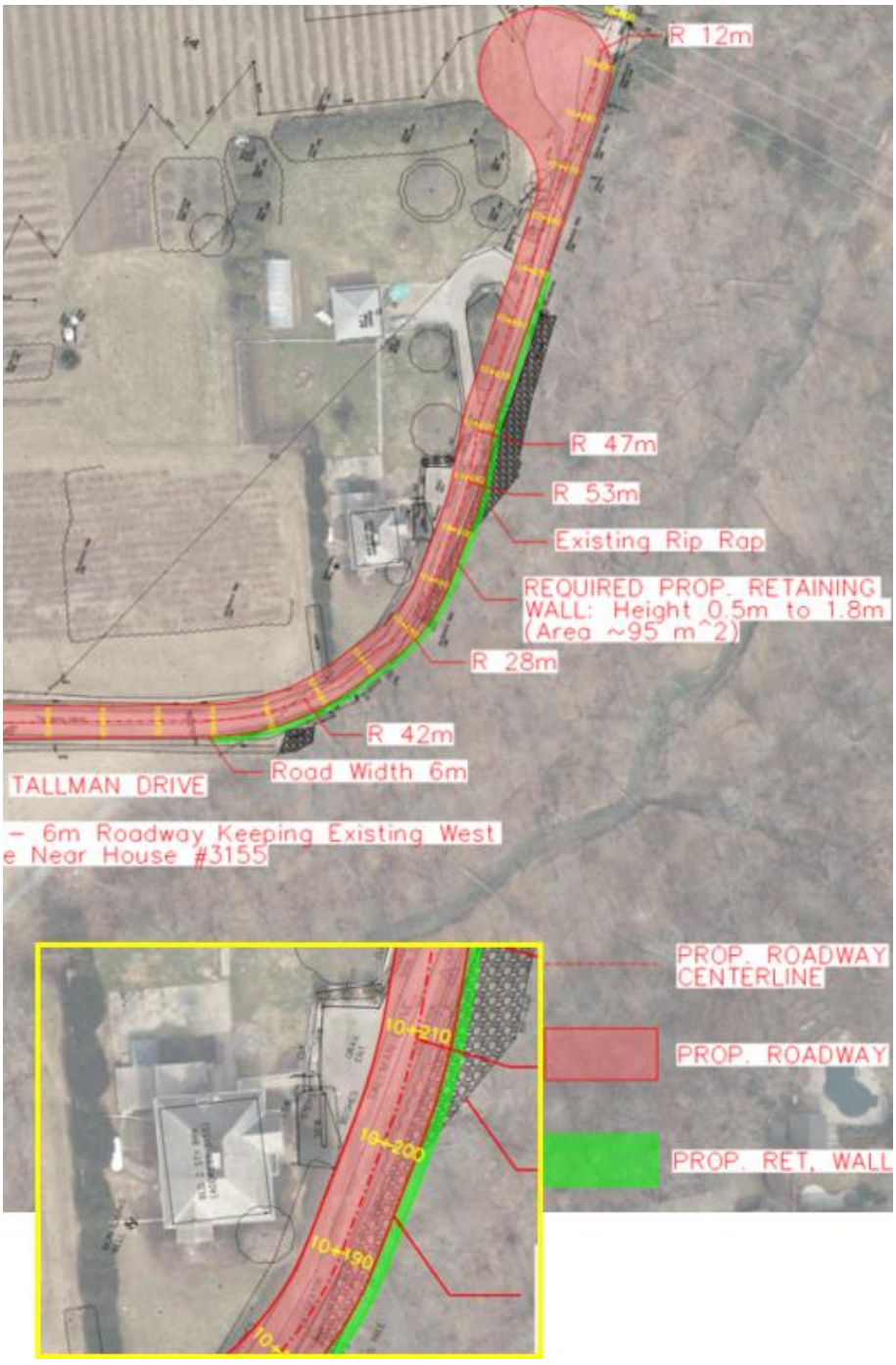

Figure 5-1 Solution #1 - Reconstruct / Rehabilitate Existing Road

Overall, the trade-off of mitigating impacts to the house requires a retaining wall of approximately 0.5 m to 1.8 m around the southern curve of the study limits. The alignment can return towards existing heading north of the house to reduce the extent of the retaining wall, however a wall of approximately 110 m would be required to mitigate impacts into the ravine.

In terms of Rights-of-Way (ROW) (i.e., property required), like the roadway width, a ROW narrower than Town standards would be sought to help limit impacts. In consultation with the Town, a reduced-width ROW of 10 m could be used with this solution. Solution #1 and the above attributes are illustrated in the **Figure 5-2.**

5.1.3 Solution 2 – Road realignment

This alternative involves realigning Tallman Drive by constructing a length of new roadway west of the existing road and reconstructing the existing turnaround in approximately the existing location. Therefore, the road is moved away from the ravine and its stability / erosion issues. The existing road would be decommissioned and/or act as a driveway for 3155 Tallman Drive to the reconstructed cul-de-sac. The other property serviced by the roadway, 3135 Tallman Drive, will access onto the reconstructed cul-de-sac, as done with the existing driveway. The new road will enable a cross-section that will be constructed to Town Standards. Due to site constraints within the study area, a specific corridor was available for a potential realignment of Tallman Drive, and to mitigate the property and natural environment impacts, the alignment required a design exception in curvature, and this was selected following the TAC 2017 Design Exception process. In summary, per the Town standards, the minimum radius is 60 m for a local road (in accordance with TAC 2017 guidelines (Table 3.2.3.), however several benefits were been identified when using a minimum 40 m radius for the realignment of Tallman Drive. The design exception and development of the alignment of Solution 2 is further detailed in the Design Criteria included in **Appendix G**

5.2 Evaluation of Alternative Solutions

5.2.1 Evaluation Criteria

The alternative solutions were assessed in their ability to reasonably address the needs and opportunities of the study. Criteria were developed to guide the assessment process so that transportation planning, technical, and environmental (socio-economic, cultural, natural environment) conditions were factored into the assessment.

The evaluation criteria is listed in **Table 2** and a summary evaluation table is included in **Figure 5-2**. The detailed assessment table is shown in **Appendix G**. Draft criteria were presented to the public at PIC #1, for review and any comment.

Table 2: Evaluation Criteria

Category	Consideration
Socio-Economic	Property and access impacts Compatibility with Town plans and policies Potential noise impact on adjacent properties
Cultural Heritage	Potential impacts to Cultural Heritage Resources Impacts to areas of Archaeological Potential
Natural Environment	Potential impacts to Twenty Mile Creek Potential impacts to aquatic and terrestrial habitat Potential impacts to drainage and stormwater management
Transportation	Local road function Multi-modal considerations Operations
Technical Considerations	Conformance to current design standards Impacts to slope and slope stability. Comparative implementation cost

Table 3: Overall Evaluation Approach

Most Preferred	●	Potential impacts are negligible, no mitigation is required.
More Preferred	◕	Potential impacts are minor and can be easily mitigated through implementation of standard mitigation measures.
Neutral	◑	Potential impacts are moderate, and implementation of several mitigation measures are required to reduce/eliminate the risks.

Less Preferred	◔	Potential impacts are major, and implementation of extensive mitigation measures are required to reduce/eliminate the risks.
Least Preferred	○	Potential impacts are significant, and implementation of substantial mitigation measures are required to reduce the risks; however, risk cannot be eliminated.

Factors	Sub-Factors	Do Nothing	Alt 1	Alt 2
Socio-Economic Environment	Property	◔	○	◔
	Planning Context	○	●	●
	Land Use	◑	◑	◑
	Noise	◑	◑	◑
Cultural Environment	Built Cultural Heritage	◔	◔	◕
	Archaeology	●	◔	◔
Natural Environment	Natural Environmental Features	○	◔	●
	Climate Change	◑	◑	◑
	Drainage and Stormwater Management	◑	◔	◕
Transportation	Transportation Network	○	◔	●
Technical Consideration	Design and Condition	○	◔	●
	Constructability	○	◔	●
	Cost	●	○	◔
Overall Recommendation		○	◔	●

Figure 5-2: Evaluation Summary Table

In summary, **Alternative Solution 2** - Realignment of Tallman Drive - **is the overall preferred alternative.** In most factor areas, Alternative 2 was identified to be preferred over other alternatives, and this was mainly due to the following aspects:

- While Do-Nothing may be desirable from a property and archeological perspective, it is unviable. Existing stability and erosion issues will persist, and deteriorating road conditions will not only impact the ravine but may result in eventual closure of the road due to safety issues. While the roadway is currently fulfilling its function, this alternative only defers action for a long-term solution.

- Alternative 1 would mitigate the existing roadway issues; however, would require construction very near to a building of cultural heritage value and significant impact to a cultural heritage landscape. While grading impacts are reduced due to the retaining wall, there will still be footprint impacts into the ravine and natural environment. Due to increase in imperviousness area, it will increase the culvert outflow at the existing outlet which might result in further slope stability and erosion issues and would need to be mitigated. This alternative is also the most expensive, including the need to the significant length of retaining wall to mitigate grading impacts to the ravine to the east.
- Alternative 2 would mitigate the existing roadway issues and limit impacts to the built heritage resource and keeps works away from the ravine and natural areas. This alternative will conform to Town standards and current construction practices. Additionally, it is less expensive than reconstruction as no retaining wall is required and only a segment of the existing road will be removed, with the remaining portion to be downgraded to a driveway for the adjacent property. Any increase in flow due to increase in imperviousness can be controlled within the ditches and requires a new northern outlet into the ravine.

6 Recommended Plan

The preferred solution for Tallman Drive was further developed and is referred to the "Recommended Plan" in the context of the Tallman Drive MCEA Study and is further detailed in the preliminary design plan and profile included in **Appendix H**.

The design plan and profile are subject to further refinement during the future Detailed Design phase, at which time, there will be further consultation with relevant technical agencies, utilities, stakeholders, and the affected property owners.

This section should be read in conjunction with **Section 5** of the PFR which discusses the design alternatives and evaluation of Tallman Drive. In addition, this section should be read in conjunction with **Section 8** which includes a discussion of the environmental effects and mitigation measures, as well as commitment to future work.

6.1 Major Design Features and Geometric Improvements

The Recommended Plan for Tallman Drive includes the following aspects:

- Realignment of Tallman Drive, west of the existing road, through the construction of approximately 200 m of new local road.
- The realigned road will be classified as a Local Road and have a 20 m Rights-of-Way (ROW).
- The new local road cross-section will be in accordance with Town of Lincoln standards for a Rural Road (Standard Dwg. DPW-401). The cross-section will consist of one 3.5 m lane in each direction and 1.0 m gravel shoulders.
- Reconstruction of the existing cul-de-sac in approximately the same locations as the existing turnaround.
- Decommission of now-disused segments of the existing Tallman Drive, south of 3155 Tallman Drive. The existing length of Tallman Drive adjacent to and north of 3155 Tallman Drive will be repurposed as the driveway to the property and connect with the reconstructed cul-de-sac. The driveway to 3135 Tallman Drive will similarly connect to the reconstructed cul-de-sac.
- No utility relocations are anticipated required because of these works, and utility impacts and considerations during construction will be revisited in the Detailed Design and Construction phases.
- There is an existing septic tank located west of the buildings of 3155 Tallman Drive. The proposed alignment avoids impacting this underground feature

however its location and exact limits shall be verified in the Detailed Design phase.

- The existing Tallman Drive roadway to the south of the limits is narrower (approx. 4.5 m to 5 m) than the Town standards used for the road realignment (7 m). The design tying into the existing roadway at study limits will be confirmed in the Detail Design phase.

6.2 Design Criteria

The Design Criteria is included in **Appendix I**. The Recommended Plan has been developed in accordance with the Town of Lincoln Municipal Design and Quality Standards, drawing upon the Town Standards for a Rural Road. As mentioned in **Section 0**, due to site constraints within the study area, a specific corridor was available for a potential realignment of Tallman Drive, and to mitigate the property and natural environment impacts, the alignment required a design exception in curvature, and this was selected following the TAC 2017 Design Exception process. In summary, per the Town standards, the minimum radius is 60 m for a local road (in accordance with TAC 2017 guidelines (Table 3.2.3.), however several benefits were been identified when using a minimum 40 m radius for the realignment of Tallman Drive. The design exception and development of the alignment of Solution 2 is further detailed in the Design Criteria.

6.2.1 Typical Road Cross-section

The typical cross-section for Tallman Drive for the Recommended Plan is shown in **Figure 6-1,** excerpted from Town Standard Drawing DPW-401 for a Rural Road.

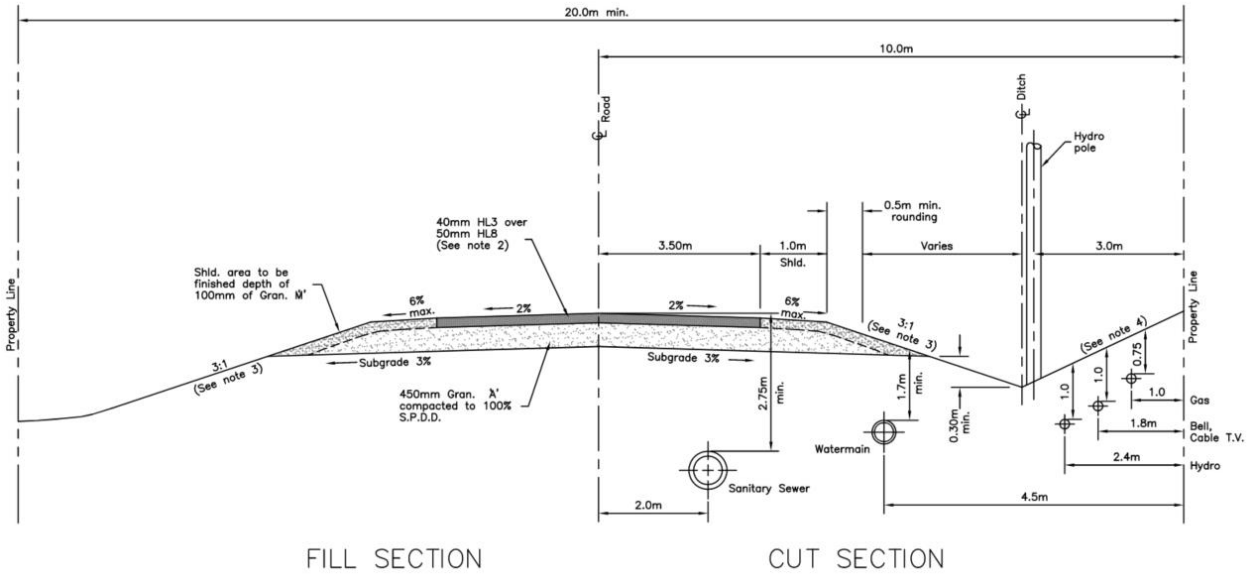

Figure 6-1 Tallman Drive Realignment - Typical Cross-Section (Town Standard DPW-401)

6.3 Drainage and Stormwater Management

A full Drainage and Stormwater Management (SWM) Report is included in **Appendix E**. The Drainage and Stormwater Management Report identifies the relevant characteristics of the existing and proposed drainage systems, documents the hydrologic assessments to determine the flow related to stormwater management design, reconfiguration of existing drainage features as well as design of new drainage features to accommodate the proposed improvements.

Based on the preceding assessments and findings for Tallman Drive, the Drainage and SWM Report concludes that:

- Due to the proposed road realignment, there is a minor increase in impervious area under proposed conditions which lead a minor flow increase at both outlets which is 20 Mile Creek Tributary Ravine at south side and east side of existing Tallman Drive.
- Although the flow increase is not significant as it drains into the deep valley of 20 Mile Creek tributary, a stormwater management low impact development (LID) measure is proposed to offset this flow increase.
- Three culverts are required along the proposed Tallman Drive realignment to provide the conveyance of the roadway drainage.

This strategy was reviewed with and agreed by the Niagara Peninsula Conservation Authority.

6.4 Utilities

Niagara Peninsula Energy (NPEI) owns local hydro infrastructure which runs north-south through the study area, east of the proposed realigned Tallman Drive. The infrastructure emerges from buried plant at the southern limits of the study area and is carried northerly through the study area, elevated on poles. Bell Canada also has aerial copper cable within this corridor, carried by the NPEI poles. As noted in Section 7 - **Consultation**, NPEI and Bell confirmed their existing infrastructure in the study area.

As per the preliminary design plan, the grading of the new roadway is encroaching into NPEI's easement; however, does not extend past the centreline of the easement, therefore, impacts and/or relocation of the buried infrastructure is not anticipated. The grading limits will be finalized in the detailed design phase. At which point the Town should conduct locates prior to or during the detail design phase to confirm the location of the buried infrastructure so that adequate grading design modifications can be used to ensure impacts to and/or relocation of the buried utilities are avoided. Additional consultation with NPEI and all other utility providers in the study area will be required in detailed design.

A significant Hydro One transmission corridor runs east-west, towards the northern limits of the stud area. While the Hydro Towers are not in proximity to the realignment of Tallman Drive, the existing cul-de-sac is located under the hydro lines and thus similarly, the reconstruction of the cul-de-sac will occur under the Hydro Lines. As detailed in the preliminary design plan and profile, no significant increase in elevation is anticipated at the existing cul-de-sac, under the transmission lines, due to the reconstruction; the preliminary profile indicates a raise of 150 mm. Hydro One have been consulted as part of this EA, and as this will be work in and around Hydro One transmission corridor, a Property Management Proposal (PMP) will be required to be completed during the Detailed Design phase, as it requires the detailed design and construction staging drawings.

6.5 Preliminary Cost Estimate

A preliminary, quantity-based cost estimate has been prepared for the proposed realignment of Tallman Drive and is included in **Appendix J**. This is a preliminary-level cost estimate and will be refined following the confirmation of design the during the Detailed Design phase. The realignment is estimated to cost approximately **$0.76M**.

The preliminary-level cost estimates included items such as removal of existing roadway elements, pavement components, roadway components (such as pavement structure), as well as assumptions in minor items (i.e., traffic control) and estimated engineering costs.

6.6 Property Requirements

As noted above, the realigned Tallman Drive will be classified as a Local Road and have a 20 m Rights-of-Way (ROW). The property is predominantly required from 3155 Tallman Drive and the improvements would require approximately 0.4 ha of land, with some small frontage requirement from 3179 Tallman Drive. The ROW requirements are detailed in the preliminary design plan and profile, included in **Appendix H**.

6.7 Implementation

Implementation of the Recommended Plan will be driven by the pace of redevelopment. The Town may decide to carry out phased implementation of different elements of the Recommended Plan, subject to priorities of capital projects in the Town, funding availability and opportunity to coordinate with redevelopment plans adjacent to the corridor.

If redevelopment occurs at a modest pace and 10 years elapses with no part of this plan being implemented, then the MCEA study will be ‘refreshed’ or updated through an EA addendum.

7 Consultation

7.1 Consultation Overview

Consultation is a key component of the Municipal Class Environmental Assessment (MCEA) process and reflects the Town of Lincoln's commitment to engaging potentially affected or interested stakeholders, including but not limited to technical agencies, interest groups, members of the public, property owners, and Indigenous Communities.

Methods of outreach and engagement for this MCEA study included notices, newspaper advertisements, direct mail, email correspondence, phone calls, an online public meeting (Public Information Centre), public meeting materials (information packages, FAQs), project website updates (https://speakuplincoln.ca/tallman-drive-class-environmental-assessment), social media (Twitter), agency meetings, and individual property owner meetings.

The MCEA framework specifies two mandatory points of contact for Schedule 'B' projects, as shown in **Figure 2-2** in **Section 2**.

Table 5 summarizes the activities, timing, purpose, and notification tactics for key points of contact throughout the study. Consultation and engagement activities are described in further detail in the following sections. The full consultation record can be found in **Appendix K.**

Table 4: Key Points of Contact

Activity	Timing	Purpose	Notification Tactics
Notice of Study Commencement (See Section 7.2.1)	MCEA Phase 1 February 2023	To introduce and invite participation in the study and request any preliminary comments and pertinent information.	– Notice posted on the project website on February 8, 2023 – Notice posted in Grimsby Lincoln News on February 15, 2023, and February 23, 2023 – Notice posted in News Now on February 15, 2023 – Notice mailed to property owners and occupants on the week of February 15, 2023. – Notice emailed to First Nations, Regional Staff, and Stakeholders on February 17, 2023. – Notice emailed to Agencies and Utilities on February 17, 2023
Public Information Centre (See Section 7.2.2)	MCEA Phase 2 June 2023	To notify and invite interested parties to review the Public Information Centre on the Town's website on June 22, 2023. The PIC presented the study scope, existing conditions, problems and opportunities, and preliminary preferred alternatives.	– Notice posted on the project website on June 5, 2023 – Notice posted in Grimsby Lincoln News on June 8, 2023, and June 15, 2023 – Notice posted in News Now on June 8, 2023, and June 15, 2023 – Notice mailed to property owners and occupants on the week of June 5, 2023 – Notice emailed to First Nations, Regional Staff, and Stakeholders on June 8, 2023

Activity	Timing	Purpose	Notification Tactics
			– Notice emailed to Agencies and Utilities on June 8, 2023. – PIC was posted on the project website on June 22, 2023.
Notice of Study Completion	MCEA Phase 2 November 16, 2023	To occur at the end of Phase 2 of the MCEA study. To announce the completion of the MCEA study and notify interested parties of the 30-day calendar review period for the Project File Report.	– Notice posted on the project website on November 16, 2023 – Notice posted in Grimsby Lincoln News on November 9, 2023, and November 16, 2023 – Notice posted in News Now on November 9, 2023, and November 16, 2023 – Notice mailed to property owners and occupants on the week of November 6, 2023 – Notice emailed to First Nations, Regional Staff, and Stakeholders on November 16, 2023 – Notice emailed to Agencies and Utilities on November 16, 2023

7.2 Public Consultation

7.2.1 Notice of Study Commencement

The Notice of Study Commencement was issued to introduce and invite study participation and request preliminary comments or pertinent information. The Notice of Study Commencement was posted on the project-specific webpage, hosted on Speak Up Lincoln on February 8, 2023, and published in the local newspaper Grimsby Lincoln News on February 15, 2023, and February 23, 2023, as well as in News Now on February 15, 2023. All study notices are in **Appendix L**.

Initial notification to agencies, interest groups, Regional Staff, and Indigenous Communities was circulated via email on February 17, 2023. The Notice of Study Commencement was mailed directly to property owners and occupants within the study catchment area on the week of February 15, 2023.

Members of the public were made aware of the study through notifications in the Grimsby Lincoln News and News Now and were invited to contact the project team to be added to the study mailing list. An online form was posted on the project webpage for member of the public to ask questions and/or join the study mailing list. Members of the public requesting to be on the study mailing list received direct notification of subsequent study milestones via email at the key points of contact listed in **Table 6**.

Feedback received in response to the Notice of Study Commencement was primarily from agencies and utilities noting general interest in the study. This feedback is documented in **Appendix K**.

7.2.2 Public Information Centre

A Public Information Centre package was posted on the Town's Speak Up Lincoln website on June 22, 2023. The PIC consisted of an information package, preliminary design drawings and a question box for the public to submit questions / comments. A copy of the PIC material is available in **Appendix M**.

The purpose of the PIC was to provide an opportunity for the public to review the evaluation of the alternative design concepts and the preliminary preferred alternatives and to provide feedback to the Project Team.

The Notice of PIC was posted Speak Up Lincoln on June 5, 2023, and published in the local newspaper Grimsby Lincoln News and News Now on June 8, 2023, and June 15, 2023.

Notification to agencies, interest groups, Regional Staff, and Indigenous Communities was circulated via email on June 8, 2023. The Notice of PIC was mailed directly to property owners and occupants within the study catchment area on the week of June 5, 2023.

As per the Town's Speak Up Lincoln PIC Visit Report, there were 25 visitors and 29 views / downloads of the online PIC. A total of 4 comments were received and included the following themes:

- Safety – questions on the provision and/or need for roadside safety features given the ravine. Support for project as it improves safety from active transportation perspective.
- Drainage – questions on the changes to local drainage patterns and locations of proposed culverts.
- Winter maintenance – question of changes to winter maintenance processes and if that would also result in additional property impact.
- Cost of project – two comments noted that the improvements, at the town cost, would primarily be benefiting just the two farms the road services and queried if the property owners should also contribute to funding the improvements.

While questions and concerns were made regarding the common themes above, overall, no significant objection to the project was provided.

All verbal and written comments and project team responses are included in **Appendix K**.

7.3 Agencies, Interest Groups, and Utilities

A list of external agencies (including regulatory/review agencies, community interest groups, emergency service providers, and utilities) was assembled based on previous Town of Lincoln MCEA studies and the Ministry of the Environment, Conservation and Parks (MECP) Government Review Team (GRT) list. The external agencies were first notified of the study through email on February 17, 2023., including a copy of the Notice of Study Commencement. These agencies included:

Provincial

- Ministry of the Environment, Conservation and Parks
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Citizenship and Multiculturalism

- Northern Development, Mines, Natural Resources and Forestry

Municipal

- Niagara Peninsula Conservation Authority
- Niagara Regional Police Service
- Town of Lincoln Fire Rescue
- Niagara Emergency Medical Services

Utilities*

- Bell Canada
- Cogeco
- Enbridge
- Hydro One Networks Inc.
- Niagara Peninsula Energy Inc.
- Niagara Regional Broadband Network
- Rogers Canada

*There is a possibility that the Tallman Drive Recommended will require modifications during future design phases. Due to the preliminary nature of the Recommended Plan, recommendations for utility relocations were not identified by this study. All potentially impacted utility providers will be consulted during the detailed design process. Niagara Peninsula Energy Inc. and Bell Canada were engaged in this study to discuss specific utility requirements in the corridor.

All agencies, interest groups, and utilities were notified of key study milestones by email on the dates summarized in **Table 6**. All agency correspondence is provided in **Appendix K**.

7.4 Indigenous Community Engagement

Indigenous Communities with potential interest in the study were identified by the Ministry of the Environment, Conservation and Parks (MECP) in correspondence dated February 23, 2023. The following communities were identified as having potential interest in the study:

- Mississaugas of the Credit First Nation
- Six Nations of the Grand River (Elected Council and Haudenosaunee Confederacy Chiefs Council with a copy to Haudenosaunee Development Institute)

The key points of contact and communication with Indigenous Communities are listed in **Table 6**, and responses are summarized in **Table 7**. All correspondence was exchanged over email and phone calls.

The Town is committed to Indigenous Community engagement and will continue to provide information, invite feedback, and extend the invitation to meet through the completion of the MCEA and into future design and implementation phases.

Table 5: Key Points of Contact with Indigenous Communities

Milestone	Date	Purpose
Notice of Study Commencement and Stage 1 Archaeological Report	February 17, 2023	To introduce the study, ascertain whether the Indigenous Community has an interest in the study, and request any preliminary comments or pertinent information. As well as provide them with an opportunity to review the draft Stage 1 Archaeological Report.
Stage 2 Archaeological Assessment	February 17, 2023	To provide an invitation to participate in the field work for the Stage 2 Archaeological Assessment.
Stage 2 Archaeological Report	May 25, 2023	To provide them with an opportunity to review the draft Stage 2 Archaeological Report.
Notice of Public Information Centre	June 8, 2023	To provide interested parties with an opportunity to review the online PIC material.
Notice of Study Completion	November 16, 2023	To announce the completion of the Class EA Study and notify interested parties of the 30-day review period for the Project File Report, commencing on November 16, 2023.

Table 6: Indigenous Community Correspondence Summary*

Indigenous Community	Key Correspondence from Indigenous Community
Mississaugas of the Credit First Nation	February 21, 2023: Expressed interest in the study and to participate in field work for Stage 2 Archaeological Assessment May 4, 2023: Attended stage 2 Archaeological Assessment field work with TMHC. May 25, 2023: Invited to review Stage 2 Archaeological Assessment report. June 6, 2023: Indicated no issues with Stage 2 Archaeological Assessment.
Six Nations of the Grand River	April 3, 2023: Expressed interest in the study and to participate in field work for Stage 2 Archaeological Assessment May 4, 2023: Attended stage 2 Archaeological Assessment field work with TMHC. May 25, 2023: Invited to review Stage 2 Archaeological Assessment report. June 26, 2023: Indicated no issues with Stage 2 Archaeological Assessment.
Haudenosaunee Confederacy Chiefs Council	No response to correspondence at initial study milestones April 30, 2023: Indicated interest in the project. May 11, 2023: Invited to review results of Stage 2 Archaeological Assessment May 25, 2023: Invited to review Stage 2 Archaeological Assessment report. August 4, 2023: HDI provided comments on Stage 2 Archaeological Assessment report.

Indigenous Community	Key Correspondence from Indigenous Community
	September 7, 2023: HDI provided comments regarding additional project commitments.

*All correspondence was exchanged over email unless specified.

7.5 Key Points of Contact

External agencies, stakeholders, interest groups, emergency service providers, and property owners were contacted directly at key milestones throughout the study to provide input and feedback on the decision-making process. The key points of contact are listed in **Table 8**. Study notifications, public presentations and consultation material is included in **Appendix K**.

A direct mailing list of property owners within a defined catchment area was developed at the outset of the study.

Members of the public were made aware of the study through notifications in the local newspaper and were invited to contact the project team to join the project mailing list. Members of the public requesting to be on the mailing list received direct notification of subsequent study milestones at the key points of contact.

A dedicated webpage was established on the Town's *Speak Up Lincoln* Bang the Table Engagement HQ:

https://speakuplincoln.ca/tallman-drive-class-environmental-assessment

Public Information Centre material (e.g., public notice and presentation) were made available on the study webpage. All notices and study materials contained the Town and consultant project manager's email addresses to facilitate direct communication from interested members of the public.

Table 7: Key Points of Contact

Notice	Date
Notice of Study Commencement	February 8, 2023
Notice of Public Information #1	June 5, 2023
Notice of Study Completion	November 16, 2023

8 Environmental Effects, Mitigation Measures, and Commitments to Future Work

The following sections highlight the key negative and positive impacts of the Recommneded Plan.**Table 9** provides a concise list of the commitments to further work and preliminary mitigation measures for future consideration.

Given that the Recommended Plan will be implemented over the long term, mitigaton measures and commitments to future work made in this MCEA will be reviewed and confirmed during future design stages, subject to mandates of respective agencies, regulations, guidelines, and other applicable factors at that time.

8.1 Socio-Economic Environment

8.1.1 Land Use

The Recommended Plan is consistent with the future land use planned for Tallman Drive and the Town's integrated land use and transporation plans and policies

Section 3 provides an overview of how the Tallman Drive MCEA has considered planning context and policies related to integrated land use and transportation planning.

The Tallman Drive MCEA study contemplates improvements are consistent with the direction the Growth Plan to support multi-modal uses through provision of safe and comfortable facilities for pedestrians, cyclists, and other active transportation uses, increase efficiency, and provide future flexibility in the transportation network.

8.1.2 Property

Final impacts to private property will be confirmed during future design phases. The Town of Lincoln will continue to consult with affected property owners on an individual basis during future phases. Property acquisition or conveyance, in accordance with the Town's procedures, will occur in advance of construction.

8.1.3 Access

Access to impacted property would require modification and will be confirmed during future design phases.

8.1.4 Noise

The Recommended Plan will bring the road closer to one rear yard area, typically considered as a noise sensitive receiver. However, the portion of Tallman Drive to be realigned is only providing access to the two properties with no expected increase in traffic volumes. Changes in noise levels are expected to be nominal.

The potential for construction noise issues will be further reviewed during detailed design when construction methodology and schedule is fully developed.

8.1.5 Climate Change

The MECP guide titled Consideration of Climate Change in Environment Assessment in Ontario sets out ministry expectations and supports the province's Climate Change Action Plan by outlining climate change considerations for environmental assessment studies.

The guide notes 'climate consideration' within a project means that consideration has been given to methods to reduce greenhouse gas emissions and developing a design that is more resilient to future changes in climate and helps maintain the ecological integrity of the local environment in the face of a changing climate. Specifically, proponents are encouraged to consider mitigation (how the project might mitigate climate change) and adaptation (measures to adapt to climate change or make the project more resilient to the effects of climate change). Considering how a project may contribute to climate change, through its greenhouse gas emissions or its effects on the natural landscape, is important to the planning process as it allows proponents to consider climate mitigation measures to avoid, minimize, or offset such effects.

Climate Change Adaptation Plan

In Spring 2021, Council approved the Corporate Climate Adaptation Plan (CCAP) and passed a motion to declare a climate crisis in Lincoln. Council recognizes the urgent need to take action to mitigate the effects of climate change and to deepen the Town's commitment to protecting Lincoln's economy, ecosystems, and community from climate change. The CCAP includes 47 actions that the municipality will undertake to adapt to climate change. These actions contribute to eight high-level goals that the Town will strive.

- **Goal 1**: Integrate climate change considerations into Town strategies, plans, policies, procedures, operations, & services.

- **Goal 2**: Increase resiliency & adaptive capacity within economic development, community services, parks, & recreation.
- **Goal 3**: Protect natural resources, promote ecosystem services, & minimize environmental degradation.
- **Goal 4**: Mitigate harmful consequences of extreme weather & emergency events.
- **Goal 5**: Minimize health & safety risks to community members and staff.
- **Goal 6**: Foster Lake Ontario shoreline resilience through planning, management & protection
- **Goal 7**: Consider climate change impacts in built infrastructure & asset management.
- **Goal 8**: Increase climate change literacy among staff & public

The Recommended Plan for Tallman Drive is specifically aligned with Goal 3 as it minimizes impacts to the natural environment and Twenty Mile Creek.

8.2 Cultural Environment

8.2.1 Archaeology

A Stage 1 Archaeological Assessment was completed for the Tallman Drive MCEA and can be found in **Appendix B.** The findings and recommendations are as follows:

- Portions of the project area along and directly adjacent to Tallman Road were identified as extensively disturbed (0.3 ha; 28.3%) and do not require further assessment.
- The eastern portion of the project area was identified as steeply sloped (0.15ha; 14.1%) and does not require further assessment.
- The portions of the project area that retain archaeological potential require Stage 2 archaeological assessment prior to ground disturbing activities (0.61 ha; 57.6%). Given the unploughable conditions, the Stage 2 assessment should consist of a test pit survey at 5 m intervals, and
- If the overall project area is changed to incorporate lands not previously assessed, further assessment will be required.

As per the recommendations on the Stage 1 Archaeological Assessment, a Stage 2 Archaeological Assessment was conducted and can be found in **Appendix C**. Despite the completion of intensified survey at 2.5 m intervals, which included the excavation of additional test pits and a test unit, Location 1 produced three nondiagnostic Indigenous

artifacts. Under the provincial framework, Location 1 does not have further cultural heritage value or interest and does not qualify for Stage 3 testing. If plans change to include impacts to lands outside of the areas cleared of further archaeological concern, additional archaeological assessment may be required.

8.2.2 Indigenous Engagement

Given the sensitivity of the general area from an Indigenous perspective, there is a need for continued and ongoing engagement of Indigenous Communities through future design and implementation stages. The Town remains committed to engagement of Indigenous communities and will continue to provide information, invite feedback, and extend the invitation to meet with Indigenous Communities during detailed design.

With consultation with Indigenous Communities, the following is being recommended as commitments by the Town, to be carried forward through the subsequent Detailed Design and/or construction phases:

- Impacts outside of current project limits – no construction activities are to expand outside the proposed new ROW limits. If, during Detailed Design, additional impacts outside the existing project limits are identified, additional archaeological assessment will be required.
- Construction staging and access – the site is expected to be primarily accessed from the south, where the proposed ROW merges with the existing Tallman Drive ROW, and construction activities are expected to remain within the proposed ROW. It may also be necessary to prohibit some larger construction vehicles from using the existing road to avoid further deterioration of the roadway; this will be confirmed in the Detailed Design and construction phases. A strict Construction Staging and Access plan is recommended to be developed to mitigate impacts to the existing road and limit risk of vehicles exceeding the construction limits.
- Material storage / laydown areas - locations within the proposed ROW are expected to be used for construction material, as well as areas within/adjacent the existing roadway and existing cul-de-sac that were also identified as having no archaeological potential, per the Stage 1 Archeological Assessment.
- Monitoring – visual indication (e.g., snow fencing) will be used for the limits of the work zone and construction areas. Site controllers will do inspections and report back to the Town regarding the maintenance of that fencing.

The Town further commits to continued outreach with Indigenous Communities during Detailed Design and construction phases.

8.2.3 Built Cultural Heritage

A Cultural Heritage Assessment Report can be found in **Appendix A.** The findings of this work are summarized in the sections below.

Of the 14 properties, structures, and landscapes reviewed, 10 were found to have existing built heritage resources/cultural heritage landscapes or the potential for built heritage resources/cultural heritage landscapes. Of the 10 potential properties reviewed, one BHR was identified as having CHVI and two CHLs were determined to have potential CHVI based on professional judgement and the preliminary application of *OHA* O.Reg. 9/06 criteria.

Key findings are summarized as follows:

- One property is listed on the Town of Lincoln Heritage Register.
- There are no properties in or adjacent to the Study Area that are designated under Part IV of the Ontario Heritage Act.
- The Study Area is outside of the UNESCO Niagara Escarpment Biosphere Reserve.
- Of the 14 properties, structures, and landscape features in the Study Area, 10 were found to have existing built heritage resources/cultural heritage landscapes or the potential for built heritage resources/cultural heritage landscapes.

Recommendations

Based on the results of the assessment, the following recommendations have been developed:

- That the proposed road realignment in the Study Area has the potential to cause direct impacts to the heritage value of two identified CHLs and indirect impacts to the heritage value of one identified BHR (see Appendix D for maps). Accordingly, a pre-construction vibration monitoring assessment by a qualified professional is recommended for the BHR to determine if vibration monitoring or site plan controls are required.
- As a precaution, a designated construction staging area and setbacks from identified heritage features should be agreed upon prior to the commencement of construction. Ongoing monitoring of construction activities is also recommended to ensure the safety of the potential BHR.
- It is recommended that the Twenty Mile Creek Ravine and Tributary 1 (TMC-01) and Twenty Mile Creek Ravine and Tributary 2 (TMC-02), which are adjacent to the Study Area, remain as uninhibited as possible. Any necessary road

improvements should be sympathetic to the rural character of the area and maintain naturalized and/or vegetated embankments, if possible.

If detailed design confirms direct impacts to the identified CHLs and BHR it is recommended that additional comprehensive, site-specific cultural heritage evaluation reports (CHERs) and HIAs be completed to inform the planning and implementation of the proposed construction activities. These studies can combine the property at 3155 Tallman Drive (TMD-05) and the Twenty Mile Creek Ravine and Tributaries (TMC-01 and TMC-02).

8.3 Natural Environment

Based on the review of existing environmental conditions and planned construction activities it is anticipated that potential project impacts during construction may include:

- Impacts to vegetation, wildlife, and species at risk habitat associated with vegetation clearing.
- Impacts to aquatic habitat and fish associated with spills and erosion and sedimentation.

8.3.1 Vegetation and Tree Cover

Tree and vegetation removal are anticipated to occur on the study area because of the potential road reconstruction or realignment. Since the design is preliminary in nature the exact extent of the tree and vegetation removal is unknown.

8.3.2 Creek Protection, Drainage, Erosion, and Sediment Control, and Protection of Fish Habitat

Based on the review of all three design alternatives presented for this project, it is assumed that no direct impacts to the aquatic features (i.e., the pond in the northwest extent of the property, the ravine, and the Tributary of Twenty Mile Creek) would occur within the or adjacent the Site to, and all alternatives would be able to maintain a 30 m buffer from these features. It is anticipated that any potential for indirect impacts associated with erosion and sedimentation can be mitigated through standard construction best practices.

8.3.3 Protection of General Wildlife and Migratory Bird

Several wildlife species were documented through background data review and have been confirmed through field investigations. Wildlife and associated habitat observed within the Site was typical of a natural setting and based on field observations, common

species are expected to be present within these habitat features, all with secure habitats in Ontario.

Many bird species were observed, and the Site and adjacent lands provide suitable breeding bird and bat habitat. Construction activities have the potential to damage nests and/or disturb breeding birds within the Site. The Tributary of Twenty Mile Creek and the adjacent riparian habitat provide habitat for common mammal, insect, and herpetofauna species.

Project construction has the potential to directly impact the meadow, and shrub agricultural lands required for site preparation and disturbance during construction. Vegetation clearing, use of heavy machinery, increased human presence and noise and light pollution, soil compaction, stockpiled earth, and sedimentation of existing terrestrial habitat has the potential to indirectly impact a variety of wildlife. However, with proper implementation of avoidance and mitigations such as site clearing outside of the active season, and proper isolation of the construction areas, these impacts are anticipated to be temporary and methods to restore the disturbed areas post-construction should be implemented.

8.3.4 Habitat Protection for SAR

At this time, no endangered or threatened SAR have been identified within the Site; however, the project has the potential to impact five (5) SAR; Rusty-patched Bumble Bee, Gypsy Cuckoo Bumble Bee, Nine-spotted Lady Beetle, Transverse Lady Beetle, and Gray Ratsnake. A summary of these potential adverse effects is listed below.

Habitat for four (4) endangered insects and one (1) snake is present within the shrub agricultural lands and open meadow ecosites. Direct impacts are possible in these areas during site clearing and construction activities. However, it is anticipated that these impacts will be temporary during construction and the habitat features will be available for these species after project completion.

8.4 Drainage and Stormwater Management

The realignment of Tallman Drive, through the greenfield, will have some impact to the adjacent land use by increasing the imperviousness along the proposed road ROW, thereby increasing the runoff from the roadway area. Increased runoff could create flooding concerns and will also cause erosion.

The realignment of road will be maintained as a rural section. Therefore, vegetative road embankments and proposed grassed swales will provide quality treatment of road runoff. The increase in flow from the areas draining on the south side of Tallman Drive

to the 20 Mile Creek Tributary ravine is negligible. Therefore, peak flow control is not required. As discussed above, the existing and proposed grass ditch and proposed vegetative road embankment will provide quality control measure of road runoff. The increase in flow from the areas draining on the east side of the 20 Mile Creek Tributary ravine is 0.084 m_3/s. Although the flow increase is not significant, a stormwater management Low Impact Development (LID) measure such as infiltration galleries can be implemented to offset this flow increase. The potential of implementing these infiltration galleries as the stormwater management LID measures based on soil and groundwater condition will be further reviewed in the next phase of the study.

8.5 Source Water Protection

Section 4.5 discusses the potential sensitivities of the Tallman Drive study area with respect to source water protection and potential for drinking water threats, as identified by the Ministry of the Environment, Conservation and Parks Source Protection Information Atlas.

The Niagara Peninsula Source Protection Plan identifies a list of 21 Prescribed Threats for which policies have been developed. A review of the list reveals one potential threat that is applicable to Tallman Drive. A summary of the potential threat and an assessment of how this threat will be managed within the context of Tallman Drive is provided below.

- Potential Threat: The storage of snow (limited to roadway clearing operations). Snow removed (ploughed) from roads and parking lots can be contaminated with salt, oil, grease and heavy metals from vehicles, litter, and airborne pollutants. This drinking water threat includes snow that is pushed into large piles on a property (e.g., stored in parking lots), snow transported to a central site from other locations (e.g., snow disposal sites).
- Mitigation Measures: Roadside storage of snow along Tallman Drive (or any street) is a low potential threat, in the context of the Source Protection Plan. The amount of snow stored will not be significantly more than what is already stored for the existing road.

8.6 Design and Construction

The proposed improvements on Tallman Drive as described in **Section 6** support future transportation needs by providing enhanced transportation options for all road users.

8.6.1 Utilities

As noted in **Section 6**, a further consultation with affected utility companies (NPEI and Bell) will be required during detailed design.

Locates will be conducted prior to or during the detail design phase to confirm the location of the buried infrastructure so that adequate grading design modifications can be used to ensure impacts to and/or relocation of the buried utilities are avoided.

8.6.2 Construction Monitoring

A general monitoring program will be developed during detailed design and shall be implemented during construction to measure and monitor any potential project impacts on watercourses, including identifying contingency measures to mitigate or minimize the impact, if any.

During construction, the Contractor will ensure that implementation of mitigating measures and key design features are consistent with the contract and external commitments.

Mitigation measures shall be implemented and maintained by the Contractor who will ensure that the natural, social, and economic environments are not impacted by the construction activities and/or that impacts are minimized. The Contractor will also ensure that items such as sedimentation controls and appropriate signage are maintained throughout construction.

Appropriate signage shall be implemented to identify detour routes at the time of temporary roadway/sidewalk closures. In addition, closure events and restricted access to residents and/or businesses shall be planned to accommodate vehicle and pedestrian movement during construction.

In addition, the effectiveness of the environmental mitigating measures will be assessed to ensure that:

- Individual mitigation measures are providing the expected control and / or protection.
- Additional mitigation measures are provided, as required, for any unanticipated environmental problems that may develop during construction.
- The Contractor will ensure that the environmental measures outlined in this report and further developed during detailed design are carried out. In an event that problems arise, appropriate agencies will be contacted to provide further input.

- If the impacts of construction are different than anticipated, or if the method of construction is such that there are greater than anticipated impacts, the Contractor's methods of operation will be changed or modified to reduce those impacts.

8.7 Permits and Approvals

Following the successful completion of the Municipal Class Environmental Assessment process documented in this Project File Report, all Environmental Assessment requirements will have been met. Other approval requirements will be addressed for the project during detailed design. Approval requirements may include:

- Ontario Heritage Act requirements for Archaeological Clearance
- Ontario Heritage Act and Town of Lincoln requirements / permits / approvals for any heritage impacts / mitigation
- Notifications/permissions from respective utilities with facilities in the area
- Some utilities and municipal services works may require separate permits under LSRCA regulations.
- Environmental Compliance Approval for the stormwater management (including possible storage tank, OGS), watermain and sanitary works.
- A PTTW application will be prepared, as required, to obtain PTTW from MECP if the amount of water taken exceeds 50,000 L/day as per the Ontario's Water Taking Regulation (O. Reg. 387/04 made under the Ontario Water Resources Act). The permit application will be accompanied by all appropriate supporting hydrogeological assessment information.
- Completing the DFO Self-Assessment process to determine if DFO review under the Fisheries Act is required and obtain Fisheries Act Authorization, as applicable.

8.8 Proposed Mitigation and Commitments to Further Work

Table 9 summarizes the proposed mitigation measures and commitments to future work based on the identified sensitivities and the proposed works.

Table 8: Summary of Commitment to Further Work and Preliminary Mitigation Measures

Summary of Commitment to Further Work and Preliminary Mitigation Measures	
Land Use	
1)	Continue to work with the property owner to ensure that the agricultural business is successful throughout the detailed design and construction phases of the study.
Property	
2)	Final impacts to private property will be confirmed during detailed design. The Town of Lincoln will continue to consult with affected property owners on an individual basis during detailed design. A legal survey may be required to correct discrepancies in property mapping sources.
3)	The Town will work with developers to ensure conveyance of right-of-way as part of the development approval process.
4)	Property acquisition, in accordance with Town of Lincoln procedures, will occur during / following detailed design, in advance of construction. The timeline for detailed design and construction will be based on the pace of redevelopment in the area and Council priorities.
5)	In the upcoming detailed design phase, the project team will continue to take a proactive approach in direct discussions with affected property / business owners. The detailed design involves the spatial arrangement of all construction aspects and the detailed scheduling that will allow for efficiencies to be identified. The detailed construction plan and schedule will incorporate all utility relocations (if any), municipal service upgrades and road works. The construction plan will inform the development of a traffic management plan including scheduling and

Summary of Commitment to Further Work and Preliminary Mitigation Measures	
	duration of lane restrictions and full closures. This information will facilitate more meaningful discussion with and provide more certainty to property and business owners.
Noise and Vibration	
6)	Construction noise and vibration issues will be further reviewed during detailed design when construction methodology and schedule is fully developed.
7)	Construction activities will conform to the Town of Lincoln's Noise Control By-Laws. In the Contract Documents, there shall be explicit indication that Contractors are expected to comply with all applicable requirements of the contract and local noise by-laws. Enforcement of noise control by-law will be the responsibility of the Town for all work done by Contractors.
8)	All equipment shall be properly maintained to limit noise emissions. As such, all construction equipment will be operated with effective muffling devices that are in good working order.
9)	In the presence of noise complaints, all construction equipment will be verified to comply with MECP NPC-115 guidelines (or future guidelines).
Climate Change	
10)	Continue to consider how the project aligns with and can implement the Town's Climate Change Adaptation Plan.
11)	Consider design elements that can enhance reaching greenhouse gas reduction targets.
Archaeology	
12)	Should previously undocumented (i.e., unknown, or deeply buried) archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the Ontario Heritage Act. The

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proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48(1) of the Ontario Heritage Act.
13) If plans change to include impacts to lands outside of the areas cleared of further archaeological concern, additional archaeological assessment may be required.
Indigenous Community Engagement
14) Given the sensitivity of the general area from an Indigenous Peoples perspective, there is a need for continued and ongoing engagement of Indigenous Communities through future design and implementation stages. The Town remains commitment to engagement of Indigenous Communities and will continue to provide information, invite feedback, and extend the invitation to meet, during detailed design.
15) no construction activities are to expand outside the proposed new ROW limits. If, during Detailed Design additional impacts outside the existing project limits are identified, additional archaeological assessment will be required.
16) the site is expected to be primarily accessed from the south, where the proposed ROW merges with the existing Tallman Drive ROW, and construction activities are expected to remain within the proposed ROW. It may be necessary to prohibit some larger construction vehicles from using the existing road to avoid further deterioration of the roadway; this will be confirmed in the Detailed Design and construction phases.
17) locations for construction material within the proposed ROW are expected to be used, as well as areas within/adjacent the existing roadway and existing cul-de-sac that were identified as having no archaeological potential, per the Stage 1 Archeological Assessment.

Summary of Commitment to Further Work and Preliminary Mitigation Measures
18) locations for construction material within the proposed ROW are expected to be used, as well as areas within/adjacent the existing roadway and existing cul-de-sac that were identified as having no archaeological potential, per the Stage 1 Archeological Assessment.
19) The Town commits to supporting Indigenous Community participation in the project through capacity funding.
20) Continue to engage with all communities that have been engaged with to date as the Class EA process proceeds.
Built Cultural Heritage and Cultural Heritage Landscapes
21) To minimize potential impacts on the identified features of the BHR, a designated construction staging area and setbacks from identified heritage features should be confirmed prior to the commencement of construction activities.
22) Ongoing monitoring of construction activities is also recommended to ensure the safety of the BHR.
23) A pre-construction vibration monitoring assessment by a qualified professional is recommended to determine if vibration monitoring or site plan controls are required.
24) If direct impacts to the CHL are identified during the detailed design phase, a CHER/HIA should be initiated to inform further planning and implementation of the proposed construction activities.
25) It is recommended that the tributary's watercourse and embankments remain as uninhibited as possible, particularly in the free-flowing, natural portions of the tributary. Any necessary artificial channeling should be sympathetic with the rural character.
26) Should future work require an expansion of the study area then a qualified heritage consultant should be contacted to confirm the impacts of the proposed work on potential heritage resources.

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27) If detailed design confirms direct impacts to the identified CHLs and BHR it is recommended that additional comprehensive, site-specific cultural heritage evaluation reports (CHERs) and HIAs be completed to inform the planning and implementation of the proposed construction activities.
Natural Environment
Vegetation and Tree Cover Recommended mitigation measures to protect terrestrial habitat and vegetation on the study area include: 28) Vegetation removal will be minimized and clearly delineated on construction drawings. 29) Clearing of vegetation in adjacent areas should be kept to a minimum whenever possible, and existing trails, roads or cut lines should be used to avoid disturbance to vegetation and prevent soil compaction. 30) Develop a Tree Protection Plan which identifies locations to be preserved. 31) The root system, trunk or branches of any tree not designated for removal will be protected from damage. 32) In the event of accidental damage to trees, or unexpected vegetation removal, vegetation shall be replaced / restored with native species. 33) Construction vehicles will have designated access routes from and to the construction area. Creek Protection, Drainage, Erosion, and Sediment Control, and Protection of Fish Habitat 34) No in-water work will occur during in-water work timing restrictions. Timing restrictions to be confirmed with Ministry of Natural Resources and Forestry (MNRF). 35) An erosion and sediment control (ESC) plan will be developed by the contractor with the goal of controlling erosion and the movement of sediment laden water offsite.

Summary of Commitment to Further Work and Preliminary Mitigation Measures

36) The contractor will be responsible to ensure that the ESC measures chosen are appropriate for the site and are functioning as intended.

37) No work will occur in or within 30 m of the water until the appropriate ESC measures have been properly implemented. These will be designed to prevent the movement of suspended sediments and concrete outside of the site preparation and construction work areas.

38) The contractor will maintain and monitor ESC measures, provide the results of monitoring, and ensure adjustments as needed are made on a continuous basis.

39) ESC structures are to be left in place until vegetation is re-established and/or all exposed soils are stabilized.

40) There will be no use of herbicides in clearing of vegetation.

41) Construction activities will be suspended during periods of heavy rains.

42) If blasting activities are required, they will follow Measures to Avoid Causing harm to Fish and Fish Habitat for explosives.

Protection of General Wildlife and Migratory Birds

43) Removal of woody vegetation will not occur during the breeding bird/bat season from April 15 - September 30 inclusive, unless a qualified biologist has searched the Site for nests/maternity roosts and concluded that no nests/roosts are present, no more than 2 days prior to clearing. If nests/roosts are found, a protective buffer around the location will be required until such time that the nest/roost is abandoned.

44) Removal of natural vegetation will be minimized and clearly delineated on construction drawings.

45) Workforce will be educated on potential wildlife which could occur in the vicinity of the work area and measures to avoid wildlife.

Summary of Commitment to Further Work and Preliminary Mitigation Measures

46) Harassment and/or harm to wildlife during construction is prohibited.

47) When possible, work will be completed during daylight hours. If nighttime lights are used, they will be installed to illuminate the work area only to minimize impacts to nighttime activities of wildlife.

48) Vehicles and equipment will have the appropriate mufflers installed.

49) Vehicle and equipment engine idling will be minimized.

50) Construction vehicles will have designated access routes from and to the construction area.

51) Stockpiled materials will be surrounded by sediment control fencing to prevent nesting by turtles and snakes.

52) Existing access roads will be used as much as possible and speed limits will be clearly posted on site access and construction roads to minimize the potential for road mortality.

<u>Habitat Protection for SAR</u>

53) A worker awareness program shall be provided to all on-site personnel that includes SAR identification and habitat characteristics and provides general species-specific guidance with respect to appropriate actions to be taken whenever these species are encountered.

54) A daily pre-construction search of the machinery and the work area shall be implemented to identify presence of SAR, as animals may be found hiding or basking around equipment, rocks, debris piles etc.

55) If a SAR enters the work area during the construction period, any work that may harm the individual is to stop immediately and the supervisor will be contacted. No work will continue until the individual has left the area. These sightings will be reported to MECP and NHIC; and

56) If an unexpected, rare plant or animal species are encountered, construction activities will be halted, and MECP will be contacted to provide advice on additional mitigation measures or permits which may be required.

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Stormwater Management	
57)	Although the flow increase is not significant as it drains into the deep valley of 20 Mile Creek tributary, a stormwater management low impact development (LID) measure is proposed to offset this flow increase.
58)	At the detailed design stage, erosion controls need to be provided at all proposed culvert outlets along the slope.
59)	NPCA Permit is required for work to done within an NPCA Regulated area.
60)	If the proposed activities cannot avoid impacting protected species and their habitats, the Town will apply for an authorization under the Endangered Species Act (ESA). If the Town believes that their proposed activities are going to have an impact or are uncertain about the impacts, they will contact SAROntario@ontario.ca to undergo a formal review under the ESA.
Groundwater Resources and Source Water Protection	
61)	Geotechnical and hydrogeological investigations will be required in detailed design to appropriately determine groundwater conditions and confirm the need for and type of Permit to Take Water (PTTW).
62)	A PTTW will be obtained, prior to construction, from MECP per the Ontario's Water Taking Regulation (O. Reg. 387/04 made under the Ontario Water Resources Act.
63)	Best management practices (BMPs) will be implemented by the Contractor to prevent fuel lubricants and fluid spills resulting from construction activities and manage any unanticipated occurrences that could result in impacts to groundwater.
64)	Potential threats to source water protection can be mitigated through the following actions:

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	Roadside storage of snow along Tallman Drive (or any street) is a low potential threat, in the context of the Source Protection Plan. The amount of snow stored will not be significantly more than what is already stored for the existing road.
Municipal Road Design, Services and Utilities	
65)	Proposed grading limit as shown on the Recommended Plan will be updated in detailed design based on proposed grading by future development and topographic survey.
66)	Road profile to be updated based on future detailed topographic survey.
67)	It is intended that the Town will fully integrate sanitary and water system upgrades into the detailed design and construction.
68)	Utility relocations will be identified during detail design in consultation with the affected utility providers (NPEI and Bell). Utility relocations shall be coordinated to minimize service disruptions where possible through liaison and contract requirements.
69)	Locates will be conducted prior to or during the detail design phase to confirm the location of the buried infrastructure so that adequate grading design modifications can be used to ensure impacts to and/or relocation of the buried utilities are avoided.
Traffic Management During Construction	
70)	A construction staging and traffic management plan will be developed and communicated to all area residents and emergency services will in advance of execution. Communication would typically involve a direct mailout to all residents and information posted on the Town's website. Direct outreach to emergency services will be coordinated as required.

Summary of Commitment to Further Work and Preliminary Mitigation Measures
71) Emergency vehicle access will be always maintained.
Construction Monitoring
72) A general monitoring program will be developed during detailed design and shall be implemented during construction to measure and monitor any potential project impacts on watercourses, including identifying contingency measures to mitigate or minimize the impact, if any.
73) During construction, the Contractor will ensure that implementation of mitigating measures and key design features are consistent with the contract and external commitments.
74) Mitigation measures shall be implemented and maintained by the Contractor who will ensure that the natural, social, and economic environments are not impacted by the construction activities and/or that impacts are minimized. The Contractor will also ensure that items such as sedimentation controls and appropriate signage are maintained throughout construction.
75) Appropriate signage shall be implemented to identify detour routes at the time of temporary roadway/sidewalk closures. In addition, closure events and restricted access to residents and/or businesses shall be planned to accommodate vehicle and pedestrian movement during construction.
76) In addition, the effectiveness of the environmental mitigating measures will be assessed to ensure that: a) Individual mitigation measures are providing the expected control and / or protection. b) Additional mitigation measures are provided, as required, for any unanticipated environmental problems that may develop during construction. c) The Contractor will ensure that the environmental measures outlined in this report and further developed during detailed design are carried out. In an event that problems arise, appropriate agencies will be contacted to provide further input.

Summary of Commitment to Further Work and Preliminary Mitigation Measures
d) If the impacts of construction are different than anticipated, or if the method of construction is such that there are greater than anticipated impacts, the Contractor's methods of operation will be changed or modified to reduce those impacts. 77) Activities involving the management of excess construction soil should be completed in accordance with O. Reg. 406/19 On-Site and Excess Soil Management and the ministry's current guidance document titled "Management of Excess Soil – A Guide for Best Management Practices" (2014), and all waste generated during construction must be disposed of in accordance with ministry requirements.