Township of Havelock-Belmont-Methuen
Regular Council Meeting
Agenda

Date: Tuesday, October 15, 2024

Place: Havelock-Belmont-Methuen Council Chamber
1 Ottawa Street East
Havelock ON K0L 1Z0 (Limited Seating)

and

Video Conference
Various Remote Locations
Township of Havelock-Belmont-Methuen

Note: Meeting will be recorded and uploaded to YouTube

Time: 9:30 a.m.

Zoom Link: **Open Session Council Meeting (October 15, 2024) Zoom Invitation**

Meeting ID: 889 9491 4609
Passcode: 714532

Call to Order

Mayor Martin will call the meeting to order.

Land Acknowledgement

Cell Phones

Everyone in the meeting is asked to turn off their cell phone or place it on vibrate mode.

Declaration of Pecuniary Interest and General Nature Thereof

No written Declarations of Pecuniary Interest were received prior to publication of the agenda.

Introduction of New Staff Member

1. Travis Toms, Chief Building Official
   Re: Samantha Deck – Planner

Minutes of Council Meetings

1. Regular Council Meeting – October 1, 2024

Public Meetings

Public Meeting for Zoning By-law Amendment

Note to Virtual Guests: Please keep your video off and microphone muted during the meeting until the Chair invites comments regarding a planning matter.

1. Presented by Elysia Ackroyd - Fotenn Planning + Design
   Re: Zoning By-law Amendment – Mark Perkin
   Lot 15, Concession 3, Belmont Ward
   41 Fire Route 8A, ARN 1531-010-003-16700

Public Meeting for Committee of Adjustment (Minor Variance Applications)

1. Presented by Elysia Ackroyd - Fotenn Planning + Design
   Re: Kirk Thomas – 9351 County Road 30
   Part Lot 3, Concession 9, Application A-14-24
   ARN: 1531-010-001-02100

Regular Meeting Resumes

Delegations and Presentations

1. Matthew Philip, Unity Design
   Re: Community Centre – Construction Management RFP Synopsis

2. Alexander Kostiw and Terry Rees
   Re: Natural Shoreline Preservation

Staff Reports for Information

1. Josh Storey, Supervisor of Parks, Recreation & Facilities
   Re: Parks, Recreation and Facilities September Department Updates

2. Travis Toms, Chief Building Official
   Re: Building Department Activity Report – September 2024

3. Lionel Towns, Treasurer
   Re: 2025 OPP Billing Statement

Staff Reports for Follow-up Action

1. Peter Lauesen, Manager of Public Works
   Re: Snowplowing Quotations for the 2024-2025 and 2025-2026 Winter Seasons

2. Peter Lauesen, Manager of Public Works
   Re: Jug Fill & Water Supply Station Pricing

3. Shari Gottschalk, Economic Development Officer
   Re: 3rd Annual Pumpkin Parade Planning

4. Bob Angione, Chief Administrative Officer
   Re: Electoral Ward System

5. Bob Angione, Chief Administrative Officer
   Re: Request for Proposal #PRF-2024-03 – Construction Management Services for the Community Centre Renovations and Addition

6. Bob Angione, Chief Administrative Officer
   Re: Commercial Lease Agreement with the Cordova Mines Recreation Association and the Township of Havelock-Belmont-Methuen Public Library

7. Bob Angione, Chief Administrative Officer
   Re: Norwood Medical Centre

Correspondence

Action Items

1. Ken and Carol Simard
   Re: Road Allowance Closure Request

2. Annette Trotman
   Re: Location to Park School Bus

Information Items

1. Peterborough Public Health
   Re: September 2024 – Board of Health Summary

2. County Official Plan Modifications
   Re: Technical Advisory Committee Minutes

3. Government of Ontario
   Re: Ontario Volunteer Service Award Nomination Information

Committee Liaison Reports

1. Jim Martin, Mayor (Verbal)
   Hart Webb, Deputy Mayor (Verbal)
   Re: County Council Update

Written or Oral Notice of Motion or Discussion

None.

Other Business

None.

By-Laws

1. **By-law 2024-073** Being a By-law to amend The Township of Havelock-Belmont-Methuen Comprehensive Zoning By-law in order to change the zoning of certain lands being located in Lot 15, Concession 3, in the Belmont Ward. Assessment Roll No. 1531-010-003-16700 from “Seasonal Residential (SR) Zone” to ‘Special District 286 (S.D. 286)’ in order to permit the redevelopment of a seasonal dwelling and a sleeping cabin (Mark Perkin).

2. **By-law 2024-074** Being a By-law to dissolve the Ward System of Electoral Representation for the Corporation of the Township of Havelock-Belmont Methuen and Institute an At-Large System of Electoral Representation.

3. **By-law 2024-075** Being a by-law to authorize the Mayor and Clerk to enter into a Commercial Lease Agreement with the Cordova Mines Recreation Association and the Township of Havelock-Belmont-Methuen Public Library Cordova Branch.

Closed Session

This Closed Session Council Meeting is held under authority of Section 239(2)(b) for personal matters about an identifiable individual, including municipal or local board employees; and

Section 239(2)(i) for a trade secret or scientific, technical, commercial, financial or labour relations information, supplied in confidence to the municipality or local board,

which, if disclosed, could reasonably be expected to prejudice significantly the competitive position or interfere significantly with the contractual or other negotiations of a person, group of persons, or organization.

Confirming By-law

A By-law to confirm the proceedings of the Regular Meeting of the Council of the Township of Havelock-Belmont-Methuen held on October 15, 2024.

Adjournment

Next Regular Meeting

Tuesday, November 5, at 9:30 a.m.

Township of Havelock-Belmont-Methuen
Regular Council Meeting
Video Conference
October 1, 2024
Minutes

A Regular Meeting of the Council of the Corporation of the Township of Havelock-Belmont-Methuen was held on October 1, 2024 at 9:30 a.m. with Mayor Martin presiding. This meeting was held in a hybrid format that allowed for both in-person and virtual attendance.

Members in Attendance

Council:
Jim Martin, Mayor
Hart Webb, Deputy Mayor
Kathy Clement, Councillor
Jerry Doherty, Councillor
Beverly Flagler, Councillor

Staff:
Bob Angione, Chief Administrative Officer/Clerk
Leah Hutton, Acting Deputy Clerk
Peter Lauesen, Manager of Public Works
Travis Toms, Chief Building Official
Lionel Towns, Treasurer
Shari Gottschalk, Economic Development Officer

Regrets:
Bianca Boyington, Deputy Clerk

Call to Order

Mayor Martin called the Regular meeting to order.

Land Acknowledgement

Mayor Martin read the Land Acknowledgement.

Cell Phones

Mayor Martin asked everyone to turn off their cell phone or place it on vibrate mode.

Disclosure of Pecuniary Interest

Mayor Martin reminded Council of the requirement to disclose any pecuniary interest and the general nature thereof if the occasion arises.

Minutes

R-489-24 Moved by Councillor Doherty
Seconded by Councillor Clement

That the minutes of the Regular Council Meeting held on September 17, 2024 be approved and adopted as presented.

Carried

R-490-24 Moved by Councillor Doherty
Seconded by Councillor Clement

That the Regular Council Meeting be suspended in favour of a public meeting of the Committee of Adjustment at 9:32 a.m. with Deputy Mayor Webb in the Chair.

Carried.

Public Meeting for Committee of Adjustment

Deputy Mayor Webb reminded members of the Committee of the requirement to disclose any pecuniary interest and the general nature thereof if the occasion arises.

Minor Variance Applications:

1. Presented by Elysia Ackroyd – Fotenn Planning + Design
   Re: Brian and Shannon Tomlinson
   105 Fire Route 75N
   Part Lot 11, Concession 7, ARN 1531-010-009-02500

The Township's Planning Consultant explained that all required reliefs in this application are to the Township of Havelock-Belmont-Methuen's Comprehensive Zoning Bylaw 1995-42, as amended.

It was explained that the purpose of this Minor Variance application is to:

1. Seek relief from Sections 10.2.1 (c), (d), (e), and (g) having the following effect(s):

    i. Reducing the minimum required Front Yard setback from 21.3 metres (70 feet) to 0 metres (0 feet);
    ii. Reducing the minimum required Side Yard setback from 6 metres (20 feet) to 4.6 metres (15.23 feet);
    iii. Reducing the minimum required Rear Yard setback from 7.5 metres (25 feet) to 6.7 metres (22 feet);
    iv. Increasing the maximum required Lot Coverage from 15% to 22%

2. Seek relief from Section 4.37 having the following effect(s):

    i. Reducing the High Water Mark setback from 30 metres (100 feet) to 29 metres (95 feet)

The Planning Consultant Elysia Ackroyd provided details regarding the application and explained that on Friday September 27, 2024 Township staff received confirmation from the Crowe Valley Conservation Authority (CVCA) staff that there are no flooding or erosion hazards on the property as a result of the proposed development. Township staff are of the opinion that the policies of the Provincial Planning Statement (PPS) and the Official Plan have now been addressed, and concerns regarding flooding and erosion hazards have been quashed. All planning analysis that was included in the original report to the Committee of Adjustment meeting which took place on September 17th, 2024 can now be accepted. Now that this confirmation has been provided by CVCA staff, Township staff are making the recommendation to ***approve*** the decision on this application.

The owner's agent Kirk Figueira attended the meeting virtually.

Deputy Mayor Webb invited comments in opposition of the application with no response.

Deputy Mayor invited comments in favour of the application with no response.

Deputy Mayor Webb invited questions and comments from Council.

R-491-24 Moved by Councillor Flagler
Seconded by Councillor Doherty

That Minor Variance Application A-10-24 in the name of Brian and Shannon Tomlinson be approved with the following conditions:

- That a 20-day appeal period lapse prior to the issuance of a building permit;
- That no portion of the proposed dwelling unit be situated within the shoreline crown reserve currently owned by the Ministry of Natural Resources and Foresty (MNRF), unless permission is granted from the Ministry;
- That a building permit be issued within 18 months of the approval of this application and upon submission to the building department of the appropriate

application, fees and supporting information as required by the Chief Building Official.

Carried.

That the Committee of Adjustment meeting adjourn at 9:38 a.m. and the Regular Council Meeting resume with Mayor Martin presiding.

Delegations and Presentations

1. Daniel Segal
   Re: Municipal Housing Development

R-492-24 Moved by Deputy Mayor Webb
Seconded by Councillor Doherty

That the delegation from Daniel Segal regarding Municipal Housing Development be received for information.

Carried.

Staff Reports for Information

1. Ray Haines, Fire Chief
   Re: Incident Summary – May

2. Ray Haines, Fire Chief
   Re: Incident Summary – June

3. Ray Haines, Fire Chief
   Re: Incident Summary – July

R-493-24 Moved by Deputy Mayor Webb
Seconded by Councillor Clement

That the staff reports for information be received.

Carried.

Staff Reports for Follow-up Action

1. Lionel Towns, Treasurer
   Re: Funding Option for a Test Well, Pumping Test and Water Quality Testing

R-494-24 Moved by Councillor Doherty
Seconded by Councillor Clement

That the installation of a test well, including a pumping test and water quality testing, be funded from the $50,000 approved in the 2024 Water Capital Budget for a “New Production Well.”

Carried.

2. Josh Storey, Supervisor of Parks, Recreation & Facilities
Re: Event to be held on Municipal Property – Havelock Pumpkin Parade

R-495-24 Moved by Deputy Mayor Webb
Seconded by Councillor Flagler

That approval is hereby granted to the HBM Pumpkin Parade Committee to hold their 3rd Annual Pumpkin Parade at the Havelock Community Centre grounds on November 1, 2024 from 5:00 p.m. to 7:00 p.m.; and further

That staff is hereby authorized to be on site during the event for three (3) hours and following the event for an additional three (3) hours.

Carried.

3. Josh Storey, Supervisor of Parks, Recreation & Facilities
Re: In-kind Facility Rental Request – Apple Day

R-496-24 Moved by Deputy Mayor Webb
Seconded by Councillor Clement

That approval is hereby granted to the 1st Havelock Scouting to hold their Apple Day event at the Town Hall free of charge on October 4, 2024 from 7:00 p.m. to 9:00 p.m. and on October 5, 2024 from 8:00 a.m. to 2:00 p.m.

Carried.

4. Josh Storey, Supervisor of Parks, Recreation & Facilities
Re: Event to be held on Municipal Property – Havelock Fire & Ice

R-497-24 Moved by Deputy Mayor Webb
Seconded by Councillor Doherty

That approval is hereby granted to the Havelock Fire & Ice Festival Committee to hold the Fire & Ice Festival at the Havelock Community Centre on February 8, 2024 from 11:00 a.m. to 6:00 p.m.; and further

That staff is hereby authorized to be on site prior, during and after the event for a total of 12 hours.

Carried.

5. Shari Gottschalk, Economic Development Officer
   Re: Proposed Wireless Communication Site C8643, 7891 County Road #46

R-498-24 Moved by Deputy Mayor Webb
Seconded by Councillor Clement

That Council concurs that the required public consultation pertaining to proposed Rogers Communications Inc. tower site C8643 has been completed and that all reasonable and relevant concerns pertaining to the proposal have been addressed; and further

That proposed tower site C8643 complies with land use requirements; and further

That Rogers has fulfilled Innovation, Science and Economic Development Canada (ISED) Default Protocol CPC-2-0-03 as they relate to proposed site C8643;

Therefore Be It Resolved That the Chief Administrative Officer/Clerk is hereby authorized to sign the Letter of Concurrence to permit Rogers to move forward with the installation of proposed wireless communications site C8643.

Carried.

6. Peter Lauesen, Manager of Public Works
   Re: Winter Maintenance Agreement Connecting Link

R-499-24 Moved by Deputy Mayor Webb
Seconded by Councillor Flagler

That the contract with Emcon Services Inc. for the provision of winter maintenance of the Connecting Link for the 2024-2025 winter season for a total contract price of $30,240.36 is hereby approved with the following amendments:

1. The statement “THIS AGREEMENT is made as of the 30th day of July 2023” is deleted in its entirety and replace with:

    1. THIS AGREEMENT is made as of the 3rd day of September 2024.

2. Item 5. Insurance is deleted in its entirety and replaced with:

    1. Emcon shall maintain and obtain during the Term of this Agreement commercial general liability insurance (in form satisfactory to the Township) naming the Township as additional insured in respect of the Services

performed by Emcon. Such insurance shall provide coverage of not less than Five Million Dollars ($5,000,000) inclusive per occurrence for bodily injury, personal injury, death and damage to property including loss of use thereof with property damage deductible of not more than Ten Thousand ($10,000) and including non-owned automobile coverage with blanket contractual liability endorsement. In addition, the policy of liability insurance must contain a cross-liability clause endorsement

And further

That the necessary by-law to authorize the Mayor and Clerk to enter into an agreement be passed under the by-law section of today's meeting.

Carried.

7. Bob Angione, Chief Administrative Officer
   Re: Deposit Return Program Partnership Agreement

R-500-24 Moved by Councillor Flagler
Seconded by Councillor Clement

That the Havelock Belmont Public School – School Council is hereby selected as the community partner for the operation of the Deposit Return Program located at the 6th Line Transfer Station.

Carried.

8. Bob Angione, Chief Administrative Officer
   Re: Committee Appointments 2025-2026

R-501-24 Moved by Councillor Flagler
Seconded by Deputy Mayor Webb

That staff is hereby authorized to proceed with an advertisement to recruit members for three Committees of Council and the Cemetery Board.

Carried.

Correspondence

Action Items

1. Royal Canadian Legion Ontario Command
   Re: Military Service Recognition Book - Business Card Advertisement

R-502-24 Moved by Councillor Doherty
Seconded by Deputy Mayor Webb

That staff is hereby authorized to proceed with the purchase of a Business Card Sized Advertisement in the Military Service Recognition Book in the amount of $395.00 to be paid to the Royal Canadian Legion Ontario Command.

Carried.

2. Ray Abrams, Rural Lynx
Re: Peninsula Road Internet Tower Survey Relief

R-503-24 Moved by Deputy Mayor Webb
Seconded by Councillor Flagler

That the request for financial relief from RuralLynx pertaining to the requirement for a second survey for the location of the internet tower at Lots 15 and 16 Concession 6 having GPS coordinates of 44.651280 and 77.933946 is hereby denied.

Carried.

Information Items

None.

Committee Liaison Reports:

1. Jim Martin, Mayor (Verbal)
Hart Webb, Deputy Mayor (Verbal)
Re: County Council Update

Deputy Mayor Webb provided a summary of the following items that were discussed at County Council:

- The County Warden welcomed approximately 50 new Canadians to tour the Court House. They will also be touring Lang Pioneer Village.
- Dr. Thomas Piggott gave a presentation on Climate Change.
- Chief of Paramedics is looking into the possibly a shared paramedic facility with the Municipality of Trent Lakes.

Mayor Martin was in attendance for an announcement with regards to Economic Development. Rhonda Keenan and Sarah Budd have been hired as part of the County of Peterborough's Economic Development team.

R-504-24 Moved by Councillor Clement
Seconded by Councillor Flagler

That the County Council Update be received for information.

Carried.

2. Bob Angione, Chief Administrative Officer/Clerk
   Re: Councillor Activity Report

R-505-24 Moved by Deputy Mayor Webb
Seconded by Councillor Clement

That the Councillor Activity report be received for information.

Carried.

Written or Oral Notice of Motion or Discussion:

None.

Other Business:

1. Bob Angione, Chief Administrative Officer/Clerk
   Re: Other Business

A draw was held for the Shop Local Contest. The winner of the 10th Shop Local Contest draw is Jess MacKay.

By-Laws:

R-506-24 Moved by Councillor Clement
Seconded by Deputy Mayor Webb

That By-law 2024-071 Being a by-law to authorize the Mayor and Clerk to enter into a Winter Maintenance Services Agreement with Emcon Services Inc. for the provision of certain plowing and sanding/salting winter maintenance services on the Havelock Highway 7 Connecting Link be read a first, second, and third time and finally passed this 1st day of October 2024; and further

That the agreement listed as Schedule A to the by-law be amended to include the following:

1. The statement “THIS AGREEMENT is made as of the 30th day of July 2023” is deleted in its entirety and replace with:

    1. THIS AGREEMENT is made as of the 3rd day of September 2024.

2. Item 5. Insurance is deleted in its entirety and replaced with:

Emcon shall maintain and obtain during the Term of this Agreement commercial general liability insurance (in form satisfactory to the Township) naming the Township as additional insured in respect of the Services performed by Emcon. Such insurance shall provide coverage of not less than Five Million Dollars ($5,000,000) inclusive per occurrence for bodily injury, personal injury, death and damage to property including loss of use thereof with property damage deductible of not more than Ten Thousand ($10,000) and including non-owned automobile coverage with blanket contractual liability endorsement. In addition, the policy of liability insurance must contain a cross-liability clause endorsement.

Carried.

R-507-24 Moved by Deputy Mayor Webb
Seconded by Councillor Flagler

That the meeting recess at 10:42 am.

R-508-24 Moved by Deputy Mayor Webb
Seconded by Councillor Clement

That the meeting resume at 10:57 am.

Closed Session:

R-509-24 Moved by Councillor Clement
Seconded by Deputy Mayor Webb

That the meeting moves in to Closed Session at 10:57 a.m. under authority of Section 239(2) (b) for personal matters about an identifiable individual, including municipal or local board employees.

Carried.

That the meeting rise from Closed Session at 11:47 a.m. and resume in open session.

Business Arising from Closed Session:

The following items were dealt with in the Closed Session Council Meeting.

1. The minutes of the Closed Session Council Meeting held on September 17, 2024 were approved and adopted as presented.
2. A personal matter about an identifiable individual, including municipal or local board employees. (4 items).

Confirming By-Law:

R-510-24 Moved by Councillor Flagler
Seconded by Councillor Clement

That By-law 2024-072, being a By-law to confirm the proceedings of the meeting of the Council of the Corporation of the Township of Havelock-Belmont-Methuen held on the 1st day of October 2024, be read a first, second, and third time and finally passed this 1st day of October 2024.

Carried.

Adjournment:

R-511-24 Moved by Deputy Mayor Webb
Seconded by Councillor Doherty

That this meeting adjourn at 11:49 a.m.

Carried.

Jim Martin, Mayor

Robert V. Angione, Clerk

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: The Mayor and Members of Council

Prepared By: Elena Karakas, Township Planning Consultant

Approved By: Elysia Ackroyd, Township Planning Consultant

Meeting Date: October 15, 2024

Subject: **Application to Amend** Township of Havelock-Belmont-Methuen Comprehensive Zoning By-law 1995-42 (AS AMENDED). Mark Perkin. Lot 15, Concession 3, Belmont Ward.

PURPOSE and EFFECT:

The purpose of this Zoning By-law application is to seek relief from Section 4.37 of the Township's Comprehensive Zoning By-law 1995-42, as amended, to permit the development of a single-detached vacation dwelling.

RECOMMENDATION:

- That subject to any new information or public comments received prior to or at the statutory public meeting, the draft by-law be passed as presented; and
- That the balance of this report be received.

BACKGROUND:

As proposed, the development will consist of the construction of a new single detached residential dwelling with the relocation of a detached sleeping cabin and deck. Currently the property contains an existing seasonal recreational dwelling, sleeping cabin, and two sheds to be demolished.

Owners/Applicants:	Mark Perkin
Property Description:	Lot 15, Concession 3 – Belmont Ward
Municipal Address:	41 Fire Route 8A
Roll Number:	1531-010-003-16700
Lot Area:	1259 square metres (0.31 acres/0.13 hectares)
Type of Planning Approval:	Planning Act, Section 34
Appendix:	Public Meeting Notice GIS Mapping Zoning By-law Amendment Application Site Plan Zoning By-law Amendment CVCA PIF CVCA Permit Peterborough Public Health Unit Septic Permit

Description of Property and Surrounding Lands

The property comprises approximately 1259 square metres (0.31 acres), with approximately 23.4 metres (77 feet) of frontage on Fire Route 30. The property also has approximately 28.8 metres (94.4 feet) of water frontage on Crowe River.

The property in question currently contains a one-storey seasonal recreational dwelling with a deck, two sleeping cabins, and a shed.

The subject property is designated Shoreline in the Township of Havelock-Belmont-Methuen. The subject property is currently zoned “Seasonal Residential (SR)”.

History of Use

The current owners acquired the property in 1977. The property has been used for seasonal recreational purposes since 1957 (67 years).

Proposed Development

The applicant is requesting approval to construct a one and a half-storey single-detached vacation dwelling. The proposed dwelling will have a footprint of approximately 87 square metres (936.4 square feet) with an attached deck on the north side measuring approximately 32.5 square metres (339.8 square feet). Both existing accessory buildings, located in the northeast section of the lot, and the current dwelling are proposed to be demolished. There is a sleeping cabin with an attached deck proposed to be relocated to the east side of the proposed dwelling, with a slightly reduced side yard setback as a result of the narrowness of the property. The sleeping cabin is proposed to be 13.5 square metes in size, inclusive of a 2.8 square metre deck. The new cottage is proposed with a setback of 20.6 metres (67.5 feet) from the high water mark and a minimum side yard setback of 6.21 metres (20.4 feet). The attached deck is proposed to be no closer than 18.2 metres (59.7 feet) from the high water mark, which is also the front yard lot line. The proposed dwelling will have a maximum height of 6.3 metres (20.7 feet), with a lot coverage of 9.5%. The minimum rear yard setback will be 23.7 metres (77.8 feet). The new septic system proposed will be positioned in the rear yard and will comply with the required setback from the high water mark, located 35 metres (114.8 feet) away, meeting the minimum requirement of 30 metres (98.4 feet).

The zoning by-law amendment is proposed to decrease the minimum required setback between the dwelling and the high water mark from 30.0 metres (98 feet) to 20.6 metres (67.5 feet), to decrease the minimum front yard setback from the dwelling from 21.3 metres (70 feet) to 20.6 metres. The attached deck is proposed to be located 18.2 metres from the high water mark and front lot line. An amendment to decrease the minimum side yard setback for a sleeping cabin from 6 metres (20 feet) to 3.3 metres (10.9 feet) is also required. As such, the zoning by-law amendment will specific the required distances from each proposed structure.

PLANNING DISCUSSION:

Provincial Policy Statement (PPS) and Growth Plan for the Greater Golden Horseshoe

The application aligns with both the Growth Plan and the Provincial Policy Statement (PPS, 2020) by supporting resource-based and residential development in Rural Areas while safeguarding significant natural heritage features. The subject property qualifies as a rural use under the PPS, and the proposed seasonal recreational use is consistent with policies for rural areas. The goal of the application is to enhance the enjoyment of the property’s rural character and natural assets along the Crowe River.

Section 2.2.6 of the Growth Plan promotes intensification and residential development to meet housing needs by offering a range of housing options and densities that contribute to the creation of complete communities. These communities are designed to serve both current and future residents. Section 2.2.9.3 allows for rural land uses outside settlement areas if they are compatible with the rural landscape, local land uses, and supported by rural service levels. Furthermore, such development must not negatively impact agricultural or other resource-based uses. This proposal will increase housing availability while maintaining compatibility with the rural surroundings and ensuring it can be adequately serviced.

Section 2 of the PPS emphasizes the protection and enhancement of water features. According to Section 2.2.2, development near sensitive surface water features must protect, restore, or improve these features. The proposed development will be situated away from the sensitive water features on the property, ensuring their protection. While the dwelling is proposed to be located within the high water mark setback, the septic system meets the setback requirements of the zoning by-law amendment and the Ontario Building Code.

The proposed development is located within the floodplain of Belmont Lake and below the designated flood elevation. The Crowe Valley Conservation Authority (CVCA) requires that the dwelling be elevated by at least 0.3 meters from the existing elevation, achieving an elevation of at least 188.8 meters above sea level, which is the flood elevation for Belmont Lake. The mitigation measures mandated by the CVCA will result in overall site improvements and reduce the risks associated with flooding and erosion hazards. This approach aligns with Section 3.1 of the Provincial Policy Statement (PPS), which addresses unacceptable risks to public health, safety, and property damage, ensuring that the development will not exacerbate existing natural hazards.

Overall, the application is in alignment with the Growth Plan and is consistent with the PPS.

2024, Provincial Planning Statement

On August 20*th* 2024, the Ontario government released the Provincial Planning Statement 2024 (2024 PPS), coming into effect on October 20*th*, 2024. The 2024 PPS will replace the 2020 PPS and introduces changes that will apply to all Planning Act decisions made after the date it comes into force. This application was submitted prior to October 20th, and is being recommended for approval before this date as well. However, for interest and consistency sake, the 2024 PPS is briefly discussed herein.

The 2024 PPS provides policy direction on matters of provincial interest related to land use planning and development. Notably, the 2024 PPS sets out policies to increase the supply and mix of housing options in Ontario while maximizing investments in infrastructure and public service facilities and protecting natural areas, agricultural uses and sensitive areas. Section 2.6.1.b) of the 2024 PPS specifically speaks to the permission of resource-based recreational uses, including recreational dwellings not intended as permanent residences (as is proposed). Section 4.1.1 emphasizes the protection of natural features and systems. The proposed development is consistent with Section 4.1.1, as an improved setback to the waterfront is being proposed, and the new septic system will meet the minimum setback requirements from the shore, ensuring that natural features remain safeguarded.

Overall, the application is in alignment with the 2024 Provincial Planning Statement

County of Peterborough Official Plan

As per the County of Peterborough Official Plan, the site is designated as “Shoreland Area and the Waterfront.” The Plan permits residential land uses in these areas while promoting the protection and restoration of natural heritage features.

The County Official Plan emphasizes that development along the shoreline should complement, rather than dominate, the natural landscape, and encourages providing access to the waterfront for both public and private users where appropriate. The proposed development aligns with the rural character and scale of surrounding residential uses, with the height of the one-storey dwelling meeting the zoning by-law requirements.

Although the amended setback from the high-water mark is reduced, it will have minimal impact on the shoreline, as the current dwelling is closer to the water than the proposed new development. Additionally, the proposed project has the support of the CVCA, ensuring it does not exacerbate existing natural hazards. The amended side yard setback also maintains the intent of the Shoreland Area and Waterfront designation, as the existing dwelling has a smaller side yard setback. In our opinion, the application complies with the County’s Official Plan.

Township of Havelock-Belmont-Methuen Official Plan

According to the Official Plan, the site is designated ‘Shoreline’. Both seasonal and permanent residential uses are permitted within the Shoreline Designation as outlined within the Plan.

Policies within the Plan direct development to have minimal visual, environmental, and navigational impact within the Shoreline designation. The Plan also promotes low density shoreline development, enhanced setbacks from the high-water mark, and the maintenance of existing vegetation/tree coverage. Section 3.3.2.2. of the Official Plan states that the preservation and protection of the appearance of the shoreline in a natural vegetated state shall be encouraged.

A corresponding objective in the Official Plan includes *'ensuring that the built form along the shoreline is not overly concentrated or dominating to the detriment of the natural form'*.

The Plan directs that the shoreline area and its unique physical and environmental attributes are to be protected; while also recognizing the contribution of the shoreline area to leisure and recreation, as well as economic benefits resulting from tourism and recreational property development.

Although the development is proposed within the 30-metre high water mark setback, the redevelopment of the site will result in an overall improvement. The existing cottage is 10.3 metres from the high water mark, and the existing deck is approximately 7 metres from the high water mark. As the new cottage will be over 20 metres from the high water mark, and the new deck will be over 18 metres from the high water mark, the proposed development has desirable outcome aligned with the policies of the Official Plan. Of important note, the septic tank will be fully outside of the setback to the high water mark.

The height of the building is proposed to be 6.4 metres, being about a storey and a half. The height will provide sufficient space for the seasonal recreational dwelling without visually impacting Crowe River.

In our opinion, the application conforms to the policies of the Township's Official Plan.

Township of Havelock-Belmont-Methuen Comprehensive Zoning By-law No. 1995-42 (as amended)

According to Schedule 'A1' of the Township's Comprehensive Zoning By-law No. 1995-42 (as amended) the subject property is currently zoned 'Seasonal Residential (SR) Zone' in its entirety. If approved, the application will serve to rezone the subject lot to 'Special District 286 (S.D. 286)'.

Section 4.11 of the zoning by-law states that a lot must have frontage on an improved public street or navigable waterway order to support the development of any building or

structure, unless the lot is zoned Seasonal Residential (SR) Zone. The site is in the Seasonal Residential (SR) Zone and has frontage on Fire Route 8A – a private lane – and on a navigable portion of the shoreline of Crowe River. It is not anticipated that access to the site via Fire Route 8A will impact the functionality of the proposed development.

Relief is requested from the required setback from the high water mark, as stated in Section 4.37 of the zoning by-law:

> *Subject to the exceptions contained in the Marine Facility and Yard and Setback Encroachment provisions contained in this By-law, where a lot abuts a waterbody, no building or structure shall be located within 30.0 metres (100 feet) of the existing high water mark.*

The proposal would have the effect of reducing the minimum setback from the high water mark from 30.0 metres (100 feet) to 20.6 metres (67.5 feet). The deck is proposed to be located at 18.2 metres from the high water mark. Since the existing dwelling is situated even closer to the high water mark of Crowe River, the proposed development represents an improvement over the current structure. Additionally, the septic system will maintain the required 30.0 metre (100 feet) setback.

The front yard on this property is the yard located between the proposed dwelling and the shore of Crowe River. The required front yard setback is 21.3 metres (70 feet), while the proposed front yard setback is 20.6 metres (67.5 feet). As such, an amendment to the front yard setback is also requested as part of the subject application.

The new sleeping cabin proposed on the site will replace the two existing sleeping cabins to be demolished. The property is quite narrow, with side yard setbacks to the principal dwelling met, but without much extra room. To ensure sufficient setback between the principal dwelling and the proposed sleeping cabin, and to improve the overall setbacks to the shore, the new proposed sleeping cabin is located 3.3 metres from the easterly side lot line. One of the existing sleeping cabins is located 1.6 metres from the east side lot line, while the other sleeping cabin is currently located 4.6 metres from the east side lot line. Both existing sleeping cabins are located closer to the shoreline than each the proposed new cottage and proposed new sleeping cabin. Overall, the reduction in side lot line distance is acceptable, given the mass improvements resulting from the proposed development.

Accordingly, the proposed zoning by-law amendment being submitted for Council's consideration includes site-specific relief for the setback to the high water mark and the front lot line, and relief for the side yard setback to a sleeping cabin.

Following our review and assessment of this application within the context of relevant land use planning policies; it is our opinion that the subject application conforms to the

Growth Plan, County of Peterborough Official Plan, Township of Havelock-Belmont-Methuen Official Plan and is consistent with the Provincial Policy Statement.

COMMENTS:

Staff Comments:
None received at the time of report preparation.

Agency Comments:
The CVCA has issued a permit for the proposed development, indicating that the basis for CVCA approval has been met. The CVCA has been circulated on this application, as well.

Public Comments:
Should any additional comments be received prior to the October 15, 2024 meeting of Council, they will be brought forward at that time.

FINANCIAL IMPACT:

There are no financial impacts unless Council's consideration respecting the approval or refusal of the requested amendment is appealed to the Ontario Land Tribunal. In the event of an appeal, there could be costs, some of which may be recovered from the applicant.

All of which is submitted for Council’s consideration.

Submitted by:

Elena Karakas	Elysia Ackroyd, MCIP RPP
Planning Consultant	Planning Consultant

Date Received: RECEIVED
Fee Received: 350.-
Roll No.: AUG 30 2024

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN
APPLICATION FOR AMENDMENT
TO ZONING BY-LAW 1995-42 (AS AMENDED)
(UNDER SECTIONS 34, 36 AND 39 OF THE PLANNING ACT)

1. APPLICANT/AGENT INFORMATION:

1.1 Name of Owner(s): Mark Perkin

1.2

Address [redacted]

[redacted] Postal Code [redacted]

Telephone Number: [redacted] ber: (____) ____ -_____

E-Mail Address: [redacted]

(An owner's authorization is required in Section 9.1, if the applicant is not the owner.)

1.3 Name of Applicant/Agent: NA
(if different from owner)
Address: _____

_____ Postal Code _____

Telephone Number: (____) ____ -_____ Fax Number: (____) ____ -_____

E-Mail Address: _____

1.3 Communication should be sent to: Owner ☒ Applicant ☐ or to the following:

_____

Address: _____

_____ Postal Code _____

Telephone Number: (____) ____ -_____ Fax Number: (____) ____ -_____

E-Mail Address: _____

1.4 Mortgages, charges and other encumbrances (if known):
(Provide the following information for any mortgages, charges or other encumbrances in respect of the subject land.)

Name: NA

Address: _____

_____ Postal Code _____

Telephone Number: (____) _____ -_____ Fax Number: (____) _____ -_____

2. LOCATION OF THE SUBJECT LAND: *(Complete applicable lines)*

2.1 Geographic Municipality/Township or Village: Belmont

Concession Number(s) 3 Lot Number(s): 15

Registered Plan Number:_____ Lot(s)/Block(s): _____

Reference Plan Number:_____ Part Number(s): Pin 28235 0171 (LT)

Road/Street Number and Name: #41 Fire Rd. 8A

Attach survey plan, if available.

2.2 Are there any easements or restrictive covenants affecting the subject land?
Yes ☐ No ☒

If Yes, describe the easement or covenant and its effect:

_____

_____

3. PURPOSE OF APPLICATION:

3.1 PROPOSED ZONING:

Change Schedule _____ from _____ to _____ Zone(s)

Textual Change to Section(s) _____of By-Law

3.2 REASON: (*Purpose of the proposed amendment)*
Demolish the existing cottage, one bunkie and replace with a new cottage. the new cottage can not meet the required setbacks of the Seasonal Residential Zone.

4. DESCRIPTION OF SUBJECT LAND:

4.1 DESCRIPTION OF LAND SUBJECT TO REZONING:

Frontage: 23.47 m Depth: 54.4 m
Area: 4130.65 sq.m 0.413065 ha

Existing Use(s) of the subject land: Seasonal cottage

Length of Time the existing uses of the subject land have continued:
Approx. 67 years

4.2 Date subject land was acquired by current owner: 1977

4.3 EXISTING BUILDINGS OR STRUCTURES: Please identify each existing building on the sketch and provide information for each building. (If more than one building, attach a separate sheet to this application.)

Building 1
Type Wood structure 1 storey Date Constructed 1960's

Existing Use Cottage Date Existing Use Commenced _____

Ground Floor Area* 57.6 Gross Floor Area ** 57.6

Front lot line setback 10.3 Rear lot line setback 34.6

Interior side lot line setback 2.44 Exterior side lot line setback NA

Building Height 4.87 Dimensions 9.5 x 6.0

No. of Units NA Gross Floor Area Per Unit _____

Loading Spaces
(commercial/industrial uses) _____ Parking Spaces 4

4.4 NATURE OF PROPOSED DEVELOPMENT: Please provide the information for each proposed building (If more than one building, attach a separate sheet to this application. If a proposed plan showing location of proposed buildings is available, please attach.)

Proposed Use(s) of the subject land: Seasonal cottage replacement

Building 1
Type wood frame

Ground Floor Area* 86.4 Gross Floor Area ** 86.4

Front lot line setback 22.3 Rear lot line setback 23.47

Interior side lot line setback 7.69 Exterior side lot line setback _____

Building Height 6.3 Dimensions 9.14 x 9.4

No. of Units _____ Gross Floor Area Per Unit _____

Loading Spaces
(commercial/industrial uses) _____ Parking Spaces _____

* Ground Floor Area means the area that the building occupies on the ground.

** Gross Floor Area means the sum of the area of each floor of the building counting each floor at or above ground level (not basement or cellar) based on the exterior dimensions of the building.

5. SERVICES:

5.1 ACCESS is/will be provided to the subject land by: *(check appropriate space)*

		Maintenance	
Provincial Highway	☐	Public	☐
Municipal Road	☐	Private	☒
Private Road	☒	Year Round	☐
Right of Way	☐	Seasonal	☐
Unopened Road Allowance	☐	Unmaintained	☐
Other Public Road (specify) _____	☐		
Water Access	☐		

WATER ACCESS – where access to the subject land is only by water:

Docking Facilities (specify) _____ Parking Facilities (specify) _____
Distance from Subject Land _____ Distance from Subject Lands _____
Distance from Nearest Public Road _____

5.2 WATER SUPPLY is provided to the subject land by: *(check appropriate space)*

Publicly-owned/operated piped water system	☐
Privately-owned/operated individual well	☐
Privately-owned/operated communal well	☐
Lake or other water body	☒
Other means *(specify)* _____	☐

5.3 SEWAGE DISPOSAL is provided to the subject land by: *(check appropriate space)*

Publicly-owned/operated sanitary sewage system	☐
Private individual septic tank	☒
Public-owned/operated communal sewage system	☐
Private communal sewage system	☐
Privy	☐
Other means *(specify)* _____	☐

(A certificate of approval for the septic system from the District Health Unit submitted with this application will facilitate the review.)

5.4 STORM DRAINAGE is provided to the subject land by: *(check appropriate space)*

Sewers	☐
Ditches	☐
Swales	☒
Other means *(specify)* _____	☐

5.5 OTHER: *(check if the service is available)*

Electricity	☒	School Bussing	☐
Telephone	☒	Garbage Collection	☐
Recycling	☐		

6. HISTORY OF THE SUBJECT LAND:

6.1 If this application is a re-submission of a previous rezoning application, describe how it has been changed from the original application.

NA

6.2 Has there ever been an industrial or commercial use on the subject land or adjacent land? Yes ☐ No ☐ Unknown ☐

If YES, please specify the use. _____

6.3 Has the grading of the subject land ever been changed by adding earth or other material? Yes ☐ No ☐ Unknown ☐

6.4 Has a gas station ever been located on the subject property or adjacent land? Yes ☐ No ☐ Unknown ☐

6.5 Has there been gasoline or other fuel stored on the subject land or adjacent land? Yes ☐ No ☐ Unknown ☐

6.6 Is there reason to believe the subject land may have been contaminated by former uses on the site or adjacent site? Yes ☐ No ☐ Unknown ☐

7. MINIMUM DISTANCE SEPARATION

7.1 For applications that are within 500 metres of an agricultural barn the following additional information must also be provided. Applicants should discuss this application with or obtain information from the owner/operator of the agricultural operation.

Distance from proposed lot or use to nearest barn(s): _____
Housing capacity of barn(s): _____
Type of livestock kept on farm containing nearest barn: _____
Number of tillable hectares on farm containing nearest barn: _____

7.2 NOTICE TO APPLICANTS

Should the location of the property which is the subject of this application be within the Wellhead Protection Area for the Havelock Municipal Well System then you are required to include a Section 59 Notice; in order to have your application deemed 'complete' in accordance with the Planning Act.
Please contact: Terry Cox, Otonabee Region Conservation Authority
Email: tcox@otonabeeconservation.com Tel: 705-745-5791 Ext. 219

8. AFFIDAVIT OR SWORN DECLARATION

I, Mark Perkin of the [redacted]

in the [redacted] make oath and say (or solemnly declare) that the information contained in this application is true and that the information contained in the documents that accompany this application in respect of the application is true.

Sworn (or declared) before me at the TOWNSHIP OF HAVELOCK-BELMONT-METHUEN, in the COUNTY OF PETERBOROUGH this 30TH day of AUGUST, 2024.

Commissioner of Oaths
Robert Angione, Clerk,
a Commissioner, etc., for the
Township of Havelock-Belmont-Methuen

Applicant

Applicant

9. AUTHORIZATIONS

9.1 CONSENT OF THE OWNER(S) FOR APPLICANT TO MAKE APPLICATION

If the applicant is not the sole owner of the land that is the subject of this application, the written authorization of the owner(s), that the applicant is authorized to make the application, must be included or the authorization set out below must be completed by the owner(s).

I/WE,_____ am/are the owner(s) of the land that is the subject of this application and I/We authorize_____ to make this application on my/our behalf and to provide any of my/our personal information that will be included in this application or collected during the processing of the application.

Date Signature of Owner

Date Signature of Owner

9.2 CONSENT OF OWNER TO ENTER UPON SUBJECT LANDS

I/WE, Mark Perkin, HEREBY AUTHORIZE THE Township of Havelock-Belmont-Methuen Council and/or their agents/representative(s) to attend upon the lands subject of this application.

X _____ _____
Signature of Applicant Signature of Witness

9.3 CONSENT OF THE OWNER(S) TO THE USE AND DISCLOSURE OF PERSONAL INFORMATION

I/WE, _____, am/are the owner(s) of the land that is the subject of this application for zoning amendment and for the purposes of the Freedom of Information and Protection of Privacy Act I/we authorize and consent to the use by or the disclosure to any person or public body of any personal information that is collected under the authority of the Planning Act for the purposes of processing this application.

Sept 9/24 _____
Date Signature of Owner

_____ _____
Date Signature of Owner

Personal information contained on this form, collected pursuant to the *Planning Act*, will be used for the purpose of responding to the initial application. Questions should be directed to the Freedom of Information and Privacy Coordinator at the institution conducting the procedures under the Act.

10. SKETCH PLAN: The application must be accompanied by a sketch showing the following:

- the boundaries and dimensions of the subject land;
- the location, size and type of all existing and proposed buildings and structures on the subject land; indicating the distance of the buildings or structures from the front, rear and side lot lines;
- the boundaries and dimensions of land that abuts the subject property, or any land owned by the owner of the subject land and that abuts the subject land;
- the location, size and type of all existing and proposed buildings and structures on abutting lands, indicating the distance of the buildings or structures from the front, rear and side lot lines;
- the distance between the subject land and the nearest township lot line or landmark, such as a railway crossing or bridge;

- the location of all land previously severed from the parcel originally acquired by the current owner of the subject land;
- the approximate location of all natural and artificial features on the subject land and adjacent lands that in the opinion of the applicant may affect the application, such as buildings, abandoned or active railways, roads, watercourses, drainage ditches, river or stream banks, wetlands, wooded areas, wells and septic tanks and tile beds;
- the existing use(s) on adjacent lands;
- the location, width and name of any roads within or abutting the subject land, indicating whether it is an unopened road allowance, a public travelled road, a private road or a right-of-way;
- if access to the subject land is by water only, the location of the parking and boat docking facilities to be used;
- the location and nature of any easement affecting the subject land;
- all present entrances onto the subject property;
- if there are agricultural buildings capable of housing animals within 500 metres of the proposed lot, then the location of these buildings must be shown on the sketch.

Measurements on the sketch **SHALL** correspond to those identified in the application. Photocopies of your survey, if you have one, should be used. If no survey is available, a detailed hand-drawn sketch to scale is acceptable.

In some cases, it may be appropriate to obtain professional services to determine the accuracy of your property dimensions.

11. ACKNOWLEDGEMENT

Any complete submitted application must be accompanied by a deposited fee of $1,500.00 in cash or cheque made payable to the Treasurer of the Township of Havelock-Belmont-Methuen.

I/We enclose herewith the requisite deposit fee of $1,500.00 and by virtue of signature(s) hereon as the applicant agree to pay any further costs incurred by the Township in the processing of the application.

Sept. 9/24
Date

Signature of Owner

Date

Signature of Owner

FOR OFFICE USE ONLY

1. Is application deemed complete? **Yes** ☐ **No** ☐

   Date: _____

2. What is the current Official Plan designation(s) of the subject lands?

   _____

   _____

3. Does application conform to both the County and Township Official Plan?

   Yes ☐ **No** ☐

   If no, describe nature of non-conformity.

   _____

   _____

4. Is the application consistent with both the Provincial Policy Statement and Growth Plan for the Greater Golden Horseshoe?

   Yes ☐ **No** ☐

5. Are any of the following uses or features on the subject land or within 500 metres (1,640 ft.) of the subject land? (*check the appropriate boxes, if any apply)*

USE OR FEATURE	On Subject Land	or	Within 500 m
Livestock Facility, Stockyard or Manure Storage Facility	☐		☐
Active or Closed Landfill Site	☐		☐
Sewage Treatment or Waste Stabilization Plant	☐		☐
Provincially Significant Wetland	☐		☐
Floodplain	☐		☐
Active Airport	☐		☐
Commercial Use *(specify)* _____	☐		☐
Industrial Use _____	☐		☐
Municipal Use *(specify)* _____	☐		☐

6. Is the proposed Zoning By-law Amendment compatible with adjacent/surrounding land uses?

Yes ☐ **No** ☐

If no, describe nature of incompatibility.

_____

_____

7. Is the site considered suitable for the intended us (physical characteristics such as topography, drainage soils, wet areas, access)?

Yes ☐ **No** ☐

If no describe nature of issues.

_____

_____

8. Whether the subject lands are the subject of any other application under the *Planning Act*:

	Yes	**No**
Plan of Subdivision	☐	☐
Consent	☐	☐
Official Plan Amendment	☐	☐
Minister's Zoning Order	☐	☐

July 1, 2023

Receipt

Township Of Havelock-Belmont-Methuen
1 Ottawa St E P.O. Box 10
Havelock, ON K0L 1Z0

Receipt Number: 0303998
Receipt Date: 2024-08-30
Receipt Amount: 1,500.00

MARK PERKIN

Description	Item Amount	Qty	Amount
General			
ZONING FEE	1,500.00	1.00000	1,500.00
		Receipt Amount:	1,500.00
		PAYMENT BY CHEQUE	1,500.00

Official Receipt

Per _____

Tax Reg.:

Note: This receipt is not valid until the payment has cleared.

E&OE

TOPOGRAPHIC PLAN OF SURVEY OF
PART OF LOT 15
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF BELMONT
TOWNSHIP OF HAVELOCK–BELMONT–METHUEN
COUNTY OF PETERBOROUGH

SCALE 1 : 150
KEVIN R. D. SMITH, O.L.S.

COORDINATES ON NON RECTILINEAR BOUNDARIES		
POINT No.	NORTHING	EASTING
107	4931786.1	277226.5
108	4931786.2	277222.2
109	4931789.5	277219.8
110	4931789.6	277217.8
111	4931788.5	277217.0
114	4931788.5	277215.8
115	4931786.2	277215.8
116	4931784.0	277213.4
117	4931782.8	277209.0
118	4931780.0	277204.0
119	4931780.6	277201.2

OBSERVED REFERENCE POINTS (ORPs) DERIVED FROM STATIC GNSS OBSERVATIONS, BASELINE POST PROCESSED FROM LEICA REFERENCE STATION– LAKEFIELD, UTM ZONE 18, NAD83 (CSRS) v7.1 EPOCH 2010. COORDINATES TO RURAL ACCURACY PER SEC. 14 (2) OF O.REG. 216/10.

POINT ID	NORTHING	EASTING
ORP A	4931723.45	277103.11
ORP B	4931729.28	277236.50
ORP C	4931779.28	277202.16

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

NOTES

BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY STATIC GNSS OBSERVATIONS, SHOWN HEREON, BEARING OF N87°30'15"E, REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 18 (75° WEST LONGITUDE) NAD 83 (CSRS) v7.1 EPOCH 2010. GNSS BASELINE POST PROCESSED FROM LEICA REFERENCE STATION – LAKEFIELD.

FOR BEARING COMPARISONS, A ROTATION OF 1°59'45" CLOCKWISE WAS APPLIED TO BEARINGS ON PLANS P1 & P2, AND A ROTATION OF 7°05'45" COUNTER–CLOCKWISE WAS APPLIED TO BEARINGS ON D1 & D2.

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 1.0001864.

BUILDING TIES ARE TAKEN TO FACE OF FRAME SIDING

BUILDING TIES ARE PERPENDICULAR TO PROPERTY LINES, UNLESS OTHERWISE NOTED

PROPERTY LINES ARE UNFENCED, UNLESS OTHERWISE NOTED.

FENCES ARE LOCATED ON PROPERTY LINES, UNLESS OTHERWISE NOTED.

TIES SHOWN TO THE WATER'S EDGE OF CROWE RIVER ARE AT RIGHT ANGLES TO THE TRAVERSE LINE, UNLESS OTHERWISE NOTED.

ORTHOMETRIC HEIGHTS ARE DERIVED FROM GNSS OBSERVATIONS POST PROCESSED FROM LEICA BASE STATION–LAKEFIELD AND THE HTv2 GEOID MODEL.

LEGEND

SYMBOL	:	DENOTES
□		SURVEY MONUMENT PLANTED
■		SURVEY MONUMENT FOUND
SSIB		SHORT STANDARD IRON BAR 25mm x 25mm x 60cm
SIB		STANDARD IRON BAR 25mm x 25mm x 120cm
IB		IRON BAR 15mm x 15mm x 60cm
IP		0.025ø IRON PIPE
Wit.		WITNESS
MEAS.		MEASURED
R.		ROTATED
Calc.		CALCULATED
P1		PLAN OF SURVEY BY W.A. BENINGER O.L.S. DATED OCTOBER 31, 1970 ON FILE IN THE OFFICE OF P.A. MILLER SURVEYING LTD. (file Belmont–23).
P2		PLAN 45R–1388
P3		PLAN 45R–1120
D1		INSTRUMENT R157561
D2		INSTRUMENT R90403
FNE		FOUND NO EVIDENCE
O/H		OVERHEAD
UP		UTILITY POLE
CGVD28		CANADIAN GEODETIC VERTICAL DATUM 1928 [1978]
R/W		RIGHT OF WAY
Dst'd		DISTURBED
×188.33		SPOT HEIGHT
—X—		CHAIN LINK FENCE
(873)		W.A. BENINGER, O.L.S.
(P&P)		PIERCE & PIERCE INC.

SURVEYOR'S CERTIFICATE

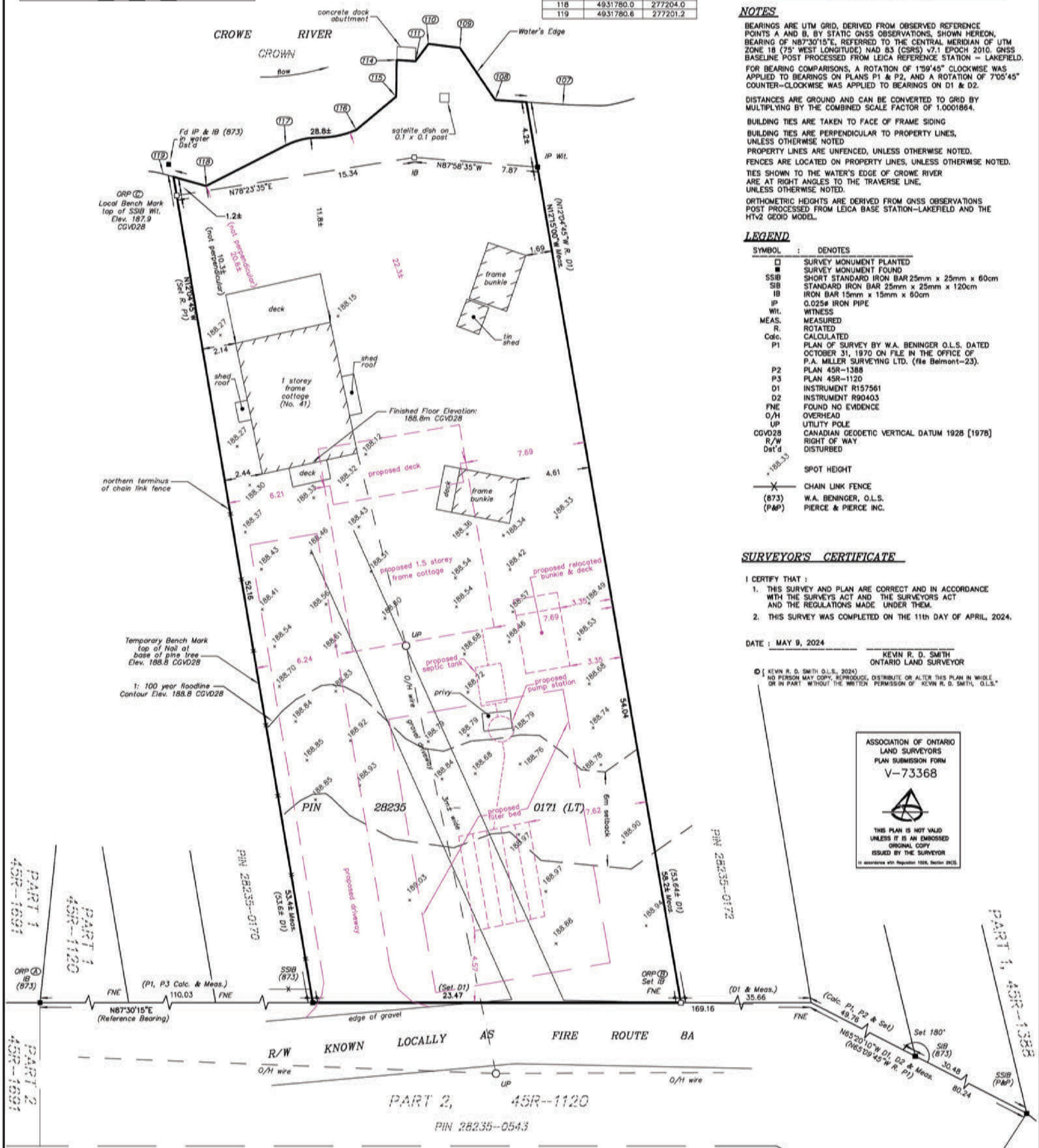
I CERTIFY THAT :

1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT AND THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THIS SURVEY WAS COMPLETED ON THE 11th DAY OF APRIL, 2024.

DATE : MAY 9, 2024 — KEVIN R. D. SMITH, ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V–73368

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

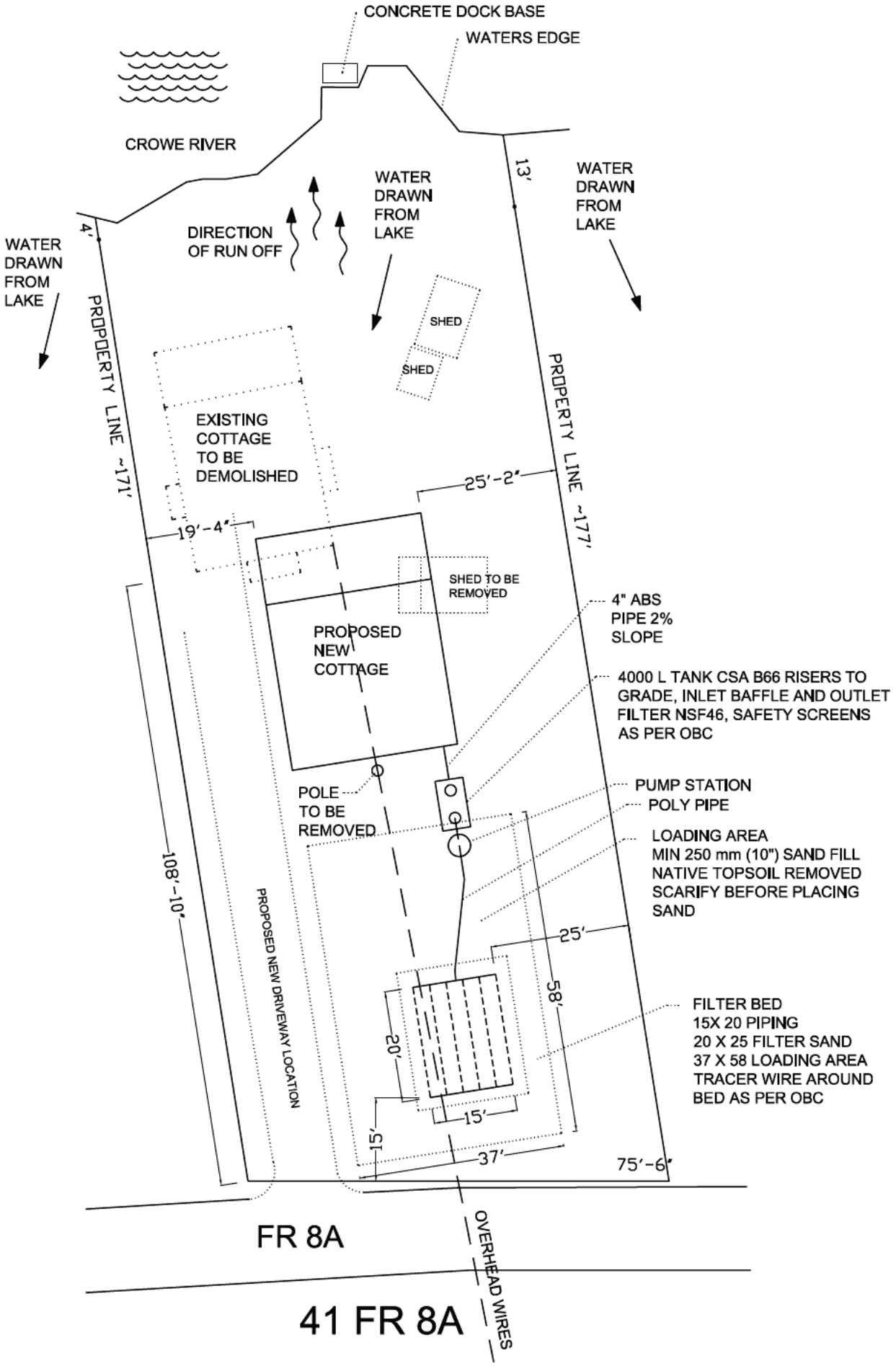


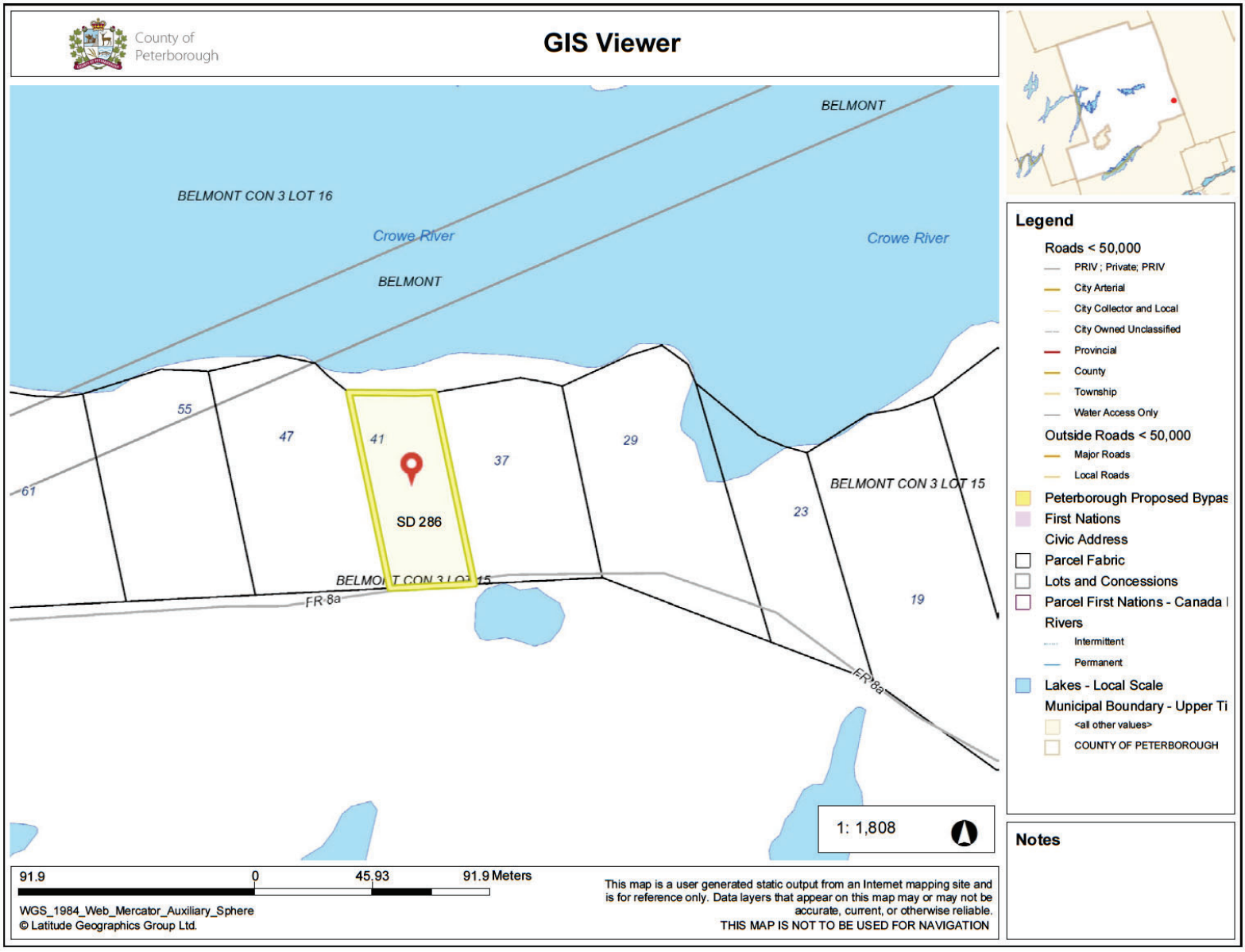
REV #	DATE	NOTES
1	Aug. 22/24	Added proposed septic system and driveway, proposed relocation of bunkie

METRIC DISTANCES AND COORDINATES ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

P. A. MILLER SURVEYING LTD.
ONTARIO LAND SURVEYOR
P. O. BOX 520
STIRLING
(613) 395–3070

24–11815rev1


CONCRETE DOCK BASE
WATERS EDGE
CROWE RIVER
WATER DRAWN FROM LAKE
DIRECTION OF RUN OFF
WATER DRAWN FROM LAKE
WATER DRAWN FROM LAKE
4'
13'
PROPERTY LINE ~171'
PROPERTY LINE ~177'
SHED
SHED
EXISTING COTTAGE TO BE DEMOLISHED
25'-2"
19'-4"
SHED TO BE REMOVED
PROPOSED NEW COTTAGE
4" ABS PIPE 2% SLOPE
4000 L TANK CSA B66 RISERS TO GRADE, INLET BAFFLE AND OUTLET FILTER NSF46, SAFETY SCREENS AS PER OBC
POLE TO BE REMOVED
PUMP STATION
POLY PIPE
LOADING AREA
MIN 250 mm (10") SAND FILL
NATIVE TOPSOIL REMOVED
SCARIFY BEFORE PLACING SAND
108'-10"
PROPOSED NEW DRIVEWAY LOCATION
25'
58'
20'
15'
15'
37'
FILTER BED
15X 20 PIPING
20 X 25 FILTER SAND
37 X 58 LOADING AREA
TRACER WIRE AROUND BED AS PER OBC
75'-6"
FR 8A
OVERHEAD WIRES
41 FR 8A


County of Peterborough
GIS Viewer
BELMONT
BELMONT CON 3 LOT 16
Crowe River
Crowe River
BELMONT
55
47
41
37
29
61
SD 286
BELMONT CON 3 LOT 15
23
19
FR 8a
FR 8a
BELMONT CON 3 LOT 15
1: 1,808
Legend
Roads < 50,000
PRIV ; Private; PRIV
City Arterial
City Collector and Local
City Owned Unclassified
Provincial
County
Township
Water Access Only
Outside Roads < 50,000
Major Roads
Local Roads
Peterborough Proposed Bypas
First Nations
Civic Address
Parcel Fabric
Lots and Concessions
Parcel First Nations - Canada
Rivers
Intermittent
Permanent
Lakes - Local Scale
Municipal Boundary - Upper Ti
<all other values>
COUNTY OF PETERBOROUGH
Notes
91.9
0
45.93
91.9 Meters
WGS_1984_Web_Mercator_Auxiliary_Sphere
© Latitude Geographics Group Ltd.
This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

29 August 2024

Mark Perkin
[redacted]

Crowe Valley Conservation

P.O. Box 416
70 Hughes Lane
Marmora, ON
K0K 2M0

Phone: (613) 472-3137
Fax: (613) 472-5516
www.crowevalley.com

APPROVED PERMIT APPLICATION NO. 113/24

For the proposed tear down of a dwelling, tin shed and bunkie, reconstruction of a dwelling, and installation of a septic system along Crowe River.
The property is located at 41 Fire Route 8A; Part of Lot 15, Concession 3; Township of Havelock-Belmont-Methuen.
ARN: 1531 010 003 16700

ATTENTION:

IT IS IMPORTANT THAT YOU READ AND UNDERSTAND THE CONTENTS OF THIS LETTER. YOU AND ANY CONTRACTOR(S) MUST BE AWARE OF ALL SPECIFIED CONDITIONS AND MITIGATION REQUIREMENTS. **THIS PERMIT IS VALID FOR TWO YEARS FROM THE DATE ISSUED.**

The above reference property has been reviewed with regard to Ontario Regulation 41/24 Prohibited Activities, Exemptions and Permits, pursuant to the **Conservation Authorities Act**, R.S.O. 1990.

A review of the application and information provided indicated that the subject property is within the CVCA's regulated area due to the shoreline of Belmont Lake/Crowe River and the associated flood hazard, as well as the presence of a wetland less than two hectares (ha). Every application is assessed on a site-specific basis on its own merits, while accounting for cumulative impacts on the Crowe Valley watershed.

As per the application information provided (received 04 July 2024), the proposal is to tear down a dwelling, tin shed, and bunkie, replace the existing dwelling and install a new septic system.

DOCUMENTS SUBMITTED AND REVIEWED WITH THE APPLICATION

- Revised Permit Application (Received 12 August 2024)
- Site Plan and Septic Plans (prepared by J Sheaff, Trent Hills Septic Services; dated 4 July 2024)
- Revised Detailed Drawings (prepared by Michael Fraser, MT Engineering & Design; dated March 9, 2024; pages 1-7; received 12 August 2024)
- Photographs of the property
- Plan of Survey (prepared by P.A. Miller Surveying Ltd., dated May 9 2024)
- Phone correspondence dated 29 August 2024

PROPOSAL DETAILS

The proposed development activates include tearing down an one storey cottage, tin shed and old existing bunkie. Replace with a one storey cottage with an uncovered deck and the installation a new septic system for the new cottage.

Proposed Dwelling:

- The existing dwelling is 20 feet by 31 feet for a total footprint of 620ft^2.
- The existing dwelling is single storey on blocks.
- The existing dwelling is 34 feet from the ordinary High Water Mark (HWM) of Crowe River.
- The existing uncovered deck is 10 feet by 20 feet for a total footprint of 200ft^2.
- The existing deck is 24 feet from the ordinary HWM of Crowe River.
- The proposed dwelling is 30 feet by 31 feet for a total footprint of 930ft^2.
- The proposed dwelling will be one storey on concrete frost wall and a 3-inch concrete slab foundation.
- The dwelling will be raised 0.3m above the Regulatory flood elevation of Belmont Lake (188.80masl CGDV 1928).

- The dwelling will be 20 feet 4 inches from the west property line, 25 feet 3 inches from the east property line, and approximately 76 feet from the roadway.
- The dwelling will be 70 feet from the ordinary HWM of Crowe River.
- The proposed deck will be 12 feet by 30 feet for a total footprint of 360ft^2.
- The proposed deck will be uncovered.
- The proposed deck will be 61 feet from the ordinary HWM of Crowe River.
- The existing single storey bunkie is 9 feet by 12 feet and will be raised and relocated beside the new dwelling.
- The bunkie will be 89 feet the ordinary HWM of Crowe River.

Proposed Septic System:

- The new tank will be 4,000L in size.
- The proposed new raised septic system will have a bed of 20 feet by 25 feet for a total footprint of 500ft^2.
- The bottom of the runs for the septic bed will be at the regulatory flood elevation of Belmont Lake (188.80masl CGDV 1928).
- The septic system will contain the following materials:
    - 2.5 feet (750mm) of filter sand
    - 12 inches (300m) of stone
    - Geotextile material over the stone layer
    - 8 inches (200mm) of sand or native material
    - 4 inches (100mm) of top soil
- No in-water works required.

Proper silt fencing must be installed in accordance with site conditions; please see condition #7 below. The fencing must be installed between the construction area, the wetland and Crowe River to prevent sediment and contaminants from entering the water. Any stockpiled materials should be adequately contained. The silt fencing must be inspected regularly and repaired as needed. If difficult terrain is encountered, wooden stakes should be upgraded to metal t-posts. If fencing appears to be failing, reduce post spacing or upgrade to heavy-duty design (OPSD 219.130). Alternatives, including a combination of staked/weighted silt sock and/or hay bales may be used. Please discuss any alternative solutions with the CVCA.

BASIS FOR CVCA APPROVAL

- The proposed activity is not likely to affect the control of flooding.
    - The proposed development is outside of the wetland setback for wetlands less than 2ha.
    - The proposed dwelling will be raised 0.3m above the Regulatory flood elevation of Belmont Lake/Crowe River (188.80masl CGDV 1928) and floodproofed as per CVCA Policy.
    - The bottom of the runs for the septic bed will be at or above the regulatory flood elevation of Belmont Lake/Crowe River (188.80masl CGDV 1928).
    - The proposed development meets size limitation requirements as per CVCA Policy.
- The proposed activity is not likely to affect the control of erosion.
- The proposed activity is not likely to affect the control of unstable soil or bedrock.
- The proposed activity is not likely to create conditions or circumstances that, in the event of a natural hazard, might jeopardize the health or safety of persons or result in the damage or destruction of property.

CONDITIONS OF PERMISSION

Based on the information submitted, the application has been approved in principle provided the following conditions are met. The proponent(s) must:

1. Meet all required Municipal requirements and setbacks as well as have any necessary approval, if required, from the Chief Building Inspector before any work can be done and establish with the Municipality as to the rights of the shoreline allowance.
2. Ensure all works are constructed as per submitted documentation and any subsequent information provided.
3. Ensure this permit is posted on the property during construction.

4. Notify the Authority at the start and completion of the project in order for staff to perform inspections.
5. Make all contractors involved in any activities related to the proposed works aware of these conditions.
6. Sediment and erosion control must be installed prior to any work taking place and remain in place for the duration of the works and until the site has stabilized. Construction materials must be adequately contained to prevent contamination of any nearby waterbody/wetland. Any disturbed areas must be reseeded and left to vegetate naturally.
7. Adhere to the following Sediment and Erosion Control Requirements:
    a. Sediment and erosion control measures must be implemented before, during and after the work phase to prevent entry of sediment into the water.
    b. For works above the shoreline install heavy-duty silt fencing in accordance with OPSD 219.130.
    c. For shallow water conditions 0.2m (8" or less), install heavy-duty silt fencing in accordance with OPSD 219.130.
    d. **If the depth of the water exceeds 0.2m (8"), a turbidity curtain must be used in accordance with OPSD 219.260.**

        A turbidity curtain is continuous geotextile fabric suspended from a floatation device on the water surface, held in vertical position by a ballast and weight at the bottom.
    e. The applicant and any person doing work must monitor sediment and erosion controls daily, and repair or upgrade as necessary to ensure they remain effective during all types of flow and storm events.
    f. Sediment and erosion control measures must remain in place until the site has stabilized.
8. Ensure any areas cleared of vegetation are stabilized and allowed to naturally revegetate. The Authority may inspect the conditions before finalizing construction.
9. Ensure that construction will not be undertaken during periods of high flow or flooding, or during the spring runoff. This will minimize erosion and simplify construction.
10. Ensure that drainage will not have a negative impact on neighbouring properties. Ensure that drainage is not concentrated and is not directed to an area prone to erosion. Drainage should be directed to gradually sloped, well-vegetated areas.
11. Ensure only clean fill be used.
12. Ensure all excavated material and any construction debris (e.g. large pieces of wood, garbage, stumps, excess fill) is removed from the CVCA regulated area.
13. Ensure that all fill stored on site at any phase of construction is isolated by appropriate sediment and erosion controls and wildlife exclusion barriers (especially sand or dirt piles that would encourage turtle nesting during late May to early July).
14. Ensure that all activities that could result in any debris, rubble, concrete or other deleterious substance entering the water are performed in a designated controlled area away from the water.

You are reminded that the granting of this permit does not remove your responsibility to obtain any necessary additional permits from other agencies or government bodies. It is also important to note that this permit does not override any other permit or setback requirements from other agencies. In the case of a conflict between setback requirements the most restrictive applies.

Please be advised that any departure from these conditions and the submitted documentation without prior written approval from the CVCA will constitute a violation of this permit and may result in legal action in accordance with Section 30.5 of the *Conservation Authorities Act*. Should your plans change regarding the specifications and location of the projects described please contact this office for an amendment to be issued accordingly.

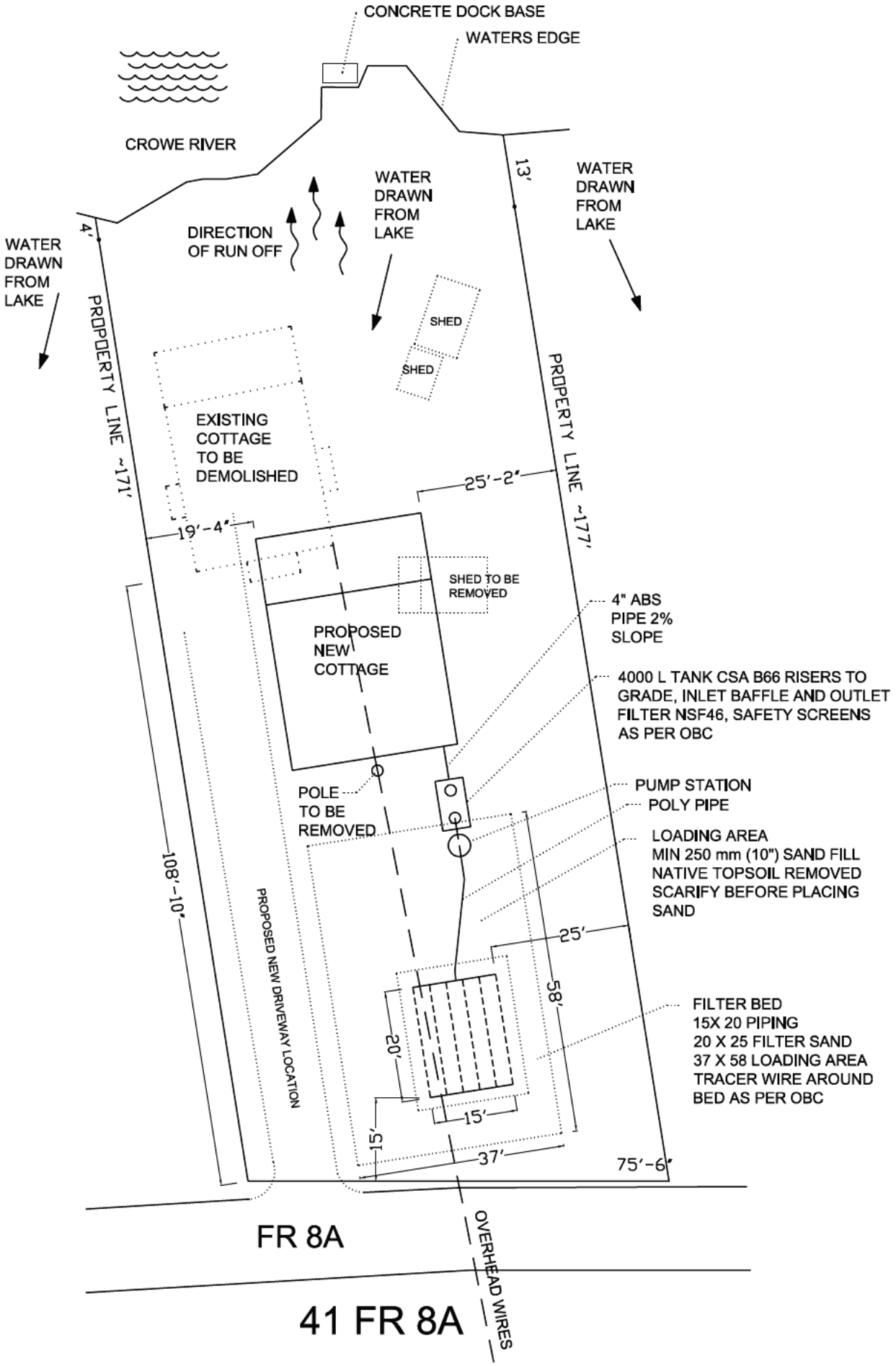
If you object to any conditions of this permit letter you may request a hearing in front of the Crowe Valley Conservation Authority Board of Directors. The hearing will be at a Board meeting after your request for a hearing has been submitted. After the hearing, written reasons for the decision will be provided. Any person who has been refused permission or who further objects to conditions imposed on the permission may, within 30 days of receiving the reasons, appeal to the Ontario Land Tribunal.

Please do not hesitate to contact this office if you require further assistance.

Best regards,

Kelsey Davidson
Regulations Officer
Crowe Valley Conservation Authority

CC:
Travis Toms – Chief Building Official, Township of Havelock-Belmont-Methuen (email)
Sonia Aaltonen – Building and Planning Administrative Assistant, Township of Havelock-Belmont-Methuen (email)
Dale Theriault - Deputy Chief Building Official, Township of Havelock-Belmont-Methuen (email)


CONCRETE DOCK BASE
WATERS EDGE
CROWE RIVER
WATER DRAWN FROM LAKE
DIRECTION OF RUN OFF
WATER DRAWN FROM LAKE
WATER DRAWN FROM LAKE
4'
13'
PROPERTY LINE ~171'
PROPERTY LINE ~177'
SHED
SHED
EXISTING COTTAGE TO BE DEMOLISHED
25'-2"
19'-4"
SHED TO BE REMOVED
PROPOSED NEW COTTAGE
4" ABS PIPE 2% SLOPE
4000 L TANK CSA B66 RISERS TO GRADE, INLET BAFFLE AND OUTLET FILTER NSF46, SAFETY SCREENS AS PER OBC
POLE TO BE REMOVED
PUMP STATION
POLY PIPE
LOADING AREA
MIN 250 mm (10") SAND FILL
NATIVE TOPSOIL REMOVED
SCARIFY BEFORE PLACING SAND
108'-10"
PROPOSED NEW DRIVEWAY LOCATION
25'
58'
20'
15'
15'
37'
FILTER BED
15X 20 PIPING
20 X 25 FILTER SAND
37 X 58 LOADING AREA
TRACER WIRE AROUND BED AS PER OBC
75'-6"
FR 8A
OVERHEAD WIRES
41 FR 8A

TOPOGRAPHIC PLAN OF SURVEY OF
PART OF LOT 15
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF BELMONT
TOWNSHIP OF HAVELOCK–BELMONT–METHUEN
COUNTY OF PETERBOROUGH

SCALE 1 : 150
KEVIN R. D. SMITH, O.L.S.

5m 0 1 2 3 4 5 10m

COORDINATES ON NON RECTILINEAR BOUNDARIES		
POINT No.	NORTHING	EASTING
107	4931786.1	277226.5
108	4931786.2	277222.2
109	4931789.5	277219.8
110	4931789.6	277217.8
111	4931788.5	277217.0
114	4931788.5	277215.8
115	4931786.2	277215.8
116	4931784.0	277213.4
117	4931782.8	277209.0
118	4931780.0	277204.0
119	4931780.6	277201.2

OBSERVED REFERENCE POINTS (ORPs) DERIVED FROM STATIC GNSS OBSERVATIONS, BASELINE POST PROCESSED FROM LEICA REFERENCE STATION– LAKEFIELD, UTM ZONE 18, NAD83 (CSRS) v7.1 EPOCH 2010. COORDINATES TO RURAL ACCURACY PER SEC. 14 (2) OF O.REG. 216/10.

POINT ID	NORTHING	EASTING
ORP A	4931723.45	277103.11
ORP B	4931729.28	277236.50
ORP C	4931779.28	277202.16

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

NOTES

BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS A AND B, BY STATIC GNSS OBSERVATIONS, SHOWN HEREON, BEARING OF N87°30'15"E, REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 18 (75° WEST LONGITUDE) NAD 83 (CSRS) v7.1 EPOCH 2010. GNSS BASELINE POST PROCESSED FROM LEICA REFERENCE STATION – LAKEFIELD.

FOR BEARING COMPARISONS, A ROTATION OF 1°59'45" CLOCKWISE WAS APPLIED TO BEARINGS ON PLANS P1 & P2, AND A ROTATION OF 7°05'45" COUNTER–CLOCKWISE WAS APPLIED TO BEARINGS ON D1 & D2.

DISTANCES ARE GROUND AND CAN BE CONVERTED TO GRID BY MULTIPLYING BY THE COMBINED SCALE FACTOR OF 1.0001864.

BUILDING TIES ARE TAKEN TO FACE OF FRAME SIDING

BUILDING TIES ARE PERPENDICULAR TO PROPERTY LINES, UNLESS OTHERWISE NOTED

PROPERTY LINES ARE UNFENCED, UNLESS OTHERWISE NOTED.

FENCES ARE LOCATED ON PROPERTY LINES, UNLESS OTHERWISE NOTED.

TIES SHOWN TO THE WATER'S EDGE OF CROWE RIVER ARE AT RIGHT ANGLES TO THE TRAVERSE LINE, UNLESS OTHERWISE NOTED.

ORTHOMETRIC HEIGHTS ARE DERIVED FROM GNSS OBSERVATIONS POST PROCESSED FROM LEICA BASE STATION–LAKEFIELD AND THE HTv2 GEOID MODEL.

LEGEND

SYMBOL	:	DENOTES
□		SURVEY MONUMENT PLANTED
■		SURVEY MONUMENT FOUND
SSIB		SHORT STANDARD IRON BAR
SIB		STANDARD IRON BAR 25mm x 25mm x 120cm
IB		IRON BAR 15mm x 15mm x 60cm 25mm x 25mm x 60cm
IP		0.025ø IRON PIPE
Wit.		WITNESS
MEAS.		MEASURED
R.		ROTATED
Calc.		CALCULATED
P1		PLAN OF SURVEY BY W.A. BENINGER O.L.S. DATED OCTOBER 31, 1970 ON FILE IN THE OFFICE OF P.A. MILLER SURVEYING LTD. (file Belmont–23).
P2		PLAN 45R–1388
P3		PLAN 45R–1120
D1		INSTRUMENT R157561
D2		INSTRUMENT R90403
FNE		FOUND NO EVIDENCE
O/H		OVERHEAD
UP		UTILITY POLE
CGVD28		CANADIAN GEODETIC VERTICAL DATUM 1928 [1978]
R/W		RIGHT OF WAY
Dst'd		DISTURBED
×188.33		SPOT HEIGHT
×—×—×		CHAIN LINK FENCE
(873)		W.A. BENINGER, O.L.S.
(P&P)		PIERCE & PIERCE INC.

SURVEYOR'S CERTIFICATE

I CERTIFY THAT :

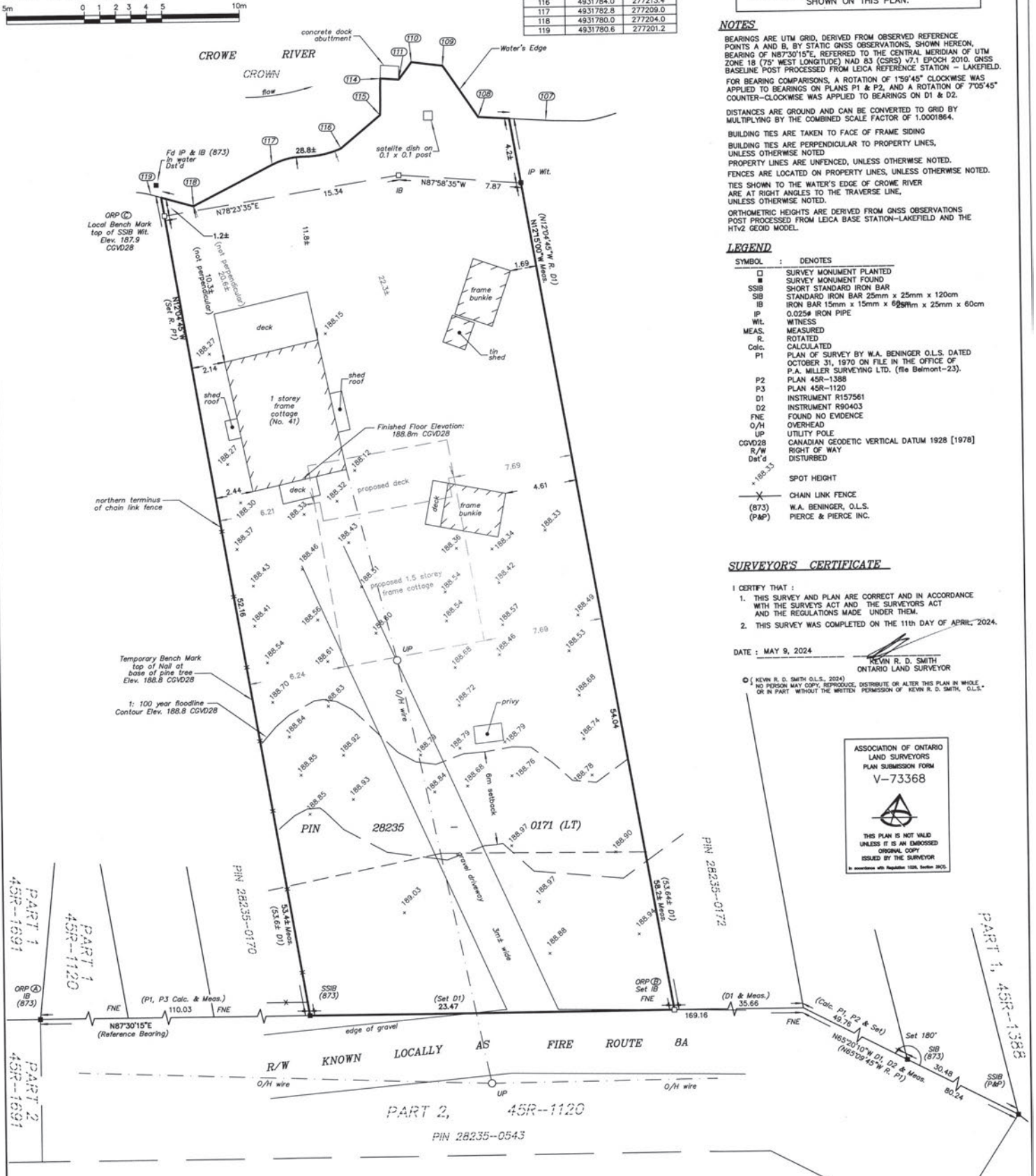
1. THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT AND THE SURVEYORS ACT AND THE REGULATIONS MADE UNDER THEM.
2. THIS SURVEY WAS COMPLETED ON THE 11th DAY OF APRIL, 2024.

DATE : MAY 9, 2024

KEVIN R. D. SMITH
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V–73368

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



METRIC DISTANCES AND COORDINATES ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

P. A. MILLER SURVEYING LTD.
ONTARIO LAND SURVEYOR
P. O. BOX 520
STIRLING
(613) 395-3570
24–11815

Peterborough Public Health

185 King Street
Peterborough, Ontario K9J 2R8
Telephone (705) 743-1000 - Fax (705) 743-1203

For Office Use Only:
Application #
BEL-24-20
Date Received
7/10/2024
Receipt #
936807

Building Permit for Construction of Sewage System

Owner

Last Name **Perkin** Initial **M**
Address [redacted]
City/Town [redacted] PC [redacted]
Home Telephone: [redacted]
Office Telephone

Agent

Name **Trent Hills Septic** Initial
Address **249 Bridge St West**
City/Town **Campbellford** PC **K0L 1L0**
Home Telephone **(705) 741-9606**
Office Telephone

Installer

Installer: Trent Hills Septic Serv.
Address: 249 Bridge St West
City: Campbellford PC K0L 1L0
Telephone :

Designer

Designer: Trent Hills Septic
Address: 249 Bridge Street W
City: Trent Hills PC: K0L 1L0
Telephone: (705) 741-9606

Description Of Property

County/District **Peterborough** Munic/Twp **Belmont** Address **41 Fire Route 8A**
Plan - Roll No. - Lot -
Concession - Sublot - Lot Area
Building Use: **Residential**

Installation Information

Propose To **Construct** a class **4** sewage system for the purpose of **New Construction**

Number of Bedroom/Motel Units	4	Floor Area:	100 sq/m
Number of Flush Toilets	2	Number of Tubs/Showers	2
Number of Wash Basins	2	Number of Laundry Tubs	0
Number of Dishwashers	1	Number of Washing Machines	1
Number of Kitchen Sinks	1	Other (specify):	

Water Supply

Municipal Water Source Water Supply: **Proposed** Well Type **Lake** Depth of Casing:

Inspection Data

Bed System Type:: **filter**
Contact Area **47 m²**
Filter Bed Area: **26.6 m²**
MODEL:
Severance Application Number
Length of Distribution Pipe **m**
Working Capacity (L) **4500**
Inspection Date **9/11/2024** Inspector: **C. Stevens**
COMMENTS:

Rock and GWT | Depth | Soil Type

HWT@0.6m

Depth	Soil Type
0	0-0.3m TS
0.25	0.3-0.6m
0.50	Sand Silt
0.75	
1.0	
1.25	
1.5	

Permeability

Of Existing Soil **14** min/cm
On Basis of Fill min/cm

Conditions for approval and reasons where proposal not acceptable:

Permit issued to facilitate construction. Install fully raised sewage system. Increase minimum horizontal clearance distances to distribution pipe by 3 metres. Install as per Ontario Building Code. Please be advised that Peterborough Public Health is currently working through divestment of services and activities related to Part 8 of the Ontario Building Code, Sewage Systems. The current agreement for services with local municipalities expires on November 17, 2024 and will not be renewed. For more information, visit www.peterboroughpublichealth.ca/SafeSewage.

Application is Approved and this Building Permit under Section 8 of the Building Code Act is hereby issued for the proposal outlined above provided that the sewage system shall be completed and a Notice of Inspection issued within 24 months of the issue or such extended period as the Chief Building Official allows.

Inspected and recommended by: C. Stevens FOR Issued: Chief Building Officer Julie Ingram Date: **9/11/2024**

NOTICE OF COMPLETE APPLICATION AND A PUBLIC MEETING CONCERNING A ZONING BY-LAW AMENDMENT

TAKE NOTICE that the Corporation of the Township of Havelock-Belmont-Methuen is in receipt of an application for a Zoning By-law Amendment for certain lands located in Part Lot 15, Concession 3, with municipal address of 41 Fire Route 8A in the Belmont Ward, on Crowe River; bearing the Assessment Roll Number (ARN) 1531-010-003-16700.

As required under subsection 34 (10.4) and 34 (10.7) of the *Planning Act,* R.S.O. 1990, as amended, Council of the Township of Havelock-Belmont-Methuen has deemed this application to be "Complete".

TAKE FURTHER NOTICE that the Council of the Corporation of the Township of Havelock-Belmont-Methuen will hold a public meeting on **October 15th, 2024** at **9:30 a.m.** to consider a proposed Zoning By-law Amendment under Section 34 of the *Planning Act*, R.S.O., 1990, as amended. **The Public Meeting will be held in hybrid fashion (in-person and electronically).**

If you wish to participate in the meeting in real time, please contact the Clerk, Bob Angione, by email at BAngione@hbmtwp.ca **no later than 12:00 p.m. (noon) on the day prior to the scheduled meeting** and you will be provided with an invitation to join the meeting using your computer or phone.

The Municipality is using Zoom for electronic meetings. The application can be downloaded to either a computer or cell phone. It is recommended that you test the program in advance of the meeting. Meetings will also be recorded and made available on YouTube for public viewing as soon as possible following the meeting.

We would encourage you to communicate with Council by forwarding written comments in support or opposition of the application to BAngione@hbmtwp.ca or to P.O. Box 10, 1 Ottawa Street East, Havelock, ON K0L 1Z0.

PURPOSE AND EFFECT:

The subject lands are currently zoned "Seasonal Residential (SR) Zone". The application as proposed would change the zone category on the subject lands to "Special District 286 (S.D. 286) Zone" in order to permit the redevelopment of the lot with a new single detached vacation dwelling, while also introducing certain site-specific regulations.

A KEY MAP showing the lands to which this application applies is provided with this notice.

ANY PERSON may attend the public meeting and/or make verbal or written representation either in support of or in opposition to the proposed Amendment. Written submissions in respect of the proposed Amendment should be directed to the Clerk of the Township of Havelock-Belmont-Methuen.

If a person or public body would otherwise have an ability to appeal the decision of the Council of the Corporation of the Township of Havelock-Belmont-Methuen to the Local Planning Appeal Tribunal but the person or public body does not make oral submissions at a public meeting or make written submissions to the Township of Havelock-Belmont-Methuen before the by-law is passed, the person or public body is not entitled to appeal the decision.

If a person or public body does not make an oral submission at the public meeting or make written submissions to the Township of Havelock-Belmont-Methuen before the by-law is passed, the person or public body may not be added as a party to the hearing of an appeal before the Local Planning Appeal Tribunal unless, in the opinion of the Tribunal, there are reasonable grounds to do so.

NOTIFICATION:

P.O. Box 10, 1 Ottawa St. E., Havelock, ON K0L 1Z0
P: 705.778.2308 or 1.877.767.2795 I F: 705.778.5248 I E: havbelmet@hbmtwp.ca

If you wish to be notified of the decision of the Council of the Township of Havelock-Belmont-Methuen on the proposed zoning by-law amendment, you must make a written request to the Clerk of the Township of Havelock-Belmont-Methuen at the address below.

ADDITIONAL INFORMATION:

Additional information and material related to the proposed by-law will be available for public inspection on the Township website as of the date of the posting of this notice. Anyone wishing to obtain additional information with respect to this application is requested to direct enquiries to Sonia Aaltonen, Planning Assistant at 705-778-2308 or saaltonen@hbmtwp.ca.

DATED at the Township of Havelock-Belmont-Methuen this 25th day of September 2024.

Mr. Robert Angione, M.P.A., B. Admin,
Chief Administrative Officer
Municipal Clerk
Township of Havelock-Belmont-Methuen
P.O. Box 10, 1 Ottawa Street East
Havelock, ON K0L 1Z0
(705) 778-2308
(705) 778-5248 (fax)

HBM TOWNSHIP OF HAVELOCK - BELMONT - METHUEN INC. 1998	**KEY MAP**	TOWNSHIP OF Havelock-Belmont-Methuen (Methuen Ward)

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Chairman and Members of Committee of Adjustment

Prepared By: Elysia Ackroyd, MCIP RPP; HBM Township Planning Consultant

Meeting Date: October 15th, 2024

Subject: **Minor Variance Application A-14-24**

Subject Property

Property Owner(s):	Kirk Thomas
Municipal Address:	9351 County Road 30
Roll Number:	1531-010-001-02100
Lot(s):	Part Lot 3
Concession(s):	9
Area:	1.98 hectares (4.89 acres)
Zoning:	Local Commercial 1 Zone (C1)
Official Plan:	Rural
Ward:	Methuen

PURPOSE and EFFECT:

The purpose of this Minor Variance application is as follows (required relief is to the Township of Havelock-Belmont-Methuen's Comprehensive Zoning By-law 1995-42, as amended):

1. **Seek relief from Section 4.27(a) having the following effect(s):**
   - **i. Reducing the minimum required number of parking spaces from 72 parking spaces to 2 parking spaces.**

The above relief is to permit the following changes on the subject property:

1. **The provision of a self-storage facility in the rear of the existing property.**

RECOMMENDATION:

That Minor Variance application A-14-24 be ***approved*** with the following conditions:

- The balance of the information in this report be received.

ANALYSIS:

The applicant is seeking to develop a self-storage facility on the site, which is a permitted use. The purpose of this application is to permit a reduction to the required parking for the self-storage use from the required 72 parking spaces to 2 parking spaces.

On September 17th, 2024, the Committee of Adjustment voted to defer the decision on the application, with a request to the applicant to review the proposed development for opportunities to provide more parking than proposed.

Following the deferral, the agent for the applicant, DM Wills, has reviewed video footage from the September 17th Committee meeting to review the questions, comments, and requests of members of the public and of the Committee of Adjustment.

DM Wills has submitted a response to the comments provided. The summary of the agent's response is that the reduction of the parking spaces is justified by the minimal traffic anticipated to be generated by the proposed, permitted use, and that support for the reduction was provided by the consulting traffic engineer. The response also confirms that a chain link fence is proposed at the entrance of the property.

The street on which the subject site fronts is a County Road. Therefore, Peterborough County has been circulated on this application submission, and was present during the pre-application meeting. Peterborough County requested the Traffic and Parking Study submitted, which was supportive of the development as proposed. Township staff have not received any further correspondence from the County regarding the application.

Township staff maintain our recommendation to approve the application as proposed. The Traffic and Parking Study has been conducted and submitted as required by the County, and supports the reduction in parking proposed. Staff expect that the nature of the proposed use will result in temporary in-laneway parking, directly outside of an individual client's storage locker, for ease of access. The applicant anticipates that only one person will be employed at the subject site, and given the nature of the use, they will not be present onsite unless periodically required. As such, the 2 parking spaces proposed to be separately delineated from the laneways throughout the site are anticipated to fulfill the needs of the proposed use.

Township staff can confirm that the concerns regarding fencing of the property are not directly related to the subject application to reduce parking.

Staff reiterate our professional planning opinion that the application meets the tests of a minor variance, is consistent with the Provincial Policy Statement and the Growth Plan for the Greater Golden Horseshoe, and conforms with the Township Official Plan.

COMMENTS

None received at the time of report preparation.

FINANCIAL IMPACT

A decision respecting the application is appealable to the Ontario Land Tribunal; for which any costs incurred by the Municipality may be recoverable from the applicant.

Respectfully submitted,

_____

Elysia Ackroyd, MCIP RPP
Planning Consultant
Township of Havelock-Belmont-Methuen

Appendix A – MV Application
Appendix B – Site Plan
Appendix C – GIS Mapping
Appendix D – Stormwater Management Report
Appendix E – Site Entrance Assessment Brief
Appendix F – Planning Cover Letter
Appendix G – Planning Staff Report for September 17th Meeting
Appendix H – Technical Response

WILLS

PARTNERS IN ENGINEERING, PLANNING & ENVIRONMENTAL SERVICES

September 26, 2024

Township of Havelock-Belmont-Methuen
1 Ottawa Street East, P.O. Box 10
Havelock, ON
K0L 1Z0

Via email: c/o Elysia Ackroyd – Fotenn Planning & Design (ackroyd@fotenn.com)

Re: Minor Variance Application
Thomas Self Storage Facility c/o. Thomas Kirk
9351 County Road 30, Havelock
D.M. Wills Associates Project No. 22-85312

D.M. Wills Associates Limited (Wills) is pleased to submit this response letter for comments received through the Township of Havelock-Belmont-Methuen Committee of Adjustment (Minor Variance Applications) held on September 17th, 2024. The comments contained within the response letter are related to the Minor Variance Application for a reduction in the required parking for the proposed development of a Self-Storage Facility located at 9351 County Road 30, in the Township of Havelock.

The purpose of this response letter is to address comments heard from members of Council and the public at the September 17th Committee of Adjustment meeting in order to proceed with a decision on the proposed Minor Variance, at the next schedule Committee of Adjustment meeting.

1.0 Comments Received

The following comments were received and documented during the Committee of Adjustment Meeting have been included in this submission for Technical Adequacy Review:

- Tree Inventory and Protection Plan
- List of submitted drawings and reports (see format requirements under Planning Comments below)

Comment Received By: Ivonne – Owner of 9370 County Road 30, Havelock	**Response Provided By:** Marnie Saunders – Applicant Senior Planner - D.M. Wills Ltd.
1. Traffic concerns regarding	1. As shown in Site Entrance & Traffic Assessment, the maximum number of

additional traffic generated from proposed use.	trips to be generated is seven vph during the a.m. or p.m. peak hours including both entering and exiting trips. These seven trips are minimal and form about 3% and 4% of the anticipated northbound and southbound volumes in 2033, respectively. Accordingly, the trips generated will not have any impact on the adjacent CR 30 section and will not require any auxiliary lanes including both right and left turning lanes. The County of Peterborough Road department have reviewed the assessment as the road is a County Road and deemed the conclusions and recommendations acceptable.
Comment Received By: Craig Basaraba – Owner of 9323 County Road 30 Havelock	**Response Provided By:** Marnie Saunders – Applicant Senior Planner - D.M. Wills Ltd.
1. Concerns about the reduced permeable area on the subject property.	1. As indicated by the Townships consultant, a SWM report has been prepared to address the change in permeable land on the Subject Property. A SWM pond and low impact development measure have been incorporated into the design to implement required mitigation measures. The SWM report and design has been reviewed and accepted as part of the Site Plan Control process.
2. Concerns over the lack of proposed "barricade" and privacy incorporated into the design. Comments related	2. A new chain link fence and entrance gate are proposed as part of the proposed self storage facility. There is also planting proposed between the existing residential use and the proposed commercial use on the

to security, trespassing and privacy were raised.	Subject Property as required by the Zoning Bylaw.
Comment Received By: Councillor Dougherty – Council Member	**Response Provided By:** Marnie Saunders – Applicant Senior Planner - D.M. Wills Ltd.
1. Concerns over only two parking spaces provided.	1. The Township Zoning Bylaw only requires parking space per 2 employees or fraction thereof. The use will only have 1 employee that will not be onsite full time. Therefore this provision would only require 1 parking spaces for the proposed use. The Township Zoning Bylaw requires; The greater of: 1 parking space per 2 employees or fraction thereof; or 1 parking space per 4 persons design capacity or fraction thereof or 1 parking space per 37 square metres (400 square feet) of gross floor area The intent of the ZBL is to ensure that there is an adequate amount of parking spaces for the proposed use of the property whether it be for the use of the owner, occupant, or other persons entering upon or making use of the premises (4.27 (a)). As outlined in the traffic report, a maximum of seven vehicles will enter or exit the property during peak hours, resulting in the required number of 72 parking spaces being overly abundant. More specifically the traffic generated from persons entering the property will not required parking as they will park in front of the storage unit they are visiting.

	Site Entrance & Traffic Assessment was included in the submission material provided in support of the Minor Variance Application.

Should anything further be required, please do not hesitate to contact the undersigned. We otherwise look forward to receiving a response to the requested exemption.

Written By:

Marnie Saunders, BES, CPT.
Senior Land Use Planner

MS/xx

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Chairman and Members of Committee of Adjustment

Prepared By: Elysia Ackroyd, MCIP RPP; HBM Township Planning Consultant

Meeting Date: September 17th, 2024

Subject: **Minor Variance Application A-14-24**

Subject Property

Property Owner(s):	Kirk Thomas
Municipal Address:	9351 County Road 30
Roll Number:	1531-010-001-02100
Lot(s):	Part Lot 3
Concession(s):	9
Area:	1.98 hectares (4.89 acres)
Zoning:	Local Commercial 1 Zone (C1)
Official Plan:	Rural
Ward:	Methuen

PURPOSE and EFFECT:

The purpose of this Minor Variance application is as follows (required relief is to the Township of Havelock-Belmont-Methuen's Comprehensive Zoning By-law 1995-42, as amended):

1. **Seek relief from Section 4.27(a) having the following effect(s):**
   - **i. Reducing the minimum required number of parking spaces from 72 parking spaces to 2 parking spaces.**

The above relief is to permit the following changes on the subject property:

1. **The provision of a self-storage facility in the rear of the existing property.**

RECOMMENDATION:

That Minor Variance application A-14-24 be ***approved*** with the following conditions:

- The balance of the information in this report be received.

ANALYSIS:

The subject parcel is located on the east side of, and with frontage on, County Road 30. The parcel currently contains an existing residential dwelling. The building previously functioned as a restaurant. The existing dwelling unit is approximately 167.67 square metres (1804 square feet) in size. A detached garage is also located on the site, comprising 155 square metres. The applicant is seeking to develop a self-storage facility on the site, which is permitted by the C1 Zone. The purpose of this application is to permit a reduction to the required parking for the self-storage use from the required 72 parking spaces to 2 parking spaces.

Peterborough County was present during the pre-application meeting for the development, as the property fronts onto County Road 30. The application for minor variance has also been circulated to the County.

The property is located on County Road 30 and is surrounded by the following uses:

Direction	Land Use
North	Rural and Environmental Protection
South	Commercial and Agricultural
East	Rural and Environmental Protection
West	Rural

This application is subject to the four tests of a Minor Variance, as outlined in the Planning Act. The tests are as follow:

1. **Is this application "minor" in nature?**

   The purpose of this application is to permit a reduction to the required parking to support the proposed commercial use. The self storage facility is not anticipated to generate significant vehicle traffic given the anticipated intensity and frequency of the use. A site assessment brief was provided that confirms that low traffic is anticipated to be generated by the new permitted use. The determination of whether an application is minor in nature is not a mathematical calculation. Rather, it is determined by whether the cumulative impacts of the requested relief result in a minor impact on the subject and surrounding land uses. Based on the nature of the proposed use, the size and context of the site, and the results of the supporting studies submitted, staff are of the opinion that the requested relief is minor. Aside from the relief being sought through this application, all other provisions of the Zoning By-law are being maintained.

Therefore, this application is considered minor in nature.

2. Is the application desirable and appropriate?

The proposed use is permitted by the existing Local Commercial zoning on the site. County Road 30 and the surrounding area are developed with similar commercial and rural uses which are compatible with the proposed development. The continued ability to use this property for residential purposes as well as introduce a new, permitted use is a function of sufficient lot size, appropriate separation between uses, and general compliance with the zoning by-law. The development represents an efficient use of an existing parcel, and no negative impacts are anticipated to be generated as a result of the reduction in parking.

This application is deemed both desirable and appropriate for the site.

3. Does this application conform to the Intent of the Official Plan?

The Township Official Plan designation for the subject property is ***Rural***. Under Section 3.1.2., a variety of uses that are rural in nature, including rural residential uses and commercial and industrial uses, are permitted.

Section 3.1.3. provides policies that guide the development of each residential and commercial/industrial uses on lands designated Rural. Section 3.1.3.2 b) specifically includes permissions for self storage facilities on Rural lands. Section 3.1.3.2. d) continues, with provisions that relate specifically to commercial and industrial uses in the Rural designation:

> "d) The following specific policies shall apply to commercial and industrial uses in the Rural designation, in addition to conforming to the relevant policies of this Plan:
>
> i) The intended use shall be appropriate for the proposed location and compatible with surrounding land uses;
> ii) Commercial and industrial uses will be encouraged to locate in clusters adjacent to other non-residential development;
> iii) No access will be permitted from a Municipal "Local" road and any access shall be in accordance with the policies of Section 4.2.1 of this Plan;
> iv) Adequate off-street parking and loading spaces shall be provided;
> v) Advertising and signage will be appropriately controlled;
> vi) Outdoor storage of goods and materials shall be adequately screened or buffered;
> vii) Standards and requirements of the Ministry of Environment shall be maintained in respect of odour, noise or smoke emissions;

viii) All new development shall comply with the Minimum Distance Separation Formula 1, as amended;
ix) Commercial and industrial uses may be subject to site plan control."

The proposed use is permitted and compatible with the established uses surrounding the site. Access is proposed on County Road 30, and a reasonable parking minimum has been demonstrated by the supporting studies, including the site assessment brief and planning letter submitted. Outdoor storage is proposed in a reasonable and compliant manner, being located in the rear of the property. The development is subject to a site plan control application which is being reviewed concurrently with this application for minor variance. It is the Township's planning opinion that this application conforms to the spirit and intent of the Township's Official Plan.

4. **Does this application conform to the Intent of the Zoning Bylaw?**

The subject parcel is currently zoned Local Commercial 1 (C1) Zone. The C1 Zone permits a range of commercial uses, including the proposed self storage facility.

All of the provisions of the By-law are being adhered to, with the exception of the item requiring relief stated in the *Purpose and Effect* section of this report. The variance sought is appropriate for the proposed use.

This application, as proposed, therefore maintains the spirit and intent of the Township's Zoning By-law.

This application satisfies the four tests of the minor variance. Additionally, this application must satisfy the Provincial Policy Statement (PPS) and the Growth Plan for the Greater Golden Horseshoe. The following policies are applicable:

Provincial Policy Statement

Section 1 of the PPS provides direction for the creation of strong, healthy and vibrant communities. The efficient use of land is supported through sustainable development patterns which consider the needs of communities, the environment, public health, safety, and economic growth. This section will address those policies which are relevant to the proposed development.

"Section 1.1.1 – Healthy, liveable and safe communities are sustained by

(a) Promoting efficient development and land use patterns which sustain the financial well-being of the province and municipalities over long term
(b) Accommodating an appropriate affordable and market-based range and mix of residential types (including single-detached, additional residential units, multi-unit

housing, affordable housing and housing for older persons), employment (including industrial and commercial), institutional (including places of worship, cemeteries and long-term care homes), recreation, park and open space, and other uses to meet long-term needs

(c) Avoiding development and land use patterns which may cause environmental or public health and safety concerns

Section 1.1.5.4 – Development that is compatible with the rural landscape and can be sustained by rural service levels should be promoted."

The subject property is a rural use per the PPS, and the existing and proposed uses are consistent with the policies for rural lands. The purpose of this application is to support the development of a commercial use that is compatible with the rural landscape of and surrounding the subject property. This application conforms to the intent of the PPS.

Growth Plan for the Greater Golden Horseshoe

"Section 2.2.9 – Rural Areas

> "1. Municipalities are encouraged to plan for a variety of cultural and economic opportunities within rural settlements to serve the needs of rural residents and area businesses."

The minor variance supports the development of a use which is appropriately located within a rural area and which supports economic activity in a manner that serves the needs of nearby residents and businesses in and surrounding the municipality.

This application conforms to the intent of the Growth Plan for the Greater Golden Horseshoe.

At the time of writing this report, no comments have been received. As previously discussed herein, the application has been circulated to the County of Peterborough given the frontage on and access from County Road 30.

As this application meets the four tests of a Minor Variance and conforms to the PPS and the Growth Plan, it is the recommendation of this report that this application be ***approved***.

COMMENTS

None received at the time of report preparation.

FINANCIAL IMPACT

A decision respecting the application is appealable to the Ontario Land Tribunal; for which any costs incurred by the Municipality may be recoverable from the applicant.

Respectfully submitted,

_____

Elysia Ackroyd, MCIP RPP
Planning Consultant
Township of Havelock-Belmont-Methuen

Appendix A – MV Application
Appendix B – Site Plan
Appendix C – GIS Mapping
Appendix D – Stormwater Management Report
Appendix E – Site Entrance Assessment Brief
Appendix F – Planning Cover Letter

Date Received: _____
Fee Received: _____
Roll No.: _____

Township of Havelock-Belmont-Methuen
Application for
☒ **Minor Variance – s. 45(1)**
☐ **Permission – s. 45(2)**

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1. Applicant/Agent Information:

1.1 Name of Owner(s): Kirk Thomas

Address: 9531 County Rd 30, Havelock, ON

_____ Postal Code K0L 1Z0

Telephone Number: [redacted] Fax Number: (____) ____ -_____

E-Mail Address: [redacted]

(An owner's authorization is required in Section 10.1 if the applicant is not the owner.)

1.2 Name of Applicant/Agent: Marnie Saunders
(if different from owner)

Address: [redacted]

_____ Postal Code [redacted]

Telephone Number: [redacted] Fax Number: (____) ____ -_____

E-Mail Address: [redacted]

1.3 Communication should be sent to: Owner ☒ Applicant ☒ or to the following:

_____

Address: _____

_____ Postal Code _____

Telephone Number: (____) ____ -_____ Fax Number: (____) ____ -_____

E-Mail Address: _____

2. LOCATION OF THE SUBJECT LAND: *(Complete applicable lines)*

2.1 Geographic Municipality/Township or Village: Geographic Township of Belmont

Concession Number(s) 9 Lot Number(s): Pt 3

Registered Plan Number: _____ Lot(s)/Block(s): _____

Reference Plan Number: _____ Part Number(s): _____

Road/Street Number and Name: 9351 County Road 30, Havelock ON

Attach Survey Plan, if available.

2.2 Are there any easements or restrictive covenants affecting the subject land? Yes ☐ No ☒

If yes, describe the easement or covenant and its effect:

3. Planning Review Information:

3.1 Official Plan Designation
Rural

3.2 Zoning By-law
Local Commerical C1

4. PURPOSE OF APPLICATION:

4.1 Nature and extent of relief from the zoning by-law

Seeking relief from the general provision of the parking area regulations under Section 4.27 of the zoning by-law.

4.2 REASON: (*Purpose of the proposed amendment – why proposed use is unable to comply with the zoning by-law provisions)*

Minimum parking space requirement is 72 spots due to the gross floor area of facility, however, due to the low traffic and number of vehicles, two parking spaces is sufficient to supply the demand.

5. Description of Subject Land:

5.1 Dimensions of Land:

Frontage: 75.5m m/ft. Depth: 261.6 m m/ft.

Area: 19,750.27sq.m sq.m/sq. ft. 1.975 ha ha/ac

Existing Use(s) of the subject land: Designated rural with a single detached dwelling and accessory structure

Length of Time the existing uses of the subject land have continued: Unknown

5.2 Date subject land was acquired by current owner: Unknown

5.3 Existing Buildings and Structures: Please identify each existing building on the sketch and provide information for each building. (If more than one building, attach a separate sheet to this application.)

Building 1

Type Single Detached Dwelling Date Constructed Unknown

Existing Use Residential

Date Existing Use Commenced Unknown

Ground Floor Area* _____ Gross Floor Area ** 167.67 sq,m

Front lot line setback Approx. 17m Rear lot line setback _____

Side lot line setback _____ Side lot line setback _____

Building Height _____ Dimensions _____

Building 2

Type Accessory Building Date Constructed Unknown

Existing Use Garage

Date Existing Use Commenced Unknown

Ground Floor Area* _____ Gross Floor Area ** 155 sq.m

Front lot line setback Approx. 47.8m Rear lot line setback _____

Side lot line setback _____ Side lot line setback _____

Building Height _____ Dimensions _____

Building 3

Type_____ Date Constructed_____

Existing Use _____

Date Existing Use Commenced _____

Ground Floor Area* _____ Gross Floor Area ** _____

Front lot line setback _____ Rear lot line setback _____

Side lot line setback _____ Side lot line setback _____

Building Height _____ Dimensions _____

5.4 Nature of Proposed Development: Please provide the information for each proposed building (If more than one building, attach a separate sheet to this application. If a proposed plan showing location of proposed buildings is available, please attach.)

Proposed Use(s) of the subject land: Nine Self Storage Facility buildings and associated outdoor storage.

Building 1

Type Storage Unit Buildings 1-6

Ground Floor Area* _____ Gross Floor Area ** 275.4sq.m

Front lot line setback _____ Rear lot line setback _____

Side lot line setback _____ Side lot line setback _____

Building Height _____ Dimensions 10.3 x 30.6m

Building 2

Type Storage Unit Buildings 7-9

Ground Floor Area* _____ Gross Floor Area ** 330.5sq.m

Front lot line setback _____ Rear lot line setback _____

Side lot line setback _____ Side lot line setback _____

Building Height _____ Dimensions 10.8 x 30.6m

* Ground Floor Area means the area that the building occupies on the ground.

** Gross Floor Area means the sum of the area of each floor of the building counting each floor at or above ground level (not basement or cellar) based on the exterior dimensions of the building.

6. Services:

6.1 Access is/will be provided to the subject land by: *(check appropriate space)*

		Maintenance	
Provincial Highway	☐	Public	☒
Municipal Road	☒	Private	☐
Private Road	☐	Year Round	☐
Right of Way	☐	Seasonal	☐
Unopened Road Allowance	☐	Unmaintained	☐
Other Public Road	☐		
(Specify) _____			
Water Access	☐		

Mainland Access – where access to the subject land is only by water:

Docking Facilities (specify) _____

Parking Facilities (specify) _____

Distance from Subject Land _____

Distance from Nearest Public Road _____

6.2 Water Supply is provided to the subject land by: *(check appropriate space)*

Publicly-owned/operated piped water system	☐
Privately-owned/operated individual well	☐
Privately-owned/operated communal well	☐
Lake or other water body	☐
Other means *(specify)* N/A	☐

6.3 Sewage Disposal is provided to the subject land by: *(check appropriate space)*

Publicly-owned/operated sanitary sewage system	☐
Private individual septic tank	☐
Public-owned/operated communal sewage system	☐
Private communal sewage system	☐
Privy	☐
Other means *(specify)* N/A	☐

6.4 Storm Drainage is provided to the subject land by: *(check appropriate space)*

Sewers	☐
Ditches	☐
Swales	☐
Other means *(specify)* *Please see attached Stormwater Management Report	☐

6.5 Other (Check if service is available)

☐ Electricity	☐ School bussing
☐ Telephone	☐ Garbage Collection
☐ Cable	☐ Recycling Collection

6.6 Notice to Applicants:

Should the location of the property which is the subject of this application be within the Wellhead Protection Area for the Havelock Municipal Well System then you are required to include a Section 59 Notice; in order to have your application deemed 'complete' in accordance with the Planning Act. Please Contact:
Terri Cox, Otonabee Region Conservation Authority
Email: tcox@otonabeeconservation.com
Tel: 705-745-5791 Ext 219

7. Other Applications (If known, indicate whether the subject land is a subject of application under the Act in any of the following):

7.1 Is the subject land currently the subject of a proposed official plan or official plan amendment that has been submitted to the Minister for approval?
☐ Yes #_____, Status_____ ☒ No ☐ Unknown

7.2 Is the subject land currently the subject of a zoning by-law amendment, Minister's zoning order amendment, consent or approval of plan of subdivision?
☐ Yes #_____, Status_____ ☒ No ☐ Unknown

7.3 Has the subject land been the subject of a previous minor variance application?
☐ Yes #_____, Status_____ ☒ No ☐ Unknown

8.0 History of Subject Land

8.1 If this is a re-submission of a minor variance application, explain how the proposal has changed.

_____

8.2 Has there ever been an industrial or commercial use on the subject land or adjacent land? Yes ☐ No ☒ Unknown ☐

If YES, please specify the use. _____

8.3 Has the grading of the subject land ever been changed by adding earth or other material? Yes ☐ No ☐ Unknown ☒

8.4 Has a gas station ever been located on the subject property or adjacent land?
Yes ☐ No ☒ Unknown ☐

8.5 Has there been gasoline or other fuel stored on the subject land or adjacent land?
Yes ☐ No ☒ Unknown ☐

8.6 Is there reason to believe the subject land may have been contaminated by former uses on the site or adjacent site?
Yes ☐ No ☒ Unknown ☐

9. Affidavit or Sworn Declaration

I, MARNIE SAUNDERS (D.M. WILLS) of the CITY
(owner or applicant) (Township, City, Village)

of [redacted] in the COUNTY
(County, Province)

of [redacted] make oath and say (or solemnly declare) that the information contained in this application is true and that the information contained in the documents that accompany this application in respect of the application is true.

Declared before me at the CITY of PETERBOROUGH
in the COUNTY of PETERBOROUGH
this 29TH day of AUGUST, 2024.

Commissioner of Oaths
Stephanie Rochelle Mann, a Commissioner, etc., Province of Ontario, for D.M. Wills Associates Limited. Service. Expires June 17, 2025.

Applicant

Applicant

10. AUTHORIZATIONS

10.1 Consent of the Owner(s) to make Application

If the applicant is not the sole owner of the land that is the subject of this application, the written authorization of the owner(s), that the applicant is authorized to make the application, must be included or the authorization set out below must be completed by the owner(s).

I/We, Kirk Thomas,
am/are the owner(s) of the land that is the subject of this application and I/We authorize D.M. Wills Associates Inc. - Marnie Saunders to make this application on my/our behalf and to provide any of my/our personal information that will be included in this application or collected during the processing of the application.

08 / 23 / 2024
Date

Signature of Owner

Date

Signature of Owner

10.2 Consent of Owner(s) to Enter Upon Lands

I/We, Kirk Thomas, hereby authorize the Township of Havelock-Belmont-Methuen Council and/or their agents/representative(s) to attend upon the lands subject of this application.

Signature of Applicant

Signature of Witness

Personal information contained on this form, collected pursuant to the *Planning Act*, will be used for the purpose of responding to the initial application. Questions should be directed to the Freedom of Information and Privacy Coordinator at the institution conducting the procedures under the Act.

10.3 Payment/Acknowledgement

Any complete application submission must be accompanied by a deposit fee in the amount of $1000.00 in cash, debit, online payment or cheque made payable to the Township of Havelock-Belmont-Methuen.

By virtue of signature(s) hereon, I/We as the owner(s) further agree to pay any further costs incurred by the Township associated with the processing of my/our application; including, but not restricted to Municipal costs, Professional Planning Fees, Engineering and Legal Fees.

08 / 23 / 2024
Date

Signature of Owner

Date

Signature of Owner

11. SKETCH PLAN:

The application must be accompanied by a sketch showing the following:

- the boundaries and dimensions of the subject land;
- the location, size and type of all existing and proposed buildings and structures on the subject land; indicating the distance of the buildings or structures from the front, rear and side lot lines;
- the boundaries and dimensions of land that abuts the subject property, or any land owned by the owner of the subject land and that abuts the subject land;
- the location, size and type of all existing and proposed buildings and structures on abutting lands, indicating the distance of the buildings or structures from the front, rear and side lot lines;
- the distance between the subject land and the nearest township lot line or landmark, such as a railway crossing or bridge;
- the location of all land previously severed from the parcel originally acquired by the current owner of the subject land;
- the approximate location of all natural and artificial features on the subject land and adjacent lands that in the opinion of the applicant may affect the application, such as buildings, abandoned or active railways, roads, watercourses, drainage ditches, river or stream banks, wetlands, wooded areas, wells and septic tanks and tile beds;
- the existing use(s) on adjacent lands;
- the location, width and name of any roads within or abutting the subject land, indicating whether it is an unopened road allowance, a public travelled road, a private road or a right-of-way;
- if access to the subject land is by water only, the location of the parking and boat docking facilities to be used;
- the location and nature of any easement affecting the subject land;
- all present entrances onto the subject property;
- if there are agricultural buildings capable of housing animals within 500 metres of the proposed lot, then the location of these buildings must be shown on the sketch.

Measurements on the sketch **SHALL** correspond to those identified in the application. Photocopies of your survey, if you have one, should be used. If no survey is available, a detailed hand-drawn sketch to scale is acceptable.

In some instances, it may be necessary for a locational survey to be submitted with the application in order to accurately determine property and building dimensions, setbacks, etc. A locational survey may be required in situations where existing/proposed building or structures are in proximity to property line(s) and/or shoreline.

FOR OFFICE USE ONLY

1. Is application deemed complete? Yes ☐ No ☐

   Date: _____

   Site Visit Date:_____

2. What is the current Official Plan designation(s) of the subject lands?

   _____

3. What is the current Zoning of the subject lands?

   _____

4. Does application conform to both the County and Township Official Plan?

   Yes ☐ No ☐

   If no, describe nature of non-conformity.

   _____

   _____

5. Is the application consistent with the Provincial Policy Statement?

   Yes ☐ No ☐

6. Is the proposed Minor Variance compatible with adjacent/surrounding land uses?

   Yes ☐ No ☐

   If no, describe nature of incompatibility.

   _____

   _____

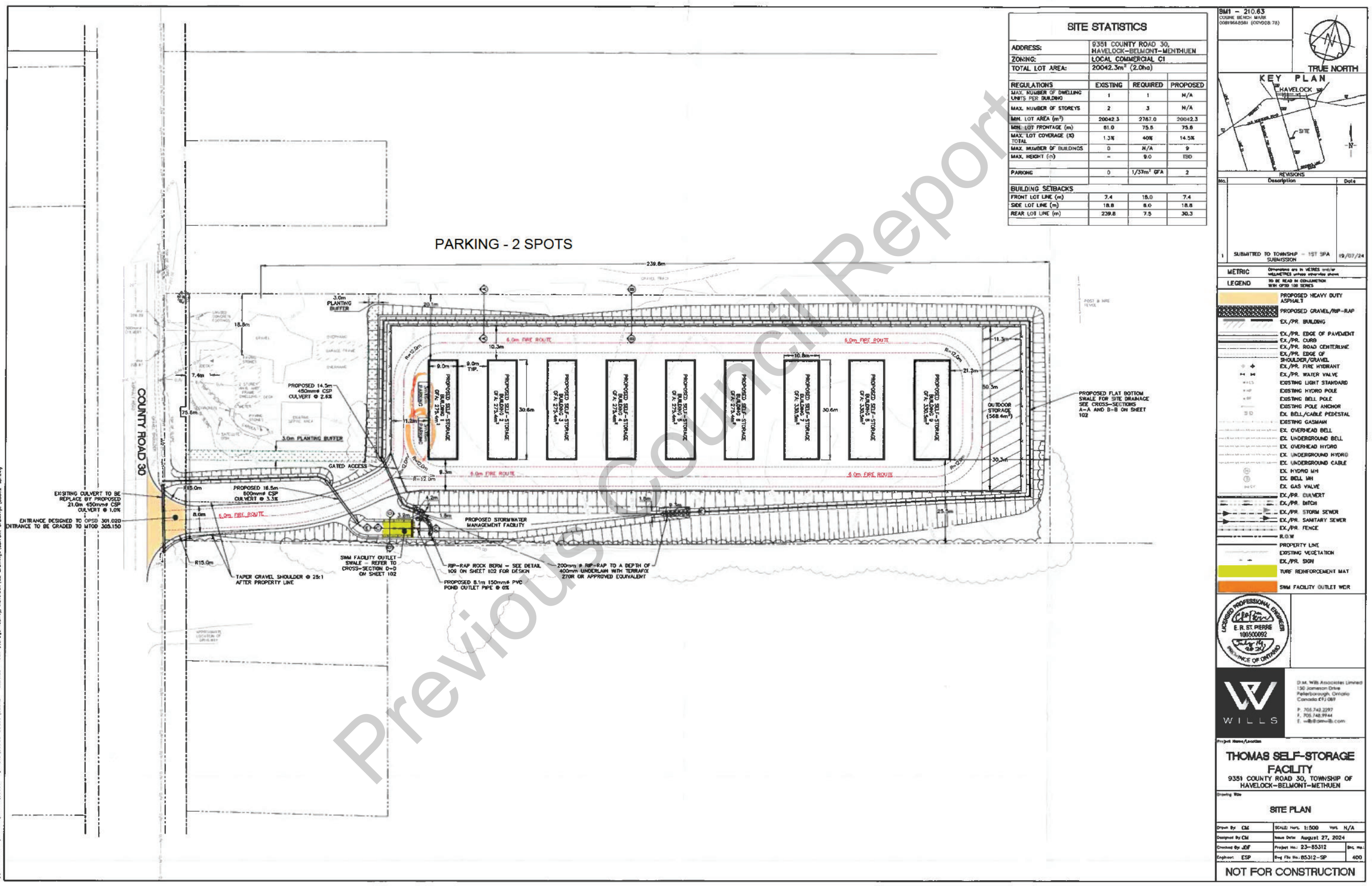
7. Is this considered suitable for the intended use (physical characteristics such as topography, drainage, soils and wet areas)

   Yes ☐ No ☐

   If no, describe nature of issues.

   _____

   _____

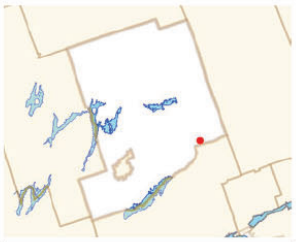

PARKING - 2 SPOTS
COUNTY ROAD 30
PROPOSED SELF-STORAGE BUILDING
OUTDOOR STORAGE (568.4m²)
6.0m FIRE ROUTE
GATED ACCESS
3.0m PLANTING BUFFER
PROPOSED STORMWATER MANAGEMENT FACILITY
EXISTING CULVERT TO BE REPLACE BY PROPOSED 21.0m 450mmø CSP CULVERT @ 1.0%
ENTRANCE DESIGNED TO OPSD 301.020 ENTRANCE TO BE GRADED TO MTOD 305.150
PROPOSED 18.5m 600mmø CSP CULVERT @ 3.3%
PROPOSED 14.5m 450mmø CSP CULVERT @ 2.6%
TAPER GRAVEL SHOULDER @ 25:1 AFTER PROPERTY LINE
SWM FACILITY OUTLET SWALE - REFER TO CROSS-SECTION D-D ON SHEET 102
RIP-RAP ROCK BERM - SEE DETAIL 109 ON SHEET 102 FOR DESIGN
PROPOSED 8.1m 150mmø PVC POND OUTLET PIPE @ 0%
200mm ø RIP-RAP TO A DEPTH OF 400mm UNDERLAIN WITH TERRAFIX 270R OR APPROVED EQUIVALENT
PROPOSED FLAT BOTTOM SWALE FOR SITE DRAINAGE SEE CROSS-SECTIONS A-A AND B-B ON SHEET 102
TRUE NORTH
KEY PLAN
HAVELOCK
SITE
REVISIONS
1 SUBMITTED TO TOWNSHIP - 1ST SPA SUBMISSION 19/07/24
METRIC
LEGEND
PROPOSED HEAVY DUTY ASPHALT
PROPOSED GRAVEL/RIP-RAP
TURF REINFORCEMENT MAT
SWM FACILITY OUTLET WEIR
D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com
WILLS
THOMAS SELF-STORAGE FACILITY
9351 COUNTY ROAD 30, TOWNSHIP OF HAVELOCK-BELMONT-METHUEN
SITE PLAN
Drawn By: CM
SCALE: Horz. 1:500 Vert. N/A
Designed By: CM
Issue Date: August 27, 2024
Checked By: JDF
Project No.: 23-85312
Engineer: ESP
Dwg File No.: 85312-SP
Sht. No.: 400
NOT FOR CONSTRUCTION

SITE STATISTICS

ADDRESS:	9351 COUNTY ROAD 30, HAVELOCK-BELMONT-MENTHUEN		
ZONING:	LOCAL COMMERCIAL C1		
TOTAL LOT AREA:	20042.3m² (2.0ha)		
REGULATIONS	EXISTING	REQUIRED	PROPOSED
MAX. NUMBER OF DWELLING UNITS PER BUILDING	1	1	N/A
MAX. NUMBER OF STOREYS	2	3	N/A
MIN. LOT AREA (m²)	20042.3	2787.0	20042.3
MIN. LOT FRONTAGE (m)	81.0	75.5	75.8
MAX. LOT COVERAGE (%) TOTAL	1.3%	40%	14.5%
MAX. NUMBER OF BUILDINGS	0	N/A	9
MAX. HEIGHT (m)	-	9.0	TBD
PARKING	0	1/37m² GFA	2
BUILDING SETBACKS			
FRONT LOT LINE (m)	7.4	15.0	7.4
SIDE LOT LINE (m)	18.8	8.0	18.8
REAR LOT LINE (m)	239.8	7.5	30.3

County of Peterborough

9351 County Rd 30



Legend

Roads < 50,000
- PRIV ; Private; PRIV
- City Arterial
- City Collector and Local
- City Owned Unclassified
- Provincial
- County
- Township
- Water Access Only

Outside Roads < 50,000
- Major Roads
- Local Roads

Peterborough Proposed Bypas
First Nations
Civic Address
Parcel Fabric
Parcel First Nations - Canada
Rivers
- Intermittent
- Permanent

Clean Water Act Policies Appl
Provincially Significant Wetlan
Locally Significant Wetlands
Non-evaluated Wetlands
Lakes - Local Scale
Municipal Boundary - Upper Ti
- <all other values>
- COUNTY OF PETERBOROUGH

Notes

91.9 0 45.93 91.9 Meters

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Stormwater Management Report

Thomas Self-Storage Facility

9351 County Road 30
Havelock, Ontario

D.M. Wills Project Number 21-85312

D.M. Wills Associates Limited
Partners in Engineering
Peterborough

WILLS

July 2024

Prepared for:
Kirk Thomas

Table of Contents

Figures

Tables

Appendices

1.0 Purpose

D.M. Wills Associates Limited (Wills) has been retained by Kirk Thomas (Client) to prepare a Preliminary Stormwater Management Report for the construction of a multi-unit storage rental facility located at 9351 County Road 30, in the Township of Havelock-Belmont-Methuen, Ontario (Subject Property).

The purpose of this report is to investigate the impact of the proposed development and determine applicable stormwater management (SWM) controls, if required, to maintain existing drainage patterns and ensure there will be no adverse impacts to the receiving drainage system. The following report has been prepared to address the requirements of the County of Peterborough (County).

2.0 Site Description

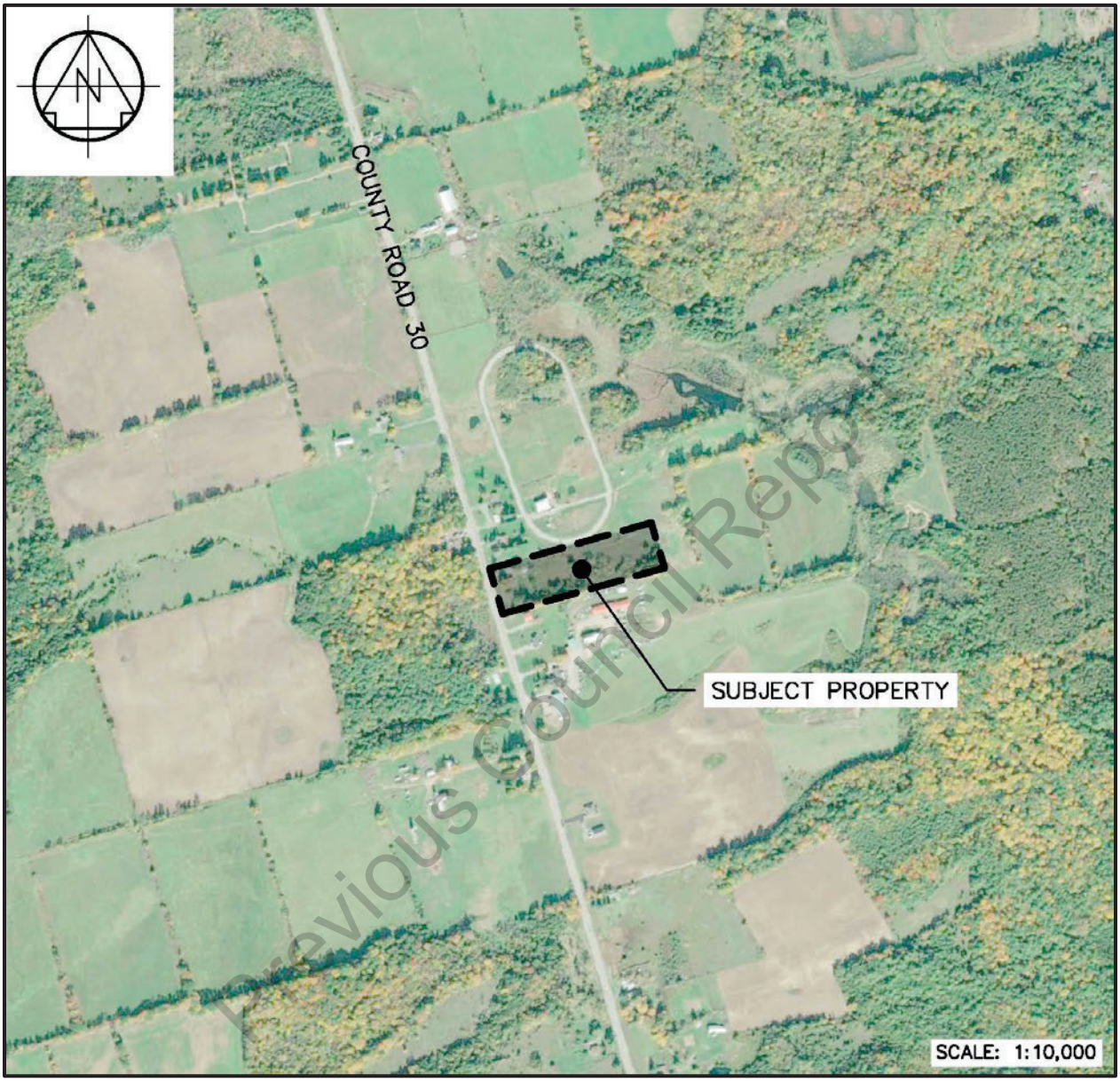
The Subject Property is legally described as part of Lot 3, Concession 9, Township of Havelock-Belmont-Methuen, Geographic Township of Belmont, County of Peterborough. The site location is shown in **Figure 1**.

The surrounding properties mainly contain agricultural lands and treed areas, with minimal imperviousness from dwellings, storage buildings and driveways / roadways. The Subject Property is 2.01 ha in area and is partially developed.

The majority of the existing Subject Property is composed of grassed-like range with a small portion adjacent to the west boundary consisting of a gravel driveway, single-family dwelling and detached garage, surrounded by grass. A high point located near the centre of the Subject Property splits the drainage east and west. Runoff directed eastward flows overland toward a wetland and runoff generated in the western half of the Subject Property flows overland westward toward the County Road 30 roadside ditch, conveying runoff toward a downstream wetland.

A topographic survey of the Subject Property has been completed by Elliot and Parr, dated September 8, 2023 (Reference No. 23-19-197-00). This survey will be referenced to determine the drainage characteristics of the Subject Property.

Figure 1 – Site Location



3.0 Methodology

The present hierarchy of watershed planning in Ontario can be described by the following in descending order: Watershed Plans, Sub-watershed Plans and Individual Stormwater Management Plans. The Subject Property is not covered by any Watershed or Sub-watershed Plans and, therefore, this report has been prepared as an Individual Stormwater Management Plan.

3.1 Site Specific Stormwater Design Criteria

Based on the typical requirements of the County of Peterborough, the following design criteria have been established for the site:

- Provide stormwater quality controls to achieve Ministry of the Environment "Enhanced" (Level 1) protection.
- Provide stormwater quantity controls to reduce post development peak flow rates to the existing peak flow rates at each outlet location, for the 2 to 100-year design storms.
- Provide low impact development features to promote infiltration and preserve the natural hydrologic conditions.

3.2 Existing Drainage Analysis

The existing condition has been analyzed as two catchments based on the runoff directed to each of the respective outlets. The pre-development catchment areas are shown in **Figure 2** and described in detail below.

- Catchment **EX-101** encompasses the western portion of the Subject Property and includes the existing single-family dwelling, detached garage, gravel driveway and grassed area adjacent to the western boundary. This catchment also includes a large area of range, in the eastern portion of **EX-101**. Runoff generated in this catchment flows westward overland from a high point along the eastern catchment boundary. Runoff is directed to the County Road 30 roadside ditch (**OUT-1**), which conveys flows to a wetland approximately 700 m downstream.
- Catchment **EX-202** represents the remaining east portion of the Subject Property. This area is strictly comprised of range. Stormwater generated within this catchment flows eastward overland from a highpoint located at the western catchment boundary. Runoff is directed to a low-lying area to the east (**OUT-2**), before ultimately flowing into a nearby wetland.

3.3 Proposed Drainage Analysis

For the proposed condition, the Subject Property has been analyzed as three catchments, based on the proposed grading plan. The proposed catchments are shown in **Figure 3** and described in detail below.

- Catchment **PR-101** encompasses the western portion of the Subject Property and includes the existing single-family dwelling, detached garage, gravel driveway and grassed area adjacent to the western boundary. A gravel driveway leading to the proposed storage facility will be constructed in this catchment. Runoff generated within **PR-101** will flow overland from east to west and outlet into the County Road 30 roadside ditch (**OUT-1**) prior to being conveyed to the downstream wetland.
- Catchment **PR-102** represents the majority of the developed area including multiple storage buildings, a gravel driveway, and a SWM facility. Runoff generated in this catchment will be directed to the perimeter swales which will convey stormwater to the SWM facility, discharging runoff to an outlet swale. The outlet swale will convey attenuated flows through **PR-101** and ultimately outlet to the County Road 30 roadside ditch (**OUT-1**).
- Catchment **PR-103** encompasses a small, grassed portion of land in the southwest corner of the Subject Property. Stormwater generated in this catchment will flow uncontrolled overland toward the County Road 30 roadside ditch (**OUT-1**).

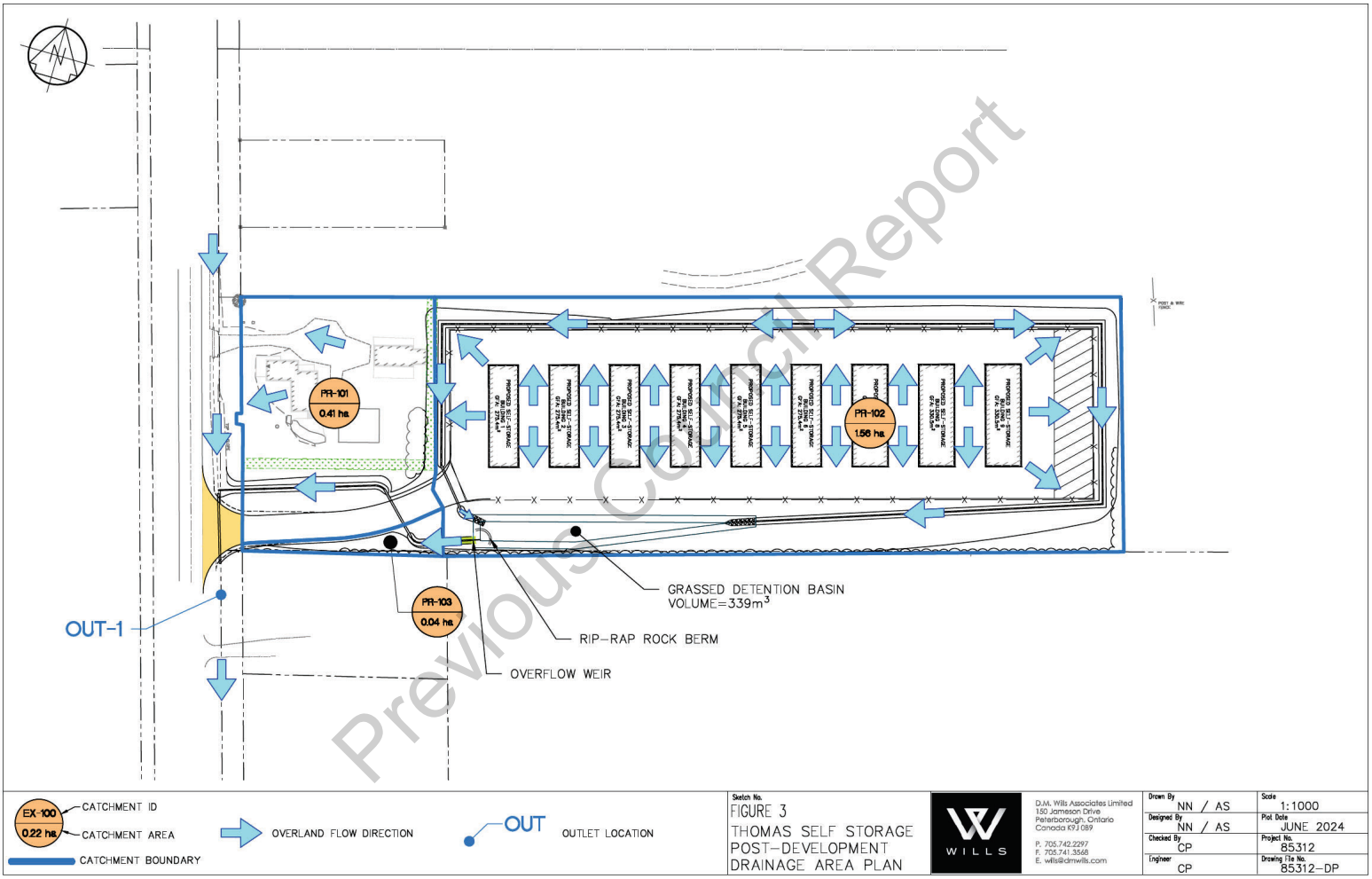
3.4 Site Conditions Summary

The existing and proposed runoff characteristics were analyzed using individual sub-catchments. Hydrologic parameters such as soil infiltration properties, land use and runoff response were determined based on literature review. Topographic mapping and AutoCAD Civil 3D 2024 software were used to establish sub-watershed areas, land use and slope. On-site soils were assessed as Otonabee Loam and Tioga Sandy Loam having a Hydrologic Soil Group of B and A, respectively. The hydrologic parameters for each catchment are summarized in **Table 1** and documented in **Appendix A**.

Table 1 – Existing and Proposed Hydrologic Parameters

Nashyd[1]					
Catchment ID	**Area (ha)**	**Impervious %**	**CN*[1]**	**Ia[2]**	**Tp[3] (hrs)**
EX-101	1.44	3.0	61.1	7.3	0.30
EX-201	0.57	0.0	45.7	8.4	0.27
PR-101	0.41	18.3	70.5	4.4	0.17
PR-102	1.56	15.7	69.4	3.5	0.18
PR-103	0.03	0.0	60.5	5.0	0.25
PR-102 IMP[4]	1.56	62.8	78.6	3.2	0.18

Notes:
1. CN* refers to the modified CN number adjusted to Antecedent Moisture Conditions II. Excludes Impervious Area for Nashyd.
2. Ia refers to Initial Abstraction. Excludes Impervious Area for Nashyd.
3. Tp refers to Time of Peak.
4. PR-102 IMP is identical to catchment PR-102; however, the gravel area is considered impervious. This will be referenced in the quality control design. This would typically be modelled as a Standhyd, however it is not used for any peak flow design / calculations, therefore was modelled as Nashyd for simplicity.



4.0 Stormwater Management

4.1 Stormwater Quantity Control

The proposed development will increase the impervious areas within the Subject Property, resulting in increased runoff volumes and peak flow rates. To ensure that the receiving drainage system will not be adversely affected, a quantity control facility is required to control post-development peak flow rates to pre-development levels.

4.1.1 Peak Flow Calculations

Peak flow rates from the existing condition have been analyzed at the outlet locations based on the hydrologic parameters shown in **Figure 3.** Uncontrolled, proposed peak flow rates were also calculated at the corresponding outlet locations. A summary of the peak flow rates is shown in **Table 2**.

Peak flows were estimated using Visual Otthymo Version 3 (VO3) hydrologic modelling software for each of the 2 to 100-year storms. These calculations consider the 6-hour SCS Peterborough storm duration. The flow chart and the VO3 model results are presented in **Appendix B.**

Table 2 – Existing and Proposed Uncontrolled Peak Flow Summary

Return Period	Peak Flow Rates (m^3/s)			
	OUT-1		OUT-2	
	EX[1]	UNC[2]	EX[3]	UNC[4]
2-year	0.017	**0.046**	0.004	0.000
5-year	0.035	**0.082**	0.008	0.000
10-year	0.049	**0.109**	0.012	0.000
25-year	0.069	**0.147**	0.017	0.000
50-year	0.086	**0.178**	0.022	0.000
100-year	0.103	**0.209**	0.026	0.000

Notes:
1. EX refers to the Subject Property under existing conditions discharging to OUT-1. Refer to VO3 hydrograph NHYD (1101).
2. UNC refers to the Subject Property without any quantity controls in place, discharging to OUT-1. Refer to VO3 hydrograph NHYD (3).
3. EX refers to the site under existing conditions discharging to OUT-2. Refer to VO3 hydrograph NHYD (1201).
4. No stormwater is directed toward OUT-2 under proposed conditions, thus there are no UNC flows.

A review of **Table 2** confirms the increase in proposed peak flow rates directed to **OUT-1** compared to the existing peak flow rates leaving the site, in the absence of stormwater quantity controls. Therefore, quantity controls **are required** to attenuate the peak flow rates discharging to **OUT-1**. However, quantity controls are **not required** for **OUT-2** as no stormwater will be directed to this outlet under the proposed condition.

4.1.2 Grassed Detention Basin

In accordance with the design criteria established in **Section 3.1**, quantity controls are required for all events up to and including the 100-year storm. A grassed detention basin is proposed to attenuate peak stormwater flowrates. Based on the proposed peak flow rates calculated by the VO3 hydrologic model, a maximum of 315 m³ is required to mitigate post-development peak flow rates to pre-development levels for the 100-year storm event at **OUT-1**. A 150 mm orifice tube is proposed for the outlet structure which will be surrounded by a 0.40 m high rip-rap rock berm. This rock berm will allow influent flows, adjacent to the outlet, to have improved removal of suspended solids and avoid short circuiting to the outlet. In the event that the orifice becomes obstructed, once the grassed detention basin has filled, stormwater will outlet over a 4 m wide emergency overflow weir leading to the outlet swale. Further details of the outlet structure, rock berm and overflow weir are included in the detailed design drawings included in **Appendix E**.

The stage-storage discharge relationship is shown in **Table 3**, which outlines the existing and proposed controlled peak flow rates, with supplementary stage-storage and peak flow information included in **Appendix B**.

Table 3 – Grassed Detention Basin Stage-Storage-Discharge

Elev. (m)	Storage Depth (m)	Peak Flows (m³/s)	Storage Volume (m³)	Remarks
207.55	0.00	0.000	0	Bottom on Grassed Detention Basin
207.71	0.16	0.000	55	150 mm Orifice Tube
207.79	0.24	0.007	88	2-year (86 m³)
207.89	0.34	0.020	133	5-year (129 m³)
207.96	0.41	0.026	168	10-year (167 m³)
208.07	0.52	0.033	227	25-year (225 m³)
208.16	0.61	0.038	281	50-year (275 m³)
208.24	0.69	0.042	333	100-year (328 m³)
208.25	0.70	0.043	339	Top of Detention Basin

The proposed condition peak flow rates, with attenuation provided by the stormwater facility, are provided in **Table 4** and detailed model output is provided in **Appendix B.**

Table 4 – Post-Development Controlled Peak Flow Summary at OUT-1

Return Period	Peak Flow Rates (m^3/s)			
	OUT-1		OUT-2	
	EX[1]	PR[2]	EX[3]	PR[3]
2-year	0.017	0.013	0.004	0.000
5-year	0.035	0.028	0.008	0.000
10-year	0.049	0.043	0.012	0.000
25-year	0.069	0.062	0.017	0.000
50-year	0.086	0.075	0.022	0.000
100-year	0.103	0.089	0.026	0.000

Notes:
1. EX refers to the site under existing conditions discharging to OUT-1. Refer to VO3 hydrograph NHYD (1101).
2. PR refers to the Subject Property with quantity controls in place, discharging to OUT-1. Refer to VO3 hydrograph NHYD (1).
3. No stormwater is directed toward OUT-2 under proposed conditions, thus there are no PR flows.

4.2 Stormwater Quality Control

The proposed development may cause additional pollutants to be conveyed off-site; as such, water quality controls have been provided. The selection and sizing of the water quality measures have been based on the procedures set out in the Stormwater Management Planning and Design Manual (MOE, March 2003) for Enhanced (Level 1) protection. This level of protection requires 80% total suspended solids (TSS) removal and treatment of 90% of the annual runoff volume.

The goal of stormwater management is to preserve the natural hydrologic cycle and mitigation measures should be assessed in the following order:

- Stormwater lot level controls
- Stormwater conveyance controls
- End-of-pipe stormwater management facilities

Stormwater lot level controls represent measures that are implemented on an individual lot basis such as soak away pits, flatter grading and reduction of the impervious footprint. For the proposed development, lot level controls such as reduced grading will be used where possible to supplement the proposed SWM strategy; however, these are not intended to become the primary means for stormwater quality control.

Stormwater conveyance controls represent the conveyance systems used to transport stormwater runoff from the Subject Property to the receiving system such as pervious

pipes, catch basin treatment and grassed swales. Stormwater conveyance controls will be implemented within the Subject Property, however, are not meant to be the primary means of water quality treatment for the development.

End-of-pipe SWM facilities represent the common urban SWM measures used to service numerous lots or whole subdivisions. These facilities include Wet Ponds, Wetlands, Dry Ponds, Infiltration Basins, Infiltration Trenches, Filter Strips, Sand Filters and Oil-Grit Separators (OGS). End-of-pipe SWM facilities will be the primary means of quality control implemented for this development.

Table 3.2 of the Stormwater Management Planning and Design Manual (March 2003) identifies the infiltration volume requirements for a variety of SWM facilities. Sizing calculations were completed for the proposed infiltration facility considering gravel as impervious, therefore catchment **PR-102** has an impervious value of 62.8%, as shown in **Table 1** (PR-102 IMP). According to Table 3.2 of the Stormwater Management Planning and Design Manual (March 2003), this corresponds to 32.6 m^3/ha of required infiltration. The mandatory infiltration volume for the proposed development is calculated below.

$$\text{MOE Required Infiltration Volume} = (32.6\ m^3/ha)(\text{Catchment Area})$$

$$\text{MOE Required Infiltration Volume} = (32.6\ m^3/ha)(1.56\ ha)$$

MOE Required Infiltration Volume = 50.9 m^3

The proposed grassed detention basin will contain 55 m^3 of infiltration volume, exceeding the requirements of the MOE. It is recommended to complete a sub-surface investigation to ensure the SWM facility maintains a 1.0 m separation from groundwater and will draw down in less than 48 hours. The existing underlying soils provide sufficient drainage characteristics to support the functionality of the proposed SWM facility.

5.0 Hydraulic Elements

Hydraulic calculations were completed to ensure that the overland flows generated from the Subject Property can be appropriately conveyed toward the grassed detention basin and ultimately **OUT-1**. The proposed swales within the Subject Property have been identified as East Swale, West Swale and Outlet Swale. Two separate culverts are proposed to be installed to convey stormwater underneath the southern driveway. The proposed culverts have been identified as Inlet Culvert and Outlet Culvert. Supporting calculations are included in **Appendix C**.

5.1 East Swale

The East Swale receives runoff from a catchment area of 0.70 ha. This swale is 0.30 m deep, 0.30 m wide flat bottom swale with a maximum 3:1 side slopes and a longitudinal slope of 0.5%. Stormwater will reach a maximum depth of 0.15 m within the swale during the 100-year storm (0.053 m^3/s), leaving 0.15 m of freeboard. The maximum velocity of the swale is 0.71 m/s, which is below the recommended maximum of 1.5 m/s allotted to grassed swales; therefore, erosion measures are not required.

5.2 West Swale

The West Swale receives runoff from a catchment area of 0.38 ha. This swale is 0.30 m deep, 0.30 m wide flat bottom swale with a maximum 3:1 side slopes and a longitudinal slope of 0.5%. Stormwater will reach a maximum depth of 0.20 m within the swale during the 100-year storm (0.059 m^3/s), leaving 0.10 m of freeboard. The maximum velocity of the swale is 0.49 m/s, which is below the recommended maximum of 1.50 m/s allotted to grassed swales; therefore, erosion measures are not required.

5.3 Outlet Swale

The Outlet Swale receives runoff from a catchment area of 0.09 ha including outflows from the grassed detention basin. This swale is 0.30 m deep, 0.30 m wide flat bottom swale with a maximum 3:1 side slopes and a longitudinal slope of 1.0%. Stormwater will reach a maximum depth of 0.16 m within the swale during the 100-year storm (0.082 m^3/s), leaving 0.14 m of freeboard. The maximum velocity of the swale is 0.71 m/s, which is below the recommended maximum of 1.50 m/s allotted to grassed swales; therefore, erosion measures are not required.

5.4 Inlet Culvert

The Inlet Culvert will convey stormwater beneath the south driveway and into the grassed detention basin. In order to appropriately convey the stormwater captured during the 100-year storm (0.117 m^3/s) in the West Swale the Inlet Culvert is proposed to be a 375 mm smooth HDPE culvert.

5.5 Outlet Culvert

The Outlet Culvert will convey stormwater beneath the south driveway toward the County Road 30 roadside ditch (**OUT-1**). In order to appropriately convey the stormwater captured in the grassed detention basin during the uncontrolled 100-year storm (0.146 m^3/s) the Outlet Culvert is proposed to be a 600 mm smooth HDPE culvert.

6.0 Operation and Maintenance Considerations

The grassed detention basin may require maintenance periodically to ensure it is functioning as intended. The infiltration / detention facility shall be inspected annually, and any sediment and debris be removed to ensure the drawdown time remains below the 48-hour threshold.

7.0 Erosion and Sediment Control

When soils are exposed during construction, there is a potential for transport of relatively large amounts of sediment off-site to downstream areas. Erosion control practices prevent the soil exposed during construction from being disturbed by the erosive forces of stormwater. Typically, erosion control measures are physical barriers applied to the

surface of the soil. Vegetated filter strips, interceptor swales, and seeding / mulching are some examples of erosion control measures.

Sediment controls remove the suspended sediments within stormwater runoff. This is generally achieved by settling or filtering mechanisms through dissipating the velocity of stormwater.

Effective erosion and sediment control practices can be separated into structural and non-structural controls. Structural controls involve physical barriers that directly provide erosion and sediment mitigation, whereas non-structural controls involve diverting stormwater from potentially problematic areas to reduce the erosion and sediment impact throughout construction. In order to minimize the impacts associated with sediment transfer the following measures will be completed in the order listed:

- Install silt barrier as shown on Detailed Design Drawing and maintain as required.
- Install mud mat in the location shown on the Detailed Design Drawings.
- Remove temporary erosion and sediment control devices/measures and clean out once construction is completed and vegetation is established.

Regular inspection and maintenance of the silt fence will ensure continued protection to the downstream areas for the duration of the construction period.

Silt Fencing

Heavy duty silt fencing will be as per OPSD 219.110. The proposed silt fence shall be inspected after every rainfall to identify failed sections. Any failures shall be repaired immediately. When sediment accumulates to half the height of the geotextile, it is to be removed and disposed of in a controlled area. A supply of extra silt fence is to be kept on-site to provide quick repairs or the installation of additional fence, if required.

Mud Mat

Mud Mats remove sediment from vehicles that are entering and leaving the Subject Property. The mud mat will consist of varying types of stone at different locations of the mud mat. This includes 50 mm and 150 mm clear stone underlain with geotextile. The granular material will require periodic replacement as it becomes sedimented by vehicle traffic. Sediment shall be cleaned from public roads at the end of each day by shoveling or sweeping and disposed of properly in a controlled sediment disposal area.

8.0 Conclusion

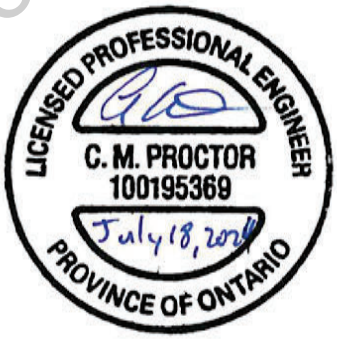
The proposed development is located at 9351 County Road 30, in the Township of Havelock-Belmont-Methuen, and will alter the runoff characteristics of the Subject Property; therefore, stormwater quantity and quality control measures have been provided to ensure that the receiving drainage system will not be adversely affected.

A grassed detention basin is proposed to provide adequate quantity and quality control for the proposed development. This SWM facility will provide enough active storage to attenuate peak flowrates to existing levels while also providing sufficient infiltration volume to meet the "Enhanced" Level 1 protection as defined in the Stormwater Management Planning and Design Manual (March 2003).

Erosion and sediment control measures have been prepared to ensure that off-site erosion and transport of sediment is minimized through temporary measures.

The proper installation and ongoing maintenance of the erosion and sediment control measures outlined in this report will ensure that the development can proceed without adversely affecting downstream drainage conditions. The maintenance of the proposed measures will be carried out by the property owner.

Respectfully submitted,



Nate Napper, M.Eng.
Engineering Intern
Land Development Engineering

Chris Proctor, P.Eng.
Water Resources Engineer
Manager, Land Development Engineering

NN/CP/jh

Statement of Limitations

This Stormwater Management Report has been prepared by D.M. Wills Associates Limited on behalf of Kirk Thomas to address the requirements of the County of Peterborough.

The conclusions and recommendations in this report are based on available background documentation and discussions with applicable agencies at the time of preparation.

The report is intended to demonstrate the means whereby stormwater runoff originating from the site will be managed with respect to both quantity and quality control. The report is applicable only to the project described in the text, constructed substantially in accordance with the plans and details accompanying this report.

Any use which a third party makes of this brief other than a stormwater management report for the proposed development is the responsibility of such third parties. D.M. Wills Associates Limited accepts no responsibility for damages, if any, suffered by a third party as a result of decisions made or action taken based on using this report for purposes other than a stormwater management brief for the Thomas Self-Storage Facility.

D.M. Wills Associates Limited is not responsible for any changes made to the stormwater management measures which are not in accordance with the design drawings. Any person(s) relying on the "as-constructed" stormwater measures should confirm that the field conditions are in accordance with the design drawings.

Appendix A

Rainfall and Hydrology

6 Hour SCS Type II Intensity Hyetographs
2006 Peterborough Airport Weather Station
(mm/hr)

Time (min.)	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
0	0	0	0	0	0	0
15	1.6	2.1	2.5	2.9	3.3	3.6
30	1.6	2.1	2.5	2.9	3.3	3.6
45	2.3	3.2	3.7	4.4	4.9	5.4
60	2.3	3.2	3.7	4.4	4.9	5.4
75	2.3	3.2	3.7	4.4	4.9	5.4
90	2.3	3.2	3.7	4.4	4.9	5.4
105	3.9	5.2	6.2	7.3	8.1	9.0
120	3.9	5.2	6.2	7.3	8.1	9.0
135	4.6	6.3	7.4	8.8	9.8	10.8
150	4.6	6.3	7.4	8.8	9.8	10.8
165	23.2	31.4	36.9	43.7	48.9	53.9
180	60.4	81.78	95.9	113.7	127.0	140.2
195	8.5	11.5	13.5	16.0	17.9	19.8
210	8.5	11.5	13.5	16.0	17.9	19.8
225	3.9	5.2	6.2	7.3	8.1	9.0
240	3.9	5.2	6.2	7.3	8.1	9.0
255	3.1	4.2	4.9	5.8	6.5	7.2
270	3.1	4.2	4.9	5.8	6.5	7.2
285	2.3	3.2	3.7	4.4	4.9	5.4
300	2.3	3.2	3.7	4.4	4.9	5.4
315	1.6	2.1	2.5	2.9	3.3	3.6
330	1.6	2.1	2.5	2.9	3.3	3.6
345	1.6	2.1	2.5	2.9	3.3	3.6
360	1.6	2.1	2.5	2.9	3.3	3.6

Hydrologic Parameters for EX-101

Sheet 1 of 1

WILLS

Project No: 85312
Project Name: Thomas Self Storage Facility
Designed/Checked By: NN & AS / CP
Date: 10-Jul-24

Land Use

	EX-101	EX-101	
Agriculture	0.00	0.00	ha
Range	0.44	0.48	ha
Grass	0.29	0.00	ha
Woods	0.12	0.03	ha
Wetland	0.00	0.00	ha
Gravel	0.03	0.00	ha
Impervious	0.04	0.00	ha
SUM	**0.92**	**0.51**	
Hydrologic Soil Group[1]	B	A	
Soil Type	Otonabee Loam	Tioga Sandy Loam	
C	0.23	0.15	
CN (Nashyd)	65.1	48.1	

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	**1.44**	ha
Impervious Area	**0.04**	ha
Percent Impervious	**3.0%**	
Connected Impervious	3.0%	

	Pervious	Impervious	
Length	180	12	m
US Elev	211.50	208.41	m
DS Elev	206.00	208.10	m
Slope	3.1	2.6	%
	Rolling	Rolling	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Impervious	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	B	0.32	0.22	0.13	0.11	0.05	0.76	0.90	0.23	
	A	0.22	0.16	0.10	0.08	0.05	0.57	0.90	0.15	n.a.
SCS Curve No.[3], CN	B	74	65	61	58	50	85	98	65.1	63.5
	A	66	49	39	36	50	76	98	48.1	48.1
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	7.3	7.5

Time of Concentration[6]

Pervious Length	180	m
Slope	3.1	%
Airport	**27.2**	min.
Bransby - Williams	7.9	min.
Applicable Minimum[7]	10.0	min.
Time to Peak	18.2	min.
	0.30	**hr.**

Flat: 0-2% Slopes
Rolling: 2-6% Slopes
Hilly: >6% Slopes

Composite Parameters

Drainage Area	1.44 ha	
Runoff Coefficient	0.20	
SCS Curve No.	59.0	57.8
Modified Curve No.[4], CN*	**61.1**	58.7
Initial Abstraction.	**7.3**	7.5

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Use Airport Equation to calculate time of concentration for C <= 0.4, and Bransby-Williams for C > 0.4.
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 10 minutes
8. All impervious areas have been assumed to be directly connected.

Hydrologic Parameters for EX-201

Sheet 1 of 1

WILLS

Project No: 85312
Project Name: Thomas Self Storage Facility
Designed/Checked By: NN & AS / CP
Date: 10-Jul-24

Land Use

	EX-201	
Agriculture	0.00	ha
Range	0.46	ha
Grass	0.00	ha
Woods	0.11	ha
Wetland	0.00	ha
Gravel	0.00	ha
Impervious	0.00	ha
SUM	0.57	

Hydrologic Soil Group[1]	A
Soil Type	Tioga Sandy Loam
C	0.09
CN (Nashyd)	46.6

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	0.57	ha
Impervious Area	0.00	ha
Percent Impervious	0.0%	
Connected Impervious	0.0%	

Pervious

Length	70	m
US Elev	211.50	m
DS Elev	210.50	m
Slope	1.4	%
	Flat	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Impervious	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	A	0.19	0.10	0.05	0.05	0.05	0.57	0.90	0.09	n.a.
SCS Curve No.[3], CN	A	66	49	39	36	50	76	98	46.6	46.6
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	8.4	8.4

Time of Concentration[6]

Pervious Length	70	m
Slope	1.4	%
Airport	24.5	min.
Bransby - Williams	3.9	min.
Applicable Minimum[7]	10.0	min.
Time to Peak	16.4	min.
	0.27	hr.

Flat: 0-2% Slopes
Rolling: 2-6% Slopes
Hilly: >6% Slopes

Composite Parameters

Drainage Area	0.57 ha	
Runoff Coefficient	0.09	
SCS Curve No.	46.6	46.6
Modified Curve No.[4], CN*	45.7	45.7
Initial Abstraction.	8.4	8.4

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Use Airport Equation to calculate time of concentration for C <= 0.4, and Bransby-Williams for C > 0.4.
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 10 minutes
8. All impervious areas have been assumed to be directly connected.

Hydrologic Parameters for PR-101

Sheet 1 of 1

WILLS

Project No: 85312
Project Name: Thomas Self Storage Facility
Designed/Checked By: NN & AS / CP
Date: 10-Jul-24

Land Use

	PR-101	
Agriculture	0.00	ha
Range	0.00	ha
Grass	0.30	ha
Woods	0.01	ha
Wetland	0.00	ha
Gravel	0.03	ha
Impervious	0.08	ha
SUM	**0.41**	

Hydrologic Soil Group[1]	B
Soil Type	Otonabee Loam
C	0.32
CN (Nashyd)	69.5

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	0.41	ha
Impervious Area	0.08	ha
Percent Impervious	18.3%	
Connected Impervious	18.3%	

	Pervious	Impervious	
Length	70	45	m
US Elev	208.00	208.33	m
DS Elev	206.00	207.00	m
Slope	2.9	3.0	%
	Rolling	Rolling	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Impervious	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	B	0.32	0.22	0.13	0.11	0.05	0.76	0.90	0.32	n.a.
SCS Curve No.[3], CN	B	74	65	61	58	50	85	98	69.5	63.1
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	4.4	4.9

Time of Concentration[6]

Pervious Length	70	m
Slope	2.9	%
Airport	15.1	min.
Bransby - Williams	3.5	min.
Applicable Minimum[7]	10.0	min.
Time to Peak	10.1	min.
	0.17	hr.

Flat: 0-2% Slopes
Rolling: 2-6% Slopes
Hilly: >6% Slopes

Composite Parameters

Drainage Area	0.41 ha	
Runoff Coefficient	0.32	
SCS Curve No.	69.5	63.1
Modified Curve No.[4], CN*	70.5	63.2
Initial Abstraction.	4.4	4.9

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Use Airport Equation to calculate time of concentration for C <= 0.4, and Bransby-Williams for C > 0.4.
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 10 minutes
8. All impervious areas have been assumed to be directly connected.

Hydrologic Parameters for PR-102 IMP

Sheet 1 of 1

WILLS

Project No: 85312
Project Name: Thomas Self Storage Facility
Designed/Checked By: NN & AS / CP
Date: 10-Jul-24

Land Use

	PR-102	PR-102	
Agriculture	0.00	0.00	ha
Range	0.00	0.00	ha
Grass	0.18	0.37	ha
Woods	0.01	0.03	ha
Wetland	0.00	0.00	ha
Gravel	0.00	0.00	ha
Impervious	0.29	0.69	ha
SUM	0.48	1.08	
Hydrologic Soil Group[1]	B	A	
Soil Type	Otonabee Loam	Tioga Sandy Loam	
C	0.58	0.59	
CN (Nashyd)	83.6	76.4	

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	1.56	ha
Impervious Area	0.98	ha
Percent Impervious	62.8%	
Connected Impervious	62.8%	

	Pervious	Impervious	
Length	240	25	m
US Elev	209.40	210.00	m
DS Elev	208.10	209.70	m
Slope	0.5	1.2	%
	Flat	Flat	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Impervious	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	B	0.26	0.14	0.08	0.08	0.05	0.76	0.90	0.58	n.a.
	A	0.19	0.10	0.05	0.05	0.05	0.57	0.90	0.59	
SCS Curve No.[3], CN	B	74	65	61	58	50	85	98	83.6	60.8
	A	66	49	39	36	50	76	98	76.4	38.8
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	3.2	5.3

Time of Concentration[6]

Total Length	265	m	
Average Slope	0.6	%	
Airport	32.1	min.	
Bransby - Williams	16.0	min.	Flat: 0-2% Slopes Rolling: 2-6% Slopes Hilly: >6% Slopes
Applicable Minimum[7]	10.0	min.	
Time to Peak	10.7	min.	
	0.18	hr.	

Composite Parameters

Drainage Area	1.56 ha	
Runoff Coefficient	0.59	
SCS Curve No.	78.6	45.9
Modified Curve No.[4], CN*	78.6	42.6
Initial Abstraction.	3.2	5.3

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Use Airport Equation to calculate time of concentration for C <= 0.4, and Bransby-Williams for C > 0.4.
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 10 minutes
8. All impervious areas have been assumed to be directly connected.

Hydrologic Parameters for PR-102

Sheet 1 of 1

WILLS

Project No: 85312
Project Name: Thomas Self Storage Facility
Designed/Checked By: NN & AS / CP
Date: 10-Jul-24

Land Use

	PR-102	PR-102	
Agriculture	0.00	0.00	ha
Range	0.00	0.00	ha
Grass	0.18	0.37	ha
Woods	0.01	0.03	ha
Wetland	0.00	0.00	ha
Gravel	0.20	0.54	ha
Impervious	0.09	0.15	ha
SUM	0.48	1.08	
Hydrologic Soil Group[1]	B	A	
Soil Type	Otonabee Loam	Tioga Sandy Loam	
C	0.52	0.43	
CN (Nashyd)	78.1	65.5	

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	1.56	ha
Impervious Area	0.24	ha
Percent Impervious	15.7%	
Connected Impervious	15.7%	

	Pervious	Impervious	
Length	240	25	m
US Elev	209.40	210.00	m
DS Elev	208.10	209.70	m
Slope	0.5	1.2	%
	Flat	Flat	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Impervious	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	B	0.26	0.14	0.08	0.08	0.05	0.76	0.90	0.52	
	A	0.19	0.10	0.05	0.05	0.05	0.57	0.90	0.43	n.a.
SCS Curve No.[3], CN	B	74	65	61	58	50	85	98	78.1	73.3
	A	66	49	39	36	50	76	98	65.5	60.2
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	3.5	3.7

Time of Concentration[6]

Total Length	265	m
Average Slope	0.6	%
Airport	40.4	min.
Bransby - Williams	16.0	min.
Applicable Minimum[7]	10.0	min.
Time to Peak	10.7	min.
	0.18	hr.

Flat: 0-2% Slopes
Rolling: 2-6% Slopes
Hilly: >6% Slopes

Composite Parameters

Drainage Area	1.56 ha	
Runoff Coefficient	0.46	
SCS Curve No.	69.4	64.1
Modified Curve No.[4], CN*	69.4	63.6
Initial Abstraction.	3.5	3.7

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Use Airport Equation to calculate time of concentration for C <= 0.4, and Bransby-Williams for C > 0.4.
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 10 minutes
8. All impervious areas have been assumed to be directly connected.

Hydrologic Parameters for PR-103

Sheet 1 of 1

WILLS

Project No: 85312
Project Name: Thomas Self Storage Facility
Designed/Checked By: NN & AS / CP
Date: 10-Jul-24

Land Use

	PR-103	
Agriculture	0.00	ha
Range	0.00	ha
Grass	0.03	ha
Woods	0.00	ha
Wetland	0.00	ha
Gravel	0.00	ha
Impervious	0.00	ha
SUM	0.03	

Hydrologic Soil Group[1]	B
Soil Type	Otonabee Loam
C	0.08
CN (Nashyd)	61.0

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	0.03	ha
Impervious Area	0.00	ha
Percent Impervious	0.0%	
Connected Impervious	0.0%	

Pervious

Length	58	m
US Elev	206.82	m
DS Elev	206.00	m
Slope	1.4	%
	Flat	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Impervious	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	B	0.26	0.14	0.08	0.08	0.05	0.76	0.90	0.08	n.a.
SCS Curve No.[3], CN	B	74	65	61	58	50	85	98	61.0	61.0
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	5.0	5.0

Time of Concentration[6]

Pervious Length	58	m
Slope	1.4	%
Airport	22.6	min.
Bransby - Williams	4.4	min.
Applicable Minimum[7]	10.0	min.
Time to Peak	15.1	min.
	0.25	hr.

Flat: 0-2% Slopes
Rolling: 2-6% Slopes
Hilly: >6% Slopes

Composite Parameters

Drainage Area	0.03 ha	
Runoff Coefficient	0.08	
SCS Curve No.	61.0	61.0
Modified Curve No.[4], CN*	60.5	60.5
Initial Abstraction.	5.0	5.0

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Use Airport Equation to calculate time of concentration for C <= 0.4, and Bransby-Williams for C > 0.4.
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 10 minutes
8. All impervious areas have been assumed to be directly connected.

Thomas Self Storage - Soils Map

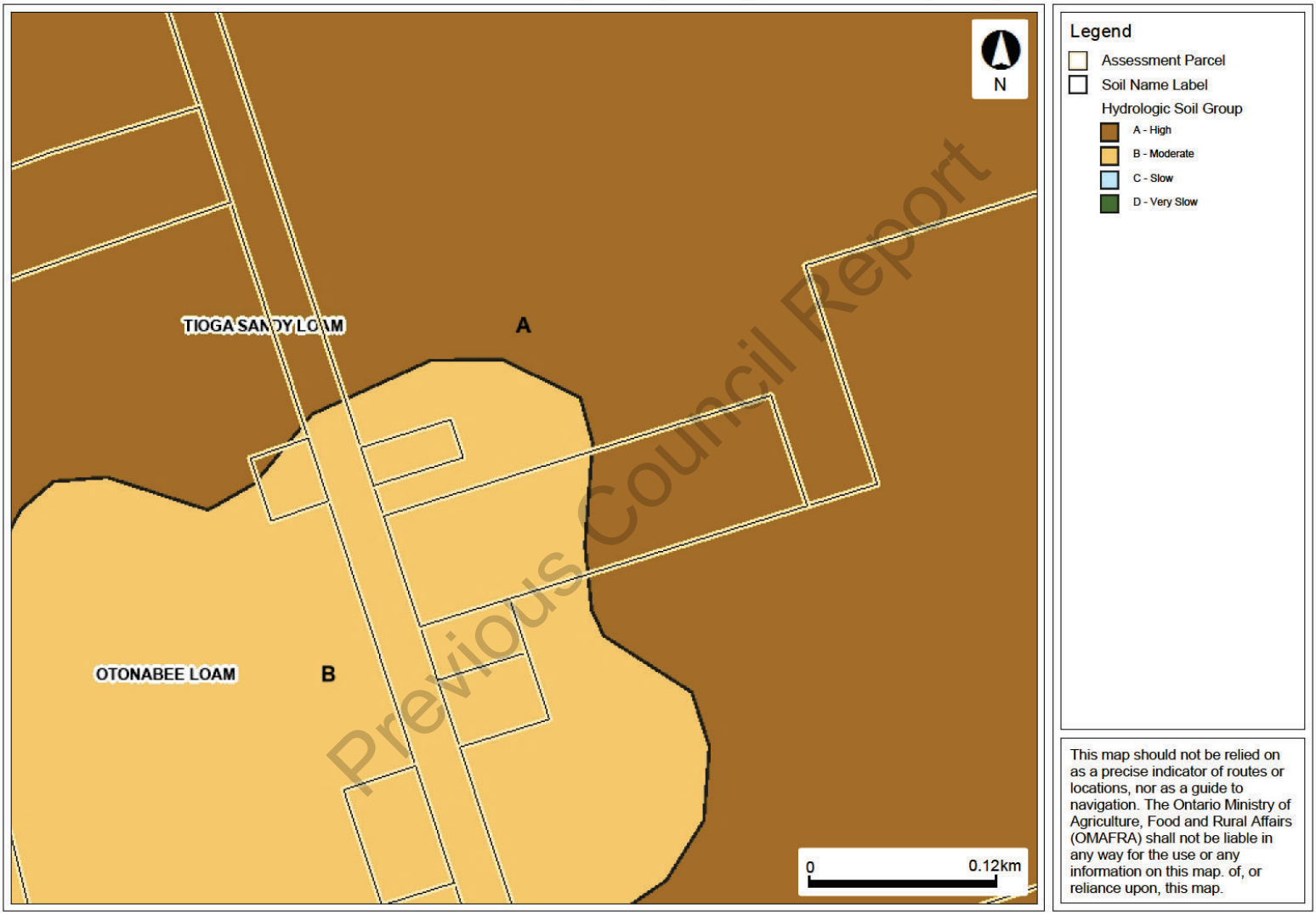
Legend

- Assessment Parcel
- Soil Name Label

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) shall not be liable in any way for the use or any information on this map. of, or reliance upon, this map.

Map Created: 7/18/2024
Map Center: 44.41379 N, -77.88189 W

Thomas Self Storage - Hydrologic Soil Group Map

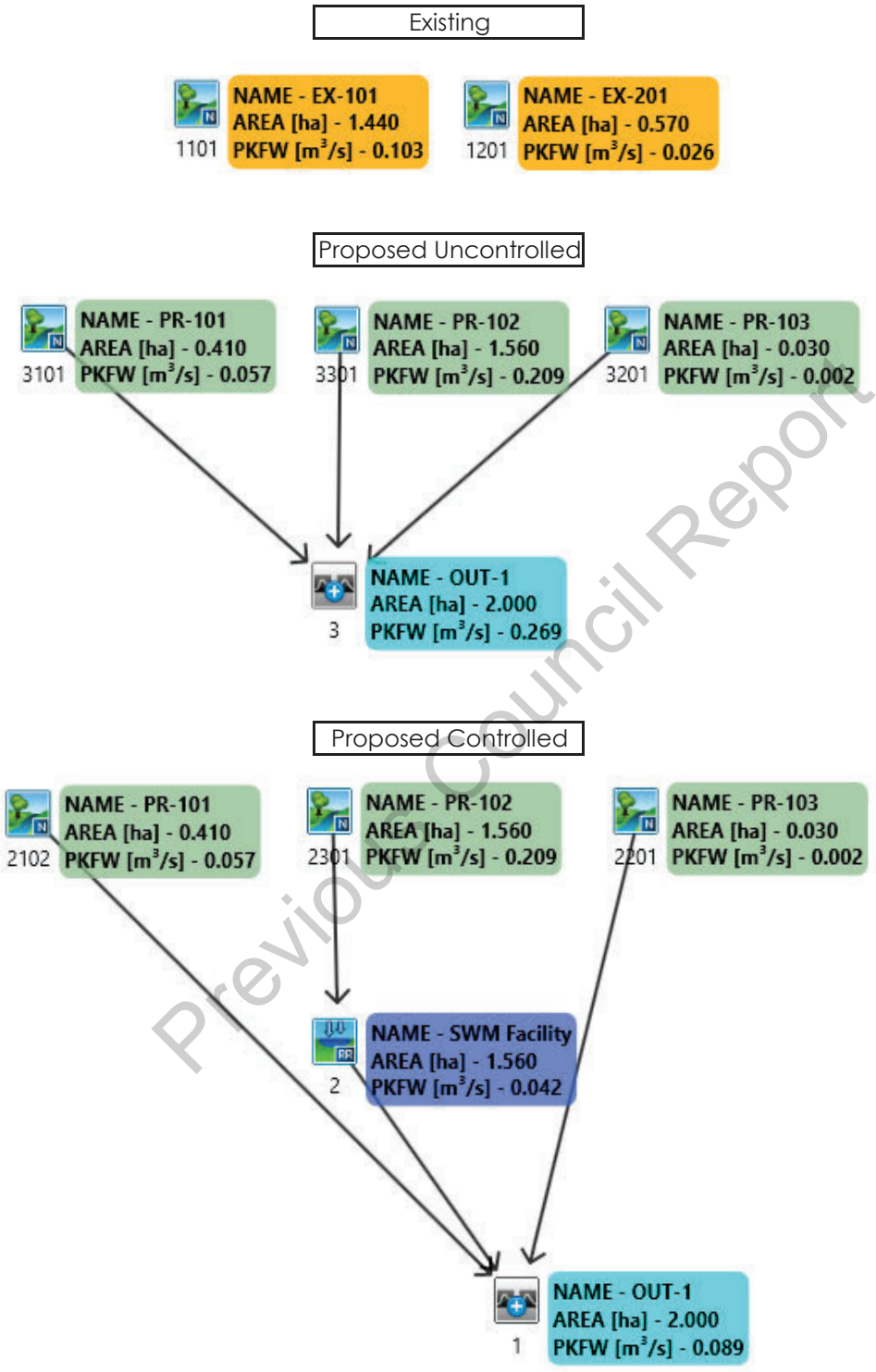


Map Created: 7/18/2024
Map Center: 44.41379 N, -77.88189 W

Appendix B

Hydrologic Model Configuration and Results

Visual Otthymo Model Configuration



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        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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  Output  filename:
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rio.out
  Summary filename:
C:\Users\nnapper\AppData\Local\Temp\e9dbd76a-149b-4a10-9af7-3ee318115b78\Scena
rio.sum


DATE: 07/18/2024                          TIME: 11:29:05

USER:



COMMENTS: _____________________________________________________________


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  ** SIMULATION NUMBER:   1 **
  ****************************


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|                  |              ata\Local\Temp\
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|                  |
e9dbd76a-149b-4a10-9af7-3ee318115b78\c32d7f87
| Ptotal= 15.00 mm |    Comments: 15 mm, 6 hour SCS Type II, Custom Gauge:
--------------------
                TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
                 hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
                0.25     0.60 |  1.75     1.50 |  3.25     3.30 |  4.75     0.90
                0.50     0.60 |  2.00     1.50 |  3.50     3.30 |  5.00     0.90
                0.75     0.90 |  2.25     1.80 |  3.75     1.50 |  5.25     0.60
                1.00     0.90 |  2.50     1.80 |  4.00     1.50 |  5.50     0.60
                1.25     0.90 |  2.75     9.00 |  4.25     1.20 |  5.75     0.60
                1.50     0.90 |  3.00    23.40 |  4.50     1.20 |  6.00     0.60

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-

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| CALIB            |
| NASHYD    (1101) |   Area    (ha)=   1.44   Curve Number   (CN)= 61.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

      NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME     RAIN |  TIME     RAIN |'  TIME     RAIN |  TIME     RAIN
                 hrs    mm/hr |   hrs    mm/hr |'   hrs    mm/hr |   hrs    mm/hr
               0.083     0.60 | 1.583     1.50 | 3.083     3.30 |  4.58     0.90
               0.167     0.60 | 1.667     1.50 | 3.167     3.30 |  4.67     0.90
               0.250     0.60 | 1.750     1.50 | 3.250     3.30 |  4.75     0.90
               0.333     0.60 | 1.833     1.50 | 3.333     3.30 |  4.83     0.90
               0.417     0.60 | 1.917     1.50 | 3.417     3.30 |  4.92     0.90
               0.500     0.60 | 2.000     1.50 | 3.500     3.30 |  5.00     0.90
               0.583     0.90 | 2.083     1.80 | 3.583     1.50 |  5.08     0.60
               0.667     0.90 | 2.167     1.80 | 3.667     1.50 |  5.17     0.60
               0.750     0.90 | 2.250     1.80 | 3.750     1.50 |  5.25     0.60
               0.833     0.90 | 2.333     1.80 | 3.833     1.50 |  5.33     0.60
               0.917     0.90 | 2.417     1.80 | 3.917     1.50 |  5.42     0.60
               1.000     0.90 | 2.500     1.80 | 4.000     1.50 |  5.50     0.60
               1.083     0.90 | 2.583     9.00 | 4.083     1.20 |  5.58     0.60
               1.167     0.90 | 2.667     9.00 | 4.167     1.20 |  5.67     0.60
               1.250     0.90 | 2.750     9.00 | 4.250     1.20 |  5.75     0.60
               1.333     0.90 | 2.833    23.40 | 4.333     1.20 |  5.83     0.60
               1.417     0.90 | 2.917    23.40 | 4.417     1.20 |  5.92     0.60
               1.500     0.90 | 3.000    23.40 | 4.500     1.20 |  6.00     0.60

    Unit Hyd Qpeak  (cms)=   0.183

    PEAK FLOW       (cms)=   0.001 (i)
    TIME TO PEAK    (hrs)=   3.417
    RUNOFF VOLUME    (mm)=   0.349
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     TOTAL RAINFALL   (mm)=  15.000
     RUNOFF COEFFICIENT   =   0.023

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (1201) |   Area    (ha)=   0.57   Curve Number   (CN)= 45.7
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   0.081

     PEAK FLOW       (cms)=   0.000 (i)
     TIME TO PEAK    (hrs)=   3.500
     RUNOFF VOLUME    (mm)=   0.140
     TOTAL RAINFALL   (mm)=  15.000
     RUNOFF COEFFICIENT   =   0.009

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2102) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.001 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=   0.957
     TOTAL RAINFALL   (mm)=  15.000
     RUNOFF COEFFICIENT   =   0.064

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.000 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=   0.398
     TOTAL RAINFALL   (mm)=  15.000
     RUNOFF COEFFICIENT   =   0.027

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.005 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=   1.068
     TOTAL RAINFALL   (mm)=  15.000
     RUNOFF COEFFICIENT   =   0.071

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| RESERVOIR (0002) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0277      0.0178
                          0.0001     0.0055   |   0.0310      0.0205
                          0.0029     0.0075   |   0.0346      0.0239
                          0.0115     0.0101   |   0.0373      0.0269
                          0.0183     0.0124   |   0.0403      0.0306
                          0.0238     0.0153   |   0.0427      0.0339

                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (2301)      1.560     0.005      3.08       1.07
     OUTFLOW: ID= 1 (0002)      1.560     0.000      6.50       0.02

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)=  0.54
                    TIME SHIFT OF PEAK FLOW         (min)=205.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0016

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| ADD HYD   (0001) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0002):     1.56   0.000     6.50     0.02
        + ID2= 2 (2102):    0.41   0.001     3.08     0.96
          ================================================
          ID = 3 (0001):    1.97   0.001     3.08     0.22

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| ADD HYD   (0001) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0001):     1.97   0.001     3.08     0.22
        + ID2= 2 (2201):    0.03   0.000     3.17     0.40
          ================================================
          ID = 1 (0001):    2.00   0.001     3.08     0.22

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-------------------
| CALIB            |
| NASHYD    (3301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.005 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=   1.068
     TOTAL RAINFALL   (mm)=  15.000
     RUNOFF COEFFICIENT   =   0.071

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB            |
| NASHYD    (3101) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.001 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=   0.957
     TOTAL RAINFALL   (mm)=  15.000
     RUNOFF COEFFICIENT   =   0.064

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| CALIB
| NASHYD    (3201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.000 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=   0.398
     TOTAL RAINFALL   (mm)=  15.000
     RUNOFF COEFFICIENT   =   0.027

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-------------------
| ADD HYD   (0003) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (3101):     0.41   0.001     3.08     0.96
        + ID2= 2 (3201):    0.03   0.000     3.17     0.40
          ================================================
          ID = 3 (0003):    0.44   0.001     3.08     0.92

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0003) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0003):     0.44   0.001     3.08     0.92
        + ID2= 2 (3301):    1.56   0.005     3.08     1.07
          ================================================
          ID = 1 (0003):    2.00   0.007     3.08     1.03
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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****
** SIMULATION NUMBER: 2 **
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| READ STORM | Filename: C:\Users\nnapper\AppD

| | ata\Local\Temp\

| |
e9dbd76a-149b-4a10-9af7-3ee318115b78\2bff6339
| Ptotal= 38.75 mm | Comments: 2-Year, 6 hour SCS Type II - Peterboroug
---

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	1.60	1.75	3.90	3.25	8.50	4.75	2.30
0.50	1.60	2.00	3.90	3.50	8.50	5.00	2.30
0.75	2.30	2.25	4.60	3.75	3.90	5.25	1.60
1.00	2.30	2.50	4.60	4.00	3.90	5.50	1.60
1.25	2.30	2.75	23.20	4.25	3.10	5.75	1.60
1.50	2.30	3.00	60.40	4.50	3.10	6.00	1.60

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| CALIB |
| NASHYD (1101) | Area (ha)= 1.44 Curve Number (CN)= 61.1
|ID= 1 DT= 5.0 min | Ia (mm)= 7.30 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.30

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.60	1.583	3.90	3.083	8.50	4.58	2.30
0.167	1.60	1.667	3.90	3.167	8.50	4.67	2.30
0.250	1.60	1.750	3.90	3.250	8.50	4.75	2.30
0.333	1.60	1.833	3.90	3.333	8.50	4.83	2.30
0.417	1.60	1.917	3.90	3.417	8.50	4.92	2.30
0.500	1.60	2.000	3.90	3.500	8.50	5.00	2.30
0.583	2.30	2.083	4.60	3.583	3.90	5.08	1.60
0.667	2.30	2.167	4.60	3.667	3.90	5.17	1.60
0.750	2.30	2.250	4.60	3.750	3.90	5.25	1.60
0.833	2.30	2.333	4.60	3.833	3.90	5.33	1.60
0.917	2.30	2.417	4.60	3.917	3.90	5.42	1.60
1.000	2.30	2.500	4.60	4.000	3.90	5.50	1.60
1.083	2.30	2.583	23.20	4.083	3.10	5.58	1.60
1.167	2.30	2.667	23.20	4.167	3.10	5.67	1.60
1.250	2.30	2.750	23.20	4.250	3.10	5.75	1.60
1.333	2.30	2.833	60.40	4.333	3.10	5.83	1.60
1.417	2.30	2.917	60.40	4.417	3.10	5.92	1.60
1.500	2.30	3.000	60.40	4.500	3.10	6.00	1.60

Unit Hyd Qpeak (cms)= 0.183

PEAK FLOW (cms)= 0.017 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 5.118
TOTAL RAINFALL (mm)= 38.750
RUNOFF COEFFICIENT = 0.132

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB |
| NASHYD (1201) | Area (ha)= 0.57 Curve Number (CN)= 45.7
|ID= 1 DT= 5.0 min | Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.081

PEAK FLOW (cms)= 0.004 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 2.771
TOTAL RAINFALL (mm)= 38.750
RUNOFF COEFFICIENT = 0.071

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB |
| NASHYD (2102) | Area (ha)= 0.41 Curve Number (CN)= 70.5
|ID= 1 DT= 5.0 min | Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
--- U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.092

PEAK FLOW (cms)= 0.012 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 8.359
TOTAL RAINFALL (mm)= 38.750
RUNOFF COEFFICIENT = 0.216

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     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.000 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=   5.671
     TOTAL RAINFALL   (mm)=  38.750
     RUNOFF COEFFICIENT   =   0.146

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (2301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.046 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=   8.414
     TOTAL RAINFALL   (mm)=  38.750
     RUNOFF COEFFICIENT   =   0.217

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR (0002) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)    |    (cms)     (ha.m.)
                         0.0000     0.0000     |   0.0277     0.0178
                         0.0001     0.0055     |   0.0310     0.0205
                         0.0029     0.0075     |   0.0346     0.0239
                         0.0115     0.0101     |   0.0373     0.0269
                         0.0183     0.0124     |   0.0403     0.0306
                         0.0238     0.0153     |   0.0427     0.0339
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                                AREA     QPEAK     TPEAK       R.V.
                                (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (2301)      1.560     0.046     3.08        8.41
     OUTFLOW: ID= 1 (0002)      1.560     0.007     4.08        4.82

                   PEAK   FLOW   REDUCTION [Qout/Qin](%)= 14.19
                   TIME SHIFT OF PEAK FLOW         (min)= 60.00
                   MAXIMUM  STORAGE   USED       (ha.m.)=  0.0086

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| ADD HYD   (0001) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0002):    1.56   0.007     4.08     4.82
        + ID2= 2 (2102):    0.41   0.012     3.08     8.36
          ================================================
          ID = 3 (0001):    1.97   0.012     3.08     5.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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------------------
| ADD HYD   (0001) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0001):    1.97   0.012     3.08     5.56
        + ID2= 2 (2201):    0.03   0.000     3.17     5.67
          ================================================
          ID = 1 (0001):    2.00   0.013     3.08     5.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-
--------------------
| CALIB            |
| NASHYD    (3301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.046 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=   8.414
     TOTAL RAINFALL   (mm)=  38.750
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     RUNOFF COEFFICIENT   =   0.217

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (3101) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.012 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=   8.359
     TOTAL RAINFALL   (mm)=  38.750
     RUNOFF COEFFICIENT   =   0.216

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (3201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.000 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=   5.671
     TOTAL RAINFALL   (mm)=  38.750
     RUNOFF COEFFICIENT   =   0.146

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0003) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (3101):     0.41   0.012     3.08     8.36
        + ID2= 2 (3201):    0.03   0.000     3.17     5.67
          ================================================
          ID = 3 (0003):    0.44   0.013     3.08     8.18

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0003) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
-------------------          (ha)    (cms)    (hrs)     (mm)
         ID1= 3 (0003):     0.44   0.013     3.08     8.18
        + ID2= 2 (3301):    1.56   0.046     3.08     8.41
          ================================================
          ID = 1 (0003):    2.00   0.059     3.08     8.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 ****************************
 ** SIMULATION NUMBER:   3 **
 ****************************


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|    READ STORM    |    Filename: C:\Users\nnapper\AppD

|                  |              ata\Local\Temp\

|                  |
e9dbd76a-149b-4a10-9af7-3ee318115b78\198b3742
| Ptotal= 52.45 mm |    Comments: 5-Year, 6 hour SCS Type II - Peterboroug
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.10 |  1.75    5.20 |  3.25   11.50 |  4.75    3.20
                0.50    2.10 |  2.00    5.20 |  3.50   11.50 |  5.00    3.20
                0.75    3.20 |  2.25    6.30 |  3.75    5.20 |  5.25    2.10
                1.00    3.20 |  2.50    6.30 |  4.00    5.20 |  5.50    2.10
                1.25    3.20 |  2.75   31.40 |  4.25    4.20 |  5.75    2.10
                1.50    3.20 |  3.00   81.80 |  4.50    4.20 |  6.00    2.10

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| CALIB            |
| NASHYD    (1101) |   Area    (ha)=   1.44   Curve Number   (CN)= 61.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.
```

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.10	1.583	5.20	3.083	11.50	4.58	3.20
0.167	2.10	1.667	5.20	3.167	11.50	4.67	3.20
0.250	2.10	1.750	5.20	3.250	11.50	4.75	3.20
0.333	2.10	1.833	5.20	3.333	11.50	4.83	3.20
0.417	2.10	1.917	5.20	3.417	11.50	4.92	3.20
0.500	2.10	2.000	5.20	3.500	11.50	5.00	3.20
0.583	3.20	2.083	6.30	3.583	5.20	5.08	2.10
0.667	3.20	2.167	6.30	3.667	5.20	5.17	2.10
0.750	3.20	2.250	6.30	3.750	5.20	5.25	2.10
0.833	3.20	2.333	6.30	3.833	5.20	5.33	2.10
0.917	3.20	2.417	6.30	3.917	5.20	5.42	2.10
1.000	3.20	2.500	6.30	4.000	5.20	5.50	2.10
1.083	3.20	2.583	31.40	4.083	4.20	5.58	2.10
1.167	3.20	2.667	31.40	4.167	4.20	5.67	2.10
1.250	3.20	2.750	31.40	4.250	4.20	5.75	2.10
1.333	3.20	2.833	81.80	4.333	4.20	5.83	2.10
1.417	3.20	2.917	81.80	4.417	4.20	5.92	2.10
1.500	3.20	3.000	81.80	4.500	4.20	6.00	2.10

Unit Hyd Qpeak (cms)= 0.183

PEAK FLOW (cms)= 0.035 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 9.850
TOTAL RAINFALL (mm)= 52.450
RUNOFF COEFFICIENT = 0.188

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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CALIB	
NASHYD (1201)	Area (ha)= 0.57 Curve Number (CN)= 45.7
ID= 1 DT= 5.0 min	Ia (mm)= 8.40 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.27

Unit Hyd Qpeak (cms)= 0.081

PEAK FLOW (cms)= 0.008 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 5.606
TOTAL RAINFALL (mm)= 52.450
RUNOFF COEFFICIENT = 0.107

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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CALIB	
NASHYD (2102)	Area (ha)= 0.41 Curve Number (CN)= 70.5
ID= 1 DT= 5.0 min	Ia (mm)= 4.40 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.17

Unit Hyd Qpeak (cms)= 0.092

PEAK FLOW (cms)= 0.022 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 14.906
TOTAL RAINFALL (mm)= 52.450
RUNOFF COEFFICIENT = 0.284

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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CALIB	
NASHYD (2201)	Area (ha)= 0.03 Curve Number (CN)= 60.5
ID= 1 DT= 5.0 min	Ia (mm)= 5.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.25

Unit Hyd Qpeak (cms)= 0.005

PEAK FLOW (cms)= 0.001 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 10.514
TOTAL RAINFALL (mm)= 52.450
RUNOFF COEFFICIENT = 0.200

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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CALIB	
NASHYD (2301)	Area (ha)= 1.56 Curve Number (CN)= 69.4
ID= 1 DT= 5.0 min	Ia (mm)= 3.50 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.18

Unit Hyd Qpeak (cms)= 0.331

PEAK FLOW (cms)= 0.082 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 14.845
TOTAL RAINFALL (mm)= 52.450
RUNOFF COEFFICIENT = 0.283

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| RESERVOIR (0002) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0277      0.0178
                          0.0001     0.0055   |   0.0310      0.0205
                          0.0029     0.0075   |   0.0346      0.0239
                          0.0115     0.0101   |   0.0373      0.0269
                          0.0183     0.0124   |   0.0403      0.0306
                          0.0238     0.0153   |   0.0427      0.0339

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (2301)     1.560      0.082      3.08      14.84
     OUTFLOW: ID= 1 (0002)     1.560      0.019      3.67      11.25

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 23.39
                    TIME SHIFT OF PEAK FLOW         (min)= 35.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0129

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| ADD HYD   (0001) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0002):     1.56   0.019     3.67    11.25
        + ID2= 2 (2102):     0.41   0.022     3.08    14.91
          ================================================
          ID = 3 (0001):     1.97   0.027     3.25    12.01

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0001) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0001):     1.97   0.027     3.25    12.01
        + ID2= 2 (2201):     0.03   0.001     3.17    10.51
          ================================================
          ID = 1 (0001):     2.00   0.028     3.25    11.99

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| CALIB            |
| NASHYD    (3301) |   Area     (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia       (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.082 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  14.845
     TOTAL RAINFALL   (mm)=  52.450
     RUNOFF COEFFICIENT   =   0.283

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (3101) |   Area     (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia       (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.022 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  14.906
     TOTAL RAINFALL   (mm)=  52.450
     RUNOFF COEFFICIENT   =   0.284

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (3201) |   Area     (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia       (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.001 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=  10.514
     TOTAL RAINFALL   (mm)=  52.450
     RUNOFF COEFFICIENT   =   0.200
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(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3		(ha)	(cms)	(hrs)	(mm)
	ID1= 1 (3101):	0.41	0.022	3.08	14.91
	+ ID2= 2 (3201):	0.03	0.001	3.17	10.51
	ID = 3 (0003):	0.44	0.023	3.08	14.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD (0003)		AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1		(ha)	(cms)	(hrs)	(mm)
	ID1= 3 (0003):	0.44	0.023	3.08	14.61
	+ ID2= 2 (3301):	1.56	0.082	3.08	14.84
	ID = 1 (0003):	2.00	0.105	3.08	14.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

**** SIMULATION NUMBER: 4 **

READ STORM	Filename: C:\Users\nnapper\AppD ata\Local\Temp\ e9dbd76a-149b-4a10-9af7-3ee318115b78\955f81f2
Ptotal= 61.60 mm	Comments: 10-Year, 6 hour SCS Type II - Peterborou

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.25	2.50	1.75	6.20	3.25	13.50	4.75	3.70
0.50	2.50	2.00	6.20	3.50	13.50	5.00	3.70
0.75	3.70	2.25	7.40	3.75	6.20	5.25	2.50
1.00	3.70	2.50	7.40	4.00	6.20	5.50	2.50
1.25	3.70	2.75	36.90	4.25	4.90	5.75	2.50
1.50	3.70	3.00	95.90	4.50	4.90	6.00	2.50

CALIB					
NASHYD (1101)	Area (ha)= 1.44	Curve Number (CN)= 61.1			
ID= 1 DT= 5.0 min	Ia (mm)= 7.30	# of Linear Res.(N)= 3.00			
	U.H. Tp(hrs)= 0.30				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.50	1.583	6.20	3.083	13.50	4.58	3.70
0.167	2.50	1.667	6.20	3.167	13.50	4.67	3.70
0.250	2.50	1.750	6.20	3.250	13.50	4.75	3.70
0.333	2.50	1.833	6.20	3.333	13.50	4.83	3.70
0.417	2.50	1.917	6.20	3.417	13.50	4.92	3.70
0.500	2.50	2.000	6.20	3.500	13.50	5.00	3.70
0.583	3.70	2.083	7.40	3.583	6.20	5.08	2.50
0.667	3.70	2.167	7.40	3.667	6.20	5.17	2.50
0.750	3.70	2.250	7.40	3.750	6.20	5.25	2.50
0.833	3.70	2.333	7.40	3.833	6.20	5.33	2.50
0.917	3.70	2.417	7.40	3.917	6.20	5.42	2.50
1.000	3.70	2.500	7.40	4.000	6.20	5.50	2.50
1.083	3.70	2.583	36.90	4.083	4.90	5.58	2.50
1.167	3.70	2.667	36.90	4.167	4.90	5.67	2.50
1.250	3.70	2.750	36.90	4.250	4.90	5.75	2.50
1.333	3.70	2.833	95.90	4.333	4.90	5.83	2.50
1.417	3.70	2.917	95.90	4.417	4.90	5.92	2.50
1.500	3.70	3.000	95.90	4.500	4.90	6.00	2.50

Unit Hyd Qpeak (cms)= 0.183

PEAK FLOW (cms)= 0.049 (i)
TIME TO PEAK (hrs)= 3.167
RUNOFF VOLUME (mm)= 13.644
TOTAL RAINFALL (mm)= 61.600
RUNOFF COEFFICIENT = 0.221

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
NASHYD (1201)	Area (ha)= 0.57	Curve Number (CN)= 45.7			

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|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.40   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   0.081

     PEAK FLOW       (cms)=   0.012 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=   7.967
     TOTAL RAINFALL   (mm)=  61.600
     RUNOFF COEFFICIENT   =   0.129

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2102) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.030 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  19.941
     TOTAL RAINFALL   (mm)=  61.600
     RUNOFF COEFFICIENT   =   0.324

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.001 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=  14.363
     TOTAL RAINFALL   (mm)=  61.600
     RUNOFF COEFFICIENT   =   0.233

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
-------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.109 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  19.788
     TOTAL RAINFALL   (mm)=  61.600
     RUNOFF COEFFICIENT   =   0.321

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| RESERVOIR (0002) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
-------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0277      0.0178
                          0.0001     0.0055   |   0.0310      0.0205
                          0.0029     0.0075   |   0.0346      0.0239
                          0.0115     0.0101   |   0.0373      0.0269
                          0.0183     0.0124   |   0.0403      0.0306
                          0.0238     0.0153   |   0.0427      0.0339

                                 AREA     QPEAK     TPEAK       R.V.
                                 (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (2301)      1.560     0.109      3.08      19.79
     OUTFLOW: ID= 1 (0002)      1.560     0.026      3.67      16.20

               PEAK   FLOW   REDUCTION [Qout/Qin](%)= 23.72
               TIME SHIFT OF PEAK FLOW         (min)= 35.00
               MAXIMUM  STORAGE   USED       (ha.m.)=  0.0167

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| ADD HYD   (0001) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
-------------------         (ha)    (cms)    (hrs)     (mm)
         ID1= 1 (0002):     1.56   0.026     3.67    16.20
       + ID2= 2 (2102):     0.41   0.030     3.08    19.94
         ================================================
         ID = 3 (0001):     1.97   0.042     3.17    16.98

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.
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| ADD HYD   (0001) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0001):     1.97   0.042     3.17    16.98
        + ID2= 2 (2201):     0.03   0.001     3.17    14.36
          ================================================
          ID = 1 (0001):     2.00   0.043     3.17    16.94

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| CALIB            |
| NASHYD    (3301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.109 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  19.788
     TOTAL RAINFALL   (mm)=  61.600
     RUNOFF COEFFICIENT   =   0.321

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (3101) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.030 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  19.941
     TOTAL RAINFALL   (mm)=  61.600
     RUNOFF COEFFICIENT   =   0.324

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (3201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.001 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=  14.363
     TOTAL RAINFALL   (mm)=  61.600
     RUNOFF COEFFICIENT   =   0.233

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| ADD HYD   (0003) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (3101):     0.41   0.030     3.08    19.94
        + ID2= 2 (3201):     0.03   0.001     3.17    14.36
          ================================================
          ID = 3 (0003):     0.44   0.031     3.08    19.56

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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| ADD HYD   (0003) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0003):     0.44   0.031     3.08    19.56
        + ID2= 2 (3301):     1.56   0.109     3.08    19.79
          ================================================
          ID = 1 (0003):     2.00   0.140     3.08    19.74

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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  ** SIMULATION NUMBER:   5 **
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|    READ STORM    |    Filename: C:\Users\nnapper\AppD

|                  |              ata\Local\Temp\

|                  |
e9dbd76a-149b-4a10-9af7-3ee318115b78\28adcdbb
| Ptotal= 72.90 mm |    Comments: 25-Year, 6 hour SCS Type II - Peterborou
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.90 |  1.75    7.30 |  3.25   16.00 |  4.75    4.40
                0.50    2.90 |  2.00    7.30 |  3.50   16.00 |  5.00    4.40
                0.75    4.40 |  2.25    8.80 |  3.75    7.30 |  5.25    2.90
                1.00    4.40 |  2.50    8.80 |  4.00    7.30 |  5.50    2.90
                1.25    4.40 |  2.75   43.70 |  4.25    5.80 |  5.75    2.90
                1.50    4.40 |  3.00  113.70 |  4.50    5.80 |  6.00    2.90

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| CALIB            |
| NASHYD    (1101) |   Area    (ha)=   1.44   Curve Number   (CN)= 61.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    2.90 | 1.583    7.30 | 3.083   16.00 |  4.58    4.40
               0.167    2.90 | 1.667    7.30 | 3.167   16.00 |  4.67    4.40
               0.250    2.90 | 1.750    7.30 | 3.250   16.00 |  4.75    4.40
               0.333    2.90 | 1.833    7.30 | 3.333   16.00 |  4.83    4.40
               0.417    2.90 | 1.917    7.30 | 3.417   16.00 |  4.92    4.40
               0.500    2.90 | 2.000    7.30 | 3.500   16.00 |  5.00    4.40
               0.583    4.40 | 2.083    8.80 | 3.583    7.30 |  5.08    2.90
               0.667    4.40 | 2.167    8.80 | 3.667    7.30 |  5.17    2.90
               0.750    4.40 | 2.250    8.80 | 3.750    7.30 |  5.25    2.90
               0.833    4.40 | 2.333    8.80 | 3.833    7.30 |  5.33    2.90
               0.917    4.40 | 2.417    8.80 | 3.917    7.30 |  5.42    2.90
               1.000    4.40 | 2.500    8.80 | 4.000    7.30 |  5.50    2.90
               1.083    4.40 | 2.583   43.70 | 4.083    5.80 |  5.58    2.90
               1.167    4.40 | 2.667   43.70 | 4.167    5.80 |  5.67    2.90
               1.250    4.40 | 2.750   43.70 | 4.250    5.80 |  5.75    2.90
               1.333    4.40 | 2.833  113.70 | 4.333    5.80 |  5.83    2.90
               1.417    4.40 | 2.917  113.70 | 4.417    5.80 |  5.92    2.90
               1.500    4.40 | 3.000  113.70 | 4.500    5.80 |  6.00    2.90

     Unit Hyd Qpeak  (cms)=   0.183

     PEAK FLOW       (cms)=   0.069 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=  18.924
     TOTAL RAINFALL   (mm)=  72.900
     RUNOFF COEFFICIENT   =   0.260

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (1201) |   Area    (ha)=   0.57   Curve Number   (CN)= 45.7
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   0.081

     PEAK FLOW       (cms)=   0.017 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=  11.350
     TOTAL RAINFALL   (mm)=  72.900
     RUNOFF COEFFICIENT   =   0.156

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2102) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.040 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  26.749
     TOTAL RAINFALL   (mm)=  72.900
     RUNOFF COEFFICIENT   =   0.367

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25
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     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.002 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  19.673
     TOTAL RAINFALL   (mm)=  72.900
     RUNOFF COEFFICIENT   =   0.270

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.147 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  26.476
     TOTAL RAINFALL   (mm)=  72.900
     RUNOFF COEFFICIENT   =   0.363

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR (0002) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0277     0.0178
                          0.0001     0.0055   |   0.0310     0.0205
                          0.0029     0.0075   |   0.0346     0.0239
                          0.0115     0.0101   |   0.0373     0.0269
                          0.0183     0.0124   |   0.0403     0.0306
                          0.0238     0.0153   |   0.0427     0.0339

                               AREA     QPEAK     TPEAK      R.V.
                               (ha)     (cms)     (hrs)      (mm)
     INFLOW : ID= 2 (2301)     1.560     0.147      3.08      26.48
     OUTFLOW: ID= 1 (0002)     1.560     0.033      3.67      22.88

                PEAK   FLOW   REDUCTION [Qout/Qin](%)= 22.47
                TIME SHIFT OF PEAK FLOW       (min)= 35.00
                MAXIMUM  STORAGE   USED      (ha.m.)=  0.0225
```

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--------------------
| ADD HYD   (0001) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0002):     1.56   0.033     3.67    22.88
        + ID2= 2 (2102):     0.41   0.040     3.08    26.75
          ================================================
          ID = 3 (0001):     1.97   0.060     3.08    23.69

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-

--------------------
| ADD HYD   (0001) |
|  3 +  2 =  1     |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0001):     1.97   0.060     3.08    23.69
        + ID2= 2 (2201):     0.03   0.002     3.08    19.67
          ================================================
          ID = 1 (0001):     2.00   0.062     3.08    23.63

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-
--------------------
| CALIB            |
| NASHYD    (3301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.147 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  26.476
     TOTAL RAINFALL   (mm)=  72.900
     RUNOFF COEFFICIENT   =   0.363

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-
--------------------
| CALIB            |
| NASHYD    (3101) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
```

```
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.040 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  26.749
     TOTAL RAINFALL   (mm)=  72.900
     RUNOFF COEFFICIENT   =   0.367

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-
--------------------
| CALIB            |
| NASHYD    (3201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.002 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  19.673
     TOTAL RAINFALL   (mm)=  72.900
     RUNOFF COEFFICIENT   =   0.270

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0003) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (3101):     0.41   0.040     3.08    26.75
        + ID2= 2 (3201):     0.03   0.002     3.08    19.67
          ================================================
          ID = 3 (0003):     0.44   0.042     3.08    26.27

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0003) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0003):     0.44   0.042     3.08    26.27
```

```
        + ID2= 2 (3301):     1.56   0.147     3.08    26.48
          ================================================
          ID = 1 (0003):     2.00   0.189     3.08    26.43

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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  ****************************
  ** SIMULATION NUMBER:  6 **
  ****************************


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|    READ STORM    |    Filename: C:\Users\nnapper\AppD

|                  |              ata\Local\Temp\

|                  |
e9dbd76a-149b-4a10-9af7-3ee318115b78\8fd484e4
| Ptotal= 81.47 mm |    Comments: 50-Year, 6 hour SCS Type II - Peterborou
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    3.30 |  1.75    8.10 |  3.25   17.90 |  4.75    4.90
                0.50    3.30 |  2.00    8.10 |  3.50   17.90 |  5.00    4.90
                0.75    4.90 |  2.25    9.80 |  3.75    8.10 |  5.25    3.30
                1.00    4.90 |  2.50    9.80 |  4.00    8.10 |  5.50    3.30
                1.25    4.90 |  2.75   48.90 |  4.25    6.50 |  5.75    3.30
                1.50    4.90 |  3.00  127.00 |  4.50    6.50 |  6.00    3.30

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--------------------
| CALIB            |
| NASHYD    (1101) |   Area    (ha)=   1.44   Curve Number   (CN)= 61.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                              ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    3.30 | 1.583    8.10 | 3.083   17.90 |  4.58    4.90
               0.167    3.30 | 1.667    8.10 | 3.167   17.90 |  4.67    4.90
               0.250    3.30 | 1.750    8.10 | 3.250   17.90 |  4.75    4.90
               0.333    3.30 | 1.833    8.10 | 3.333   17.90 |  4.83    4.90
               0.417    3.30 | 1.917    8.10 | 3.417   17.90 |  4.92    4.90
               0.500    3.30 | 2.000    8.10 | 3.500   17.90 |  5.00    4.90
```

```
                0.583    4.90 | 2.083    9.80 | 3.583    8.10 |  5.08    3.30
                0.667    4.90 | 2.167    9.80 | 3.667    8.10 |  5.17    3.30
                0.750    4.90 | 2.250    9.80 | 3.750    8.10 |  5.25    3.30
                0.833    4.90 | 2.333    9.80 | 3.833    8.10 |  5.33    3.30
                0.917    4.90 | 2.417    9.80 | 3.917    8.10 |  5.42    3.30
                1.000    4.90 | 2.500    9.80 | 4.000    8.10 |  5.50    3.30
                1.083    4.90 | 2.583   48.90 | 4.083    6.50 |  5.58    3.30
                1.167    4.90 | 2.667   48.90 | 4.167    6.50 |  5.67    3.30
                1.250    4.90 | 2.750   48.90 | 4.250    6.50 |  5.75    3.30
                1.333    4.90 | 2.833  127.00 | 4.333    6.50 |  5.83    3.30
                1.417    4.90 | 2.917  127.00 | 4.417    6.50 |  5.92    3.30
                1.500    4.90 | 3.000  127.00 | 4.500    6.50 |  6.00    3.30

     Unit Hyd Qpeak  (cms)=   0.183

     PEAK FLOW       (cms)=   0.086 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=  23.315
     TOTAL RAINFALL   (mm)=  81.475
     RUNOFF COEFFICIENT   =   0.286

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (1201) |   Area    (ha)=   0.57   Curve Number   (CN)= 45.7
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   0.081

     PEAK FLOW       (cms)=   0.022 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=  14.235
     TOTAL RAINFALL   (mm)=  81.475
     RUNOFF COEFFICIENT   =   0.175

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-
--------------------
| CALIB            |
| NASHYD    (2102) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.048 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  32.282
     TOTAL RAINFALL   (mm)=  81.475
     RUNOFF COEFFICIENT   =   0.396

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-
--------------------
| CALIB            |
| NASHYD    (2201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.002 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  24.091
     TOTAL RAINFALL   (mm)=  81.475
     RUNOFF COEFFICIENT   =   0.296

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-
--------------------
| CALIB            |
| NASHYD    (2301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.178 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  31.914
     TOTAL RAINFALL   (mm)=  81.475
     RUNOFF COEFFICIENT   =   0.392

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-
--------------------
| RESERVOIR (0002) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |     OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------      (cms)     (ha.m.)   |   (cms)     (ha.m.)
                          0.0000     0.0000   |   0.0277     0.0178
                          0.0001     0.0055   |   0.0310     0.0205
```

```
                          0.0029     0.0075   |   0.0346      0.0239
                          0.0115     0.0101   |   0.0373      0.0269
                          0.0183     0.0124   |   0.0403      0.0306
                          0.0238     0.0153   |   0.0427      0.0339

                               AREA     QPEAK     TPEAK       R.V.
                               (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (2301)     1.560      0.178      3.08      31.91
     OUTFLOW: ID= 1 (0002)     1.560      0.038      3.67      28.32

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 21.25
                    TIME SHIFT OF PEAK FLOW         (min)= 35.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0275

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-

--------------------
| ADD HYD   (0001) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0002):     1.56   0.038     3.67    28.32
        + ID2= 2 (2102):     0.41   0.048     3.08    32.28
          ================================================
          ID = 3 (0001):     1.97   0.073     3.08    29.15

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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-

--------------------
| ADD HYD   (0001) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0001):     1.97   0.073     3.08    29.15
        + ID2= 2 (2201):     0.03   0.002     3.08    24.09
          ================================================
          ID = 1 (0001):     2.00   0.075     3.08    29.07

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-

--------------------
| CALIB            |
| NASHYD    (3301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.178 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  31.914
     TOTAL RAINFALL   (mm)=  81.475
     RUNOFF COEFFICIENT   =   0.392

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-

--------------------
| CALIB            |
| NASHYD    (3101) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.048 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  32.282
     TOTAL RAINFALL   (mm)=  81.475
     RUNOFF COEFFICIENT   =   0.396

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-

--------------------
| CALIB            |
| NASHYD    (3201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.002 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  24.091
     TOTAL RAINFALL   (mm)=  81.475
     RUNOFF COEFFICIENT   =   0.296

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| ADD HYD   (0003) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (3101):     0.41   0.048     3.08    32.28
```

```
        + ID2= 2 (3201):     0.03   0.002     3.08    24.09
          ================================================
          ID = 3 (0003):     0.44   0.050     3.08    31.72

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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--------------------
| ADD HYD   (0003) |
|   3 +  2 =   1   |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0003):     0.44   0.050     3.08    31.72
        + ID2= 2 (3301):     1.56   0.178     3.08    31.91
          ================================================
          ID = 1 (0003):     2.00   0.228     3.08    31.87

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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  ****************************
  ** SIMULATION NUMBER:   7 **
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|    READ STORM    |    Filename: C:\Users\nnapper\AppD

|                  |              ata\Local\Temp\

|                  |
e9dbd76a-149b-4a10-9af7-3ee318115b78\85073aae
| Ptotal= 89.93 mm |    Comments: 100-Year, 6 hour SCS Type II - Peterboro
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.25    3.60 |  1.75    9.00 |  3.25   19.80 | 4.75    5.40
                  0.50    3.60 |  2.00    9.00 |  3.50   19.80 | 5.00    5.40
                  0.75    5.40 |  2.25   10.80 |  3.75    9.00 | 5.25    3.60
                  1.00    5.40 |  2.50   10.80 |  4.00    9.00 | 5.50    3.60
                  1.25    5.40 |  2.75   53.90 |  4.25    7.20 | 5.75    3.60
                  1.50    5.40 |  3.00  140.20 |  4.50    7.20 | 6.00    3.60

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--------------------
| CALIB            |
| NASHYD    (1101) |   Area    (ha)=   1.44   Curve Number   (CN)= 61.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   7.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.30

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                                  ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                  hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    3.60 | 1.583    9.00 | 3.083   19.80 |  4.58    5.40
               0.167    3.60 | 1.667    9.00 | 3.167   19.80 |  4.67    5.40
               0.250    3.60 | 1.750    9.00 | 3.250   19.80 |  4.75    5.40
               0.333    3.60 | 1.833    9.00 | 3.333   19.80 |  4.83    5.40
               0.417    3.60 | 1.917    9.00 | 3.417   19.80 |  4.92    5.40
               0.500    3.60 | 2.000    9.00 | 3.500   19.80 |  5.00    5.40
               0.583    5.40 | 2.083   10.80 | 3.583    9.00 |  5.08    3.60
               0.667    5.40 | 2.167   10.80 | 3.667    9.00 |  5.17    3.60
               0.750    5.40 | 2.250   10.80 | 3.750    9.00 |  5.25    3.60
               0.833    5.40 | 2.333   10.80 | 3.833    9.00 |  5.33    3.60
               0.917    5.40 | 2.417   10.80 | 3.917    9.00 |  5.42    3.60
               1.000    5.40 | 2.500   10.80 | 4.000    9.00 |  5.50    3.60
               1.083    5.40 | 2.583   53.90 | 4.083    7.20 |  5.58    3.60
               1.167    5.40 | 2.667   53.90 | 4.167    7.20 |  5.67    3.60
               1.250    5.40 | 2.750   53.90 | 4.250    7.20 |  5.75    3.60
               1.333    5.40 | 2.833  140.20 | 4.333    7.20 |  5.83    3.60
               1.417    5.40 | 2.917  140.20 | 4.417    7.20 |  5.92    3.60
               1.500    5.40 | 3.000  140.20 | 4.500    7.20 |  6.00    3.60

     Unit Hyd Qpeak  (cms)=   0.183

     PEAK FLOW       (cms)=   0.103 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=  27.929
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.311

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (1201) |   Area    (ha)=   0.57   Curve Number   (CN)= 45.7
|ID= 1 DT= 5.0 min |   Ia      (mm)=   8.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.27

     Unit Hyd Qpeak  (cms)=   0.081

     PEAK FLOW       (cms)=   0.026 (i)
     TIME TO PEAK    (hrs)=   3.167
     RUNOFF VOLUME    (mm)=  17.327
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.193
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     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| NASHYD    (2102) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.057 (i)
     TIME TO PEAK    (hrs)=   3.000
     RUNOFF VOLUME    (mm)=  37.998
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.423

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (2201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.002 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  28.708
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.319

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (2301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.209 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  37.536
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     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.417

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| RESERVOIR (0002) |
| IN= 2---> OUT= 1 |
| DT=  5.0 min     |   OUTFLOW    STORAGE   |  OUTFLOW    STORAGE
--------------------    (cms)     (ha.m.)   |   (cms)     (ha.m.)
                        0.0000     0.0000   |   0.0277      0.0178
                        0.0001     0.0055   |   0.0310      0.0205
                        0.0029     0.0075   |   0.0346      0.0239
                        0.0115     0.0101   |   0.0373      0.0269
                        0.0183     0.0124   |   0.0403      0.0306
                        0.0238     0.0153   |   0.0427      0.0339

                              AREA     QPEAK     TPEAK       R.V.
                              (ha)     (cms)     (hrs)       (mm)
     INFLOW : ID= 2 (2301)     1.560     0.209     3.08      37.54
     OUTFLOW: ID= 1 (0002)     1.560     0.042     3.67      33.95

                    PEAK   FLOW   REDUCTION [Qout/Qin](%)= 20.03
                    TIME SHIFT OF PEAK FLOW         (min)= 35.00
                    MAXIMUM  STORAGE   USED       (ha.m.)=  0.0328

--------------------------------------------------------------------------------
-

--------------------
| ADD HYD   (0001) |
|   1 +  2 =  3    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (0002):     1.56   0.042     3.67    33.95
        + ID2= 2 (2102):     0.41   0.057     3.00    38.00
          ================================================
          ID = 3 (0001):     1.97   0.086     3.08    34.79

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

--------------------------------------------------------------------------------
-

--------------------
| ADD HYD   (0001) |
|   3 +  2 =  1    |         AREA    QPEAK    TPEAK     R.V.
--------------------         (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0001):     1.97   0.086     3.08    34.79
        + ID2= 2 (2201):     0.03   0.002     3.08    28.71
          ================================================
```

```
          ID = 1 (0001):     2.00   0.089     3.08    34.70

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
-
--------------------
| CALIB            |
| NASHYD    (3301) |   Area    (ha)=   1.56   Curve Number   (CN)= 69.4
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.50   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.18

     Unit Hyd Qpeak  (cms)=   0.331

     PEAK FLOW       (cms)=   0.209 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  37.536
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.417

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

------------------------------------------------------------------------------
-
--------------------
| CALIB            |
| NASHYD    (3101) |   Area    (ha)=   0.41   Curve Number   (CN)= 70.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.40   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.17

     Unit Hyd Qpeak  (cms)=   0.092

     PEAK FLOW       (cms)=   0.057 (i)
     TIME TO PEAK    (hrs)=   3.000
     RUNOFF VOLUME    (mm)=  37.998
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.423

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

------------------------------------------------------------------------------
-
--------------------
| CALIB            |
| NASHYD    (3201) |   Area    (ha)=   0.03   Curve Number   (CN)= 60.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   5.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.25

     Unit Hyd Qpeak  (cms)=   0.005

     PEAK FLOW       (cms)=   0.002 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  28.708
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.319

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

------------------------------------------------------------------------------
-

--------------------
| ADD HYD   (0003) |
|   1 +  2 =  3    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 1 (3101):     0.41   0.057     3.00    38.00
        + ID2= 2 (3201):     0.03   0.002     3.08    28.71
          ================================================
          ID = 3 (0003):     0.44   0.059     3.08    37.36

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

------------------------------------------------------------------------------
-

--------------------
| ADD HYD   (0003) |
|   3 +  2 =  1    |          AREA    QPEAK    TPEAK     R.V.
--------------------          (ha)    (cms)    (hrs)     (mm)
          ID1= 3 (0003):     0.44   0.059     3.08    37.36
        + ID2= 2 (3301):     1.56   0.209     3.08    37.54
          ================================================
          ID = 1 (0003):     2.00   0.269     3.08    37.50

     NOTE:  PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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 FINISH
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Appendix C

Stormwater Quality and Quantity

Stage-Storage-Discharge: Grassed Detention Basin

Project No: 85312
Project Name: Thomas Self Storage
Designed/Checked By: NN / CP
Date: July 10, 2024

Storage Summary		
Top of Dead Storage:	207.71	m
Dead Storage Volume:	55.4	m^3
Active Storage Volume:	283.9	m^3

Outlet Capacity Summary				
Type	Diameter	Slope	Peak Flow	% Full

Discharge Summary				
Stage	Type	Invert Elev (m)	Diameter / Width (mm)	(m)
1	Orifice Tube: Vertical	207.71	150	

100 Year Uncontrolled Peak Flow into the Pond = 0.15 cms, conveyed by a 4 m Broad Crested Weir
At a depth of 0.08 m (Elev. 208.33 m) assuming blockage of the outlet system

Stage-Storage-Discharge Summary Table

Elevation	Stage	Stage 1 Orifice Tube						Total Storage	Total Discharge	Notes
m	m	m^3/s						ha*m	m^3/s	
207.71	0.00	0.000						0.0055	0.000	
207.72	0.01	0.000						0.0059	0.000	
207.73	0.02	0.000						0.0063	0.000	
207.74	0.03	0.001						0.0067	0.001	
207.75	0.04	0.002						0.0071	0.002	
207.76	0.05	0.003						0.0075	0.003	
207.77	0.06	0.004						0.0080	0.004	
207.78	0.07	0.005						0.0084	0.005	
207.79	0.08	0.007						0.0088	0.007	<= 2 Yr: 86 m³ (207.79m)
207.80	0.09	0.008						0.0092	0.008	
207.81	0.10	0.010						0.0097	0.010	
207.82	0.11	0.012						0.0101	0.012	
207.83	0.12	0.013						0.0105	0.013	
207.84	0.13	0.015						0.0110	0.015	
207.85	0.14	0.016						0.0114	0.016	
207.86	0.15	0.017						0.0119	0.017	
207.87	0.16	0.018						0.0124	0.018	
207.88	0.17	0.019						0.0128	0.019	
207.89	0.18	0.020						0.0133	0.020	<= 5 Yr: 129.1 m³ (207.89m)
207.90	0.19	0.021						0.0138	0.021	
207.91	0.20	0.022						0.0143	0.022	
207.92	0.21	0.023						0.0148	0.023	
207.93	0.22	0.024						0.0153	0.024	
207.94	0.23	0.025						0.0158	0.025	
207.95	0.24	0.025						0.0163	0.025	
207.96	0.25	0.026						0.0168	0.026	<= 10 Yr: 167 m³ (207.96m)
207.97	0.26	0.027						0.0173	0.027	
207.98	0.27	0.028						0.0178	0.028	
207.99	0.28	0.028						0.0183	0.028	
208.00	0.29	0.029						0.0189	0.029	
208.01	0.30	0.030						0.0194	0.030	
208.02	0.31	0.030						0.0200	0.030	
208.03	0.32	0.031						0.0205	0.031	
208.04	0.33	0.032						0.0211	0.032	
208.05	0.34	0.032						0.0216	0.032	
208.06	0.35	0.033						0.0222	0.033	
208.07	0.36	0.033						0.0227	0.033	<= 25 Yr: 225 m³ (208.07m)
208.08	0.37	0.034						0.0233	0.034	
208.09	0.38	0.035						0.0239	0.035	
208.10	0.39	0.035						0.0245	0.035	
208.11	0.40	0.036						0.0251	0.036	
208.12	0.41	0.036						0.0257	0.036	
208.13	0.42	0.037						0.0263	0.037	
208.14	0.43	0.037						0.0269	0.037	
208.15	0.44	0.038						0.0275	0.038	
208.16	0.45	0.038						0.0281	0.038	<= 50 Yr: 275 m³ (208.16m)
208.17	0.46	0.039						0.0287	0.039	
208.18	0.47	0.039						0.0294	0.039	
208.19	0.48	0.040						0.0300	0.040	

Stage-Storage-Discharge Summary Table										
Elevation	Stage	Stage 1 Orifice Tube						Total Storage	Total Discharge	Notes
m	m	m^3/s						ha*m	m^3/s	
208.20	0.49	0.040						0.0306	0.040	
208.21	0.50	0.041						0.0313	0.041	
208.22	0.51	0.041						0.0319	0.041	
208.23	0.52	0.042						0.0326	0.042	
208.24	0.53	0.042						0.0333	0.042	<= 100 Yr: 328 m³ (208.24m)
208.25	0.54	0.043						0.0339	0.043	

3.3.2 Water Quality Sizing Criteria

The volumetric water quality criteria are presented in Table 3.2. The values are based on a 24 hour drawdown time and a design which conforms to the guidance provided in this manual. Requirements differ with SWMP type to reflect differences in removal efficiencies. Of the specified storage volume for wet facilities, 40 m³/ha is extended detention, while the remainder represents the permanent pool.

Table 3.2 Water Quality Storage Requirements based on Receiving Waters[1, 2]

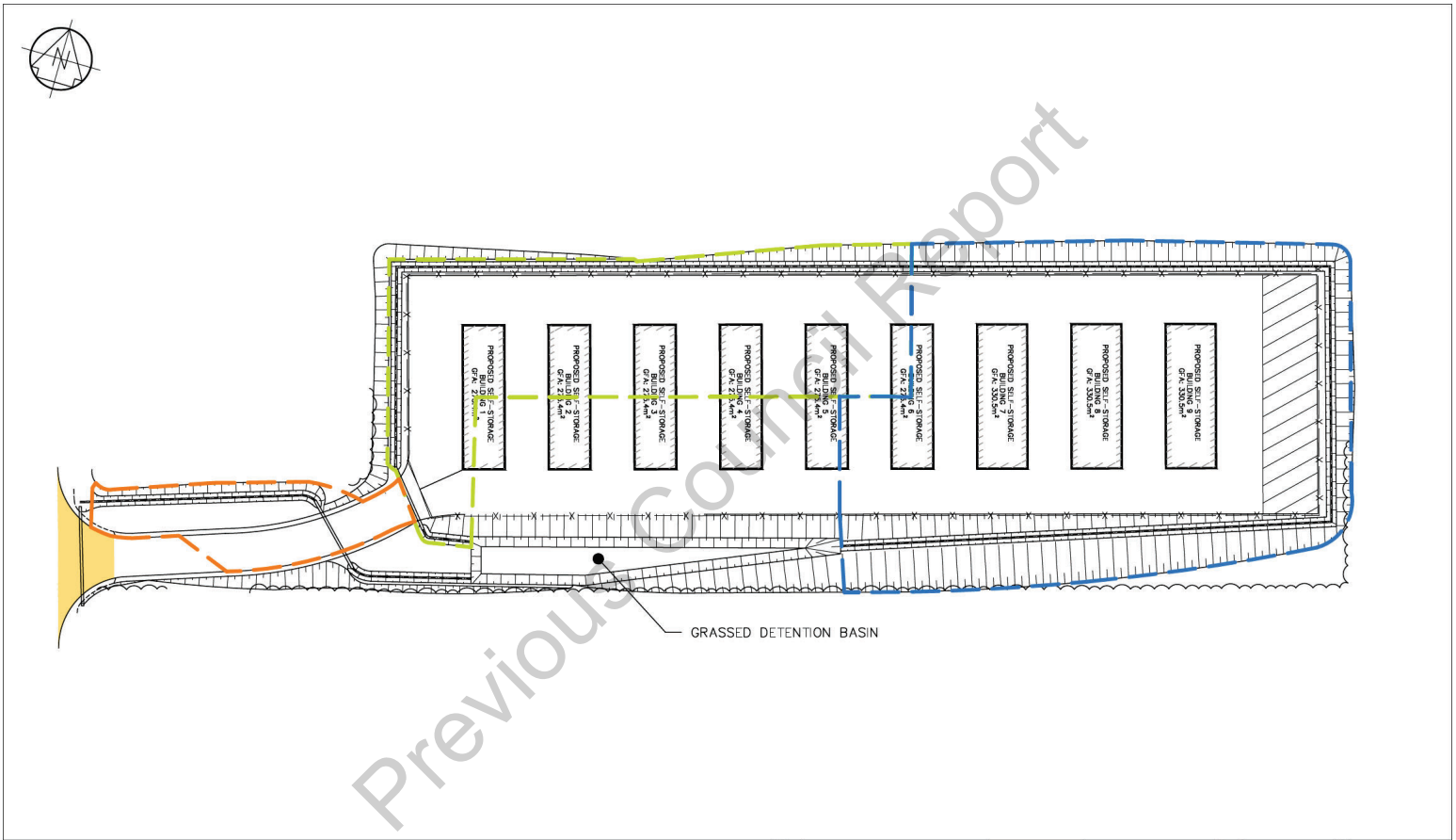
Protection Level	SWMP Type	Storage Volume (m³/ha) for Impervious Level			
		35%	55%	70%	85%
Enhanced 80% long-term S.S. removal	Infiltration	25	30	35	40
	Wetlands	80	105	120	140
	Hybrid Wet Pond/Wetland	110	150	175	195
	Wet Pond	140	190	225	250
Normal 70% long-term S.S. removal	Infiltration	20	20	25	30
	Wetlands	60	70	80	90
	Hybrid Wet Pond/Wetland	75	90	105	120
	Wet Pond	90	110	130	150
Basic 60% long-term S.S. removal	Infiltration	20	20	20	20
	Wetlands	60	60	60	60
	Hybrid Wet Pond/Wetland	60	70	75	80
	Wet Pond	60	75	85	95
	Dry Pond (Continuous Flow)	90	150	200	240

[1]*Table 3.2 does not include every available SWMP type. Any SWMP type that can be demonstrated to the approval agencies to meet the required long-term suspended solids removal for the selected protection levels under the conditions of the site is acceptable for water quality objectives. The sizing for these SWMP types is to be determined based on performance results that have been peer-reviewed. The designer and those who review the design should be fully aware of the assumptions and sampling methodologies used in formulating performance predictions and their implications for the design.*

[2]*Hybrid Wet Pond/Wetland systems have 50-60% of their permanent pool volume in deeper portions of the facility (e.g., forebay, wet pond).*

Appendix D

Hydraulic Elements



EAST SWALE
CATCHMENT AREA = 0.70ha

WEST SWALE
CATCHMENT AREA = 0.38ha

OUTLET SWALE
CATCHMENT AREA = 0.09ha

Sketch No.
THOMAS SELF STORAGE

SWALE CATCHMENT AREAS

D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9

P. 705.742.2297
F. 705.741.3568
E. wills@dmwills.com

Drawn By: NN	Scale: 1: 750
Designed By: NN	Plot Date: JUNE 2024
Checked By: —	Project No.: 85312
Engineer: —	Drawing File No.: 85312-SWALES

Swale	100-Year Flowrate (m^3/s)	Shape	Bottom Width (m)	Side Slopes	Total Depth (m)	Slope (%)	Depth of 100-Year Flow (m)	Freeboard (m)	Total Capacity (m^3/s)
East Swale	0.053	Trapezoid	0.3	3:1	0.3	0.5	0.15	0.15	0.254
West Swale	0.059	Trapezoid	0.3	3:1	0.3	0.5	0.203	0.097	0.282
Outlet Swale + Pond Outflow	0.082	Trapezoid	0.3	3:1	0.3	1	0.156	0.144	0.359

Hydrologic Parameters for EAST SWALE

Sheet 1 of 1

WILLS

Project No: 85312
Project Name: Thomas Self Storage
Designed/Checked By: NN / CP
Date: 24-Jun-24

Land Use

	Swale A	
Agriculture	0.00	ha
Range	0.00	ha
Grass	0.24	ha
Woods	0.00	ha
Wetland	0.00	ha
Gravel	0.34	ha
Impervious	0.12	ha
SUM	0.70	
Hydrologic Soil Group[1]	A	
Soil Type	Tioga Sandy Loam	
C	0.45	
CN (Nashyd)	67.4	

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	0.70	ha
Impervious Area	0.12	ha
Percent Impervious	17.6%	
Connected Impervious	17.6%	

	Pervious	Impervious	
Length	240	25	m
US Elev	209.43	210.11	m
DS Elev	208.30	209.77	m
Slope	0.5	1.4	%
	Flat	Flat	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Impervious	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	A	0.19	0.10	0.05	0.05	0.05	0.57	0.90	0.45	n.a.
SCS Curve No.[3], CN	A	66	49	39	36	50	76	98	67.4	60.9
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	3.3	3.5

Time of Concentration[6]

Total Length	265	m	
Average Slope	0.6	%	
Airport	41.7	min.	
Bransby - Williams	17.6	min.	Flat: 0-2% Slopes Rolling: 2-6% Slopes Hilly: >6% Slopes
Applicable Minimum[7]	10.0	min.	
Time to Peak	11.8	min.	
	0.20	hr.	

Composite Parameters

Drainage Area	0.70 ha	
Runoff Coefficient	0.45	
SCS Curve No.	67.4	60.9
Modified Curve No.[4], CN*	67.1	58.8
Initial Abstraction.	3.3	3.5

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Use Airport Equation to calculate time of concentration for C <= 0.4, and Bransby-Williams for C > 0.4.
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 10 minutes
8. All impervious areas have been assumed to be directly connected.

Hydrologic Parameters for WEST SWALE

Sheet 1 of 1

WILLS

Project No: 85312
Project Name: Thomas Self Storage
Designed/Checked By: NN / CP
Date: 24-Jun-24

Land Use

	Swale B	Swale B	
Agriculture	0.00	0.00	ha
Range	0.00	0.00	ha
Grass	0.05	0.02	ha
Woods	0.00	0.00	ha
Wetland	0.00	0.00	ha
Gravel	0.16	0.07	ha
Impervious	0.05	0.03	ha
SUM	0.25	0.13	
Hydrologic Soil Group[1]	B	A	
Soil Type	Otonabee Loam	Tioga Sandy Loam	
C	0.65	0.57	
CN (Nashyd)	82.5	75.9	

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	0.38	ha
Impervious Area	0.08	ha
Percent Impervious	21.2%	
Connected Impervious	21.2%	

	Pervious	Impervious	
Length	112	26	m
US Elev	210.00	209.91	m
DS Elev	209.42	209.55	m
Slope	0.5	1.4	%
	Flat	Flat	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Impervious	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	B	0.26	0.14	0.08	0.08	0.05	0.76	0.90	0.65	
	A	0.19	0.10	0.05	0.05	0.05	0.57	0.90	0.57	n.a.
SCS Curve No.[3], CN	B	74	65	61	58	50	85	98	82.5	79.1
	A	66	49	39	36	50	76	98	75.9	67.5
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	2.9	3.1

Time of Concentration[6]

Total Length	138	m
Average Slope	0.7	%
Airport	20.7	min.
Bransby - Williams	9.4	min.
Applicable Minimum[7]	10.0	min.
Time to Peak	6.7	min.
	0.11	hr.

Flat: 0-2% Slopes
Rolling: 2-6% Slopes
Hilly: >6% Slopes

Composite Parameters

Drainage Area	0.38 ha	
Runoff Coefficient	0.62	
SCS Curve No.	80.3	75.5
Modified Curve No.[4], CN*	80.0	75.1
Initial Abstraction.	2.9	3.1

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Use Airport Equation to calculate time of concentration for C <= 0.4, and Bransby-Williams for C > 0.4.
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 10 minutes
8. All impervious areas have been assumed to be directly connected.

Hydrologic Parameters for OUTLET SWALE

Sheet 1 of 1

WILLS

Project No: 85312
Project Name: Thomas Self Storage
Designed/Checked By: NN / CP
Date: 24-Jun-24

Land Use

	Swale B	
Agriculture	0.00	ha
Range	0.00	ha
Grass	0.05	ha
Woods	0.00	ha
Wetland	0.00	ha
Gravel	0.04	ha
Impervious	0.00	ha
SUM	0.09	

Hydrologic Soil Group[1]	B
Soil Type	Otonabee Loam
C	0.42
CN (Nashyd)	70.9

Rainfall Data

Gauging Station = Peterborough
12 hr, 100 Yr Rainfall = 90.4 mm

Drainage Area	0.09	ha
Impervious Area	0.00	ha
Percent Impervious	0.0%	
Connected Impervious	0.0%	

	Pervious	Impervious	
Length	100	9	m
US Elev	100.00	209.93	m
DS Elev	90.00	209.66	m
Slope	10.0	2.9	%
	Steep	Rolling	

Parameter	Soil Group	Land Use							Weighted Value	
		Agriculture	Range	Grass	Woods	Wetland	Gravel	Impervious	Incl. Imperv. NASHYD	Not Incl. Imperv. STANDHYD
Runoff Coefficient[2], C	B	0.57	0.35	0.19	0.29	0.05	0.76	0.90	0.42	n.a.
SCS Curve No.[3], CN	B	74	65	61	58	50	85	98	70.9	70.9
Initial Abstraction[5], mm		6.0	8.0	5.0	10.0	10.0	2.5	2.0	4.0	4.0

Time of Concentration[6]

Total Length	109	m
Average Slope	9.4	%
Airport	11.0	min.
Bransby - Williams	5.1	min.
Applicable Minimum[7]	10.0	min.
Time to Peak	6.7	min.
	0.11	hr.

Flat: 0-2% Slopes
Rolling: 2-6% Slopes
Hilly: >6% Slopes

Composite Parameters

Drainage Area	0.09 ha	
Runoff Coefficient	0.42	
SCS Curve No.	70.9	70.9
Modified Curve No.[4], CN*	71.5	71.5
Initial Abstraction.	4.0	4.0

Notes:

1. Hydrologic Soil Group obtained from Design Chart H2-6A, M.T.O. Drainage Manual, 1980.
2. Runoff coefficient obtained from M.T.O. Design Chart 1.07, M.T.O. Drainage Management Manual, 1997, Hydrologic Analysis and Design, McCuen 2004 and New Jersey Technical Manual for Stream Encroachment, 1984.
3. SCS Curve No. obtained from M.T.O. Design Chart 1.09, M.T.O. Drainage Management Manual, 1997, and Table 2-2a, TR-55, page 2-5.
4. The modified curve number is adjusted as per Paul Wisner & Associates (1982) and represents anticedent moisture conditions Type II
5. Initial Abstraction values taken from the Environmental and Engineering Services Department, The Corporation of the City of London, Dec 2005
6. Use Airport Equation to calculate time of concentration for C <= 0.4, and Bransby-Williams for C > 0.4.
7. Minimum Time of Concentration for use in the Rational Method and Hydrologic Model has been set to 10 minutes
8. All impervious areas have been assumed to be directly connected.

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       V    V   I    SSSSS  U   U    A    L
       V    V   I    SS     U   U   A A   L
        V  V    I     SS    U   U  AAAAA  L
        V  V    I      SS   U   U  A   A  L
         VV     I    SSSSS  UUUUU  A   A  LLLLL

        OOO   TTTTT  TTTTT  H   H  Y   Y  M   M   OOO    TM
       O   O    T      T    H   H   Y Y   MM MM  O   O
       O   O    T      T    H   H    Y    M   M  O   O
        OOO     T      T    H   H    Y    M   M   OOO
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                  *****  D E T A I L E D   O U T P U T *****


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rio.out
  Summary filename:
C:\Users\nnapper\AppData\Local\Temp\e0d9f453-99ce-4d31-8f8c-f2c8c00fd6ba\Scena
rio.sum


DATE: 07/16/2024                          TIME: 12:41:11

USER:



COMMENTS: _____


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  ****************************
  ** SIMULATION NUMBER:   1 **
  ****************************


--------------------
|    READ STORM    |    Filename: C:\Users\nnapper\AppD

|                  |              ata\Local\Temp\
```

```
|                  |
e0d9f453-99ce-4d31-8f8c-f2c8c00fd6ba\3c083d71
| Ptotal= 38.75 mm |    Comments: 2-Year, 6 hour SCS Type II - Peterboroug
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    1.60 |  1.75    3.90 |  3.25    8.50 |  4.75    2.30
                0.50    1.60 |  2.00    3.90 |  3.50    8.50 |  5.00    2.30
                0.75    2.30 |  2.25    4.60 |  3.75    3.90 |  5.25    1.60
                1.00    2.30 |  2.50    4.60 |  4.00    3.90 |  5.50    1.60
                1.25    2.30 |  2.75   23.20 |  4.25    3.10 |  5.75    1.60
                1.50    2.30 |  3.00   60.40 |  4.50    3.10 |  6.00    1.60

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--------------------
| CALIB            |
| NASHYD    (0003) |   Area    (ha)=   0.09   Curve Number   (CN)= 71.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.11

      NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                        ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    1.60 | 1.583    3.90 | 3.083    8.50 |  4.58    2.30
               0.167    1.60 | 1.667    3.90 | 3.167    8.50 |  4.67    2.30
               0.250    1.60 | 1.750    3.90 | 3.250    8.50 |  4.75    2.30
               0.333    1.60 | 1.833    3.90 | 3.333    8.50 |  4.83    2.30
               0.417    1.60 | 1.917    3.90 | 3.417    8.50 |  4.92    2.30
               0.500    1.60 | 2.000    3.90 | 3.500    8.50 |  5.00    2.30
               0.583    2.30 | 2.083    4.60 | 3.583    3.90 |  5.08    1.60
               0.667    2.30 | 2.167    4.60 | 3.667    3.90 |  5.17    1.60
               0.750    2.30 | 2.250    4.60 | 3.750    3.90 |  5.25    1.60
               0.833    2.30 | 2.333    4.60 | 3.833    3.90 |  5.33    1.60
               0.917    2.30 | 2.417    4.60 | 3.917    3.90 |  5.42    1.60
               1.000    2.30 | 2.500    4.60 | 4.000    3.90 |  5.50    1.60
               1.083    2.30 | 2.583   23.20 | 4.083    3.10 |  5.58    1.60
               1.167    2.30 | 2.667   23.20 | 4.167    3.10 |  5.67    1.60
               1.250    2.30 | 2.750   23.20 | 4.250    3.10 |  5.75    1.60
               1.333    2.30 | 2.833   60.40 | 4.333    3.10 |  5.83    1.60
               1.417    2.30 | 2.917   60.40 | 4.417    3.10 |  5.92    1.60
               1.500    2.30 | 3.000   60.40 | 4.500    3.10 |  6.00    1.60

    Unit Hyd Qpeak  (cms)=   0.031

    PEAK FLOW       (cms)=   0.004 (i)
    TIME TO PEAK    (hrs)=   3.000
    RUNOFF VOLUME    (mm)=   8.713
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     TOTAL RAINFALL   (mm)=  38.750
     RUNOFF COEFFICIENT   =   0.225

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0002) |   Area    (ha)=   0.38
|ID= 1 DT= 5.0 min |   Total Imp(%)=  21.00   Dir. Conn.(%)=  21.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.08         0.30
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.38         0.52
     Length            (m)=      50.33       112.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      60.40         8.21
               over (min)        5.00        60.00
     Storage Coeff.  (min)=       1.88 (ii)   55.19 (ii)
     Unit Hyd. Tpeak (min)=       5.00        60.00
     Unit Hyd. peak  (cms)=       0.32         0.02
                                                        *TOTALS*
     PEAK FLOW       (cms)=       0.01         0.00          0.014 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.83           3.00
     RUNOFF VOLUME    (mm)=      37.75         7.52          13.79
     TOTAL RAINFALL   (mm)=      38.75        38.75          38.75
     RUNOFF COEFFICIENT   =       0.97         0.19           0.36

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
            Fo   (mm/hr)= 50.00          K  (1/hr)=  2.00
            Fc   (mm/hr)=  7.50     Cum.Inf.   (mm)=  0.00
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (0001) |   Area    (ha)=   0.70   Curve Number   (CN)= 67.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

     Unit Hyd Qpeak  (cms)=   0.134

     PEAK FLOW       (cms)=   0.018 (i)
     TIME TO PEAK    (hrs)=   3.083
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     RUNOFF VOLUME    (mm)=   7.839
     TOTAL RAINFALL   (mm)=  38.750
     RUNOFF COEFFICIENT   =   0.202

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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  ****************************
  ** SIMULATION NUMBER:  2 **
  ****************************


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|    READ STORM    |    Filename: C:\Users\nnapper\AppD

|                  |              ata\Local\Temp\

|                  |
e0d9f453-99ce-4d31-8f8c-f2c8c00fd6ba\69bf9c3c
| Ptotal= 52.45 mm |    Comments: 5-Year, 6 hour SCS Type II - Peterboroug
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.10 |  1.75    5.20 |  3.25   11.50 |  4.75    3.20
                0.50    2.10 |  2.00    5.20 |  3.50   11.50 |  5.00    3.20
                0.75    3.20 |  2.25    6.30 |  3.75    5.20 |  5.25    2.10
                1.00    3.20 |  2.50    6.30 |  4.00    5.20 |  5.50    2.10
                1.25    3.20 |  2.75   31.40 |  4.25    4.20 |  5.75    2.10
                1.50    3.20 |  3.00   81.80 |  4.50    4.20 |  6.00    2.10

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--------------------
| CALIB            |
| NASHYD    (0003) |   Area    (ha)=   0.09   Curve Number   (CN)= 71.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.11

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                              ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    2.10 | 1.583    5.20 | 3.083   11.50 |  4.58    3.20
               0.167    2.10 | 1.667    5.20 | 3.167   11.50 |  4.67    3.20
               0.250    2.10 | 1.750    5.20 | 3.250   11.50 |  4.75    3.20
               0.333    2.10 | 1.833    5.20 | 3.333   11.50 |  4.83    3.20
               0.417    2.10 | 1.917    5.20 | 3.417   11.50 |  4.92    3.20
               0.500    2.10 | 2.000    5.20 | 3.500   11.50 |  5.00    3.20
```

```
                0.583    3.20 | 2.083    6.30 | 3.583    5.20 |  5.08    2.10
                0.667    3.20 | 2.167    6.30 | 3.667    5.20 |  5.17    2.10
                0.750    3.20 | 2.250    6.30 | 3.750    5.20 |  5.25    2.10
                0.833    3.20 | 2.333    6.30 | 3.833    5.20 |  5.33    2.10
                0.917    3.20 | 2.417    6.30 | 3.917    5.20 |  5.42    2.10
                1.000    3.20 | 2.500    6.30 | 4.000    5.20 |  5.50    2.10
                1.083    3.20 | 2.583   31.40 | 4.083    4.20 |  5.58    2.10
                1.167    3.20 | 2.667   31.40 | 4.167    4.20 |  5.67    2.10
                1.250    3.20 | 2.750   31.40 | 4.250    4.20 |  5.75    2.10
                1.333    3.20 | 2.833   81.80 | 4.333    4.20 |  5.83    2.10
                1.417    3.20 | 2.917   81.80 | 4.417    4.20 |  5.92    2.10
                1.500    3.20 | 3.000   81.80 | 4.500    4.20 |  6.00    2.10

     Unit Hyd Qpeak  (cms)=   0.031

     PEAK FLOW       (cms)=   0.007 (i)
     TIME TO PEAK    (hrs)=   3.000
     RUNOFF VOLUME    (mm)=  15.388
     TOTAL RAINFALL   (mm)=  52.450
     RUNOFF COEFFICIENT   =   0.293

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0002) |   Area    (ha)=   0.38
|ID= 1 DT= 5.0 min |   Total Imp(%)=  21.00   Dir. Conn.(%)=  21.00
--------------------
                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.08         0.30
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.38         0.52
     Length            (m)=      50.33       112.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=      81.80        25.36
               over (min)        5.00        40.00
     Storage Coeff.  (min)=       1.66 (ii)   35.61 (ii)
     Unit Hyd. Tpeak (min)=       5.00        40.00
     Unit Hyd. peak  (cms)=       0.32         0.03
                                                    *TOTALS*
     PEAK FLOW       (cms)=       0.02         0.01          0.021 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.50           3.00
     RUNOFF VOLUME    (mm)=      51.45        14.80          22.43
     TOTAL RAINFALL   (mm)=      52.45        52.45          52.45
     RUNOFF COEFFICIENT   =       0.98         0.28           0.43

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
```

```
            Fo   (mm/hr)= 50.00          K  (1/hr)=  2.00
            Fc   (mm/hr)=  7.50     Cum.Inf.   (mm)=  0.00
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-
--------------------
| CALIB            |
| NASHYD    (0001) |   Area    (ha)=   0.70   Curve Number   (CN)= 67.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

     Unit Hyd Qpeak  (cms)=   0.134

     PEAK FLOW       (cms)=   0.033 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  13.881
     TOTAL RAINFALL   (mm)=  52.450
     RUNOFF COEFFICIENT   =   0.265

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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  ****************************
  ** SIMULATION NUMBER:   3 **
  ****************************


--------------------
|    READ STORM    |    Filename: C:\Users\nnapper\AppD

|                  |              ata\Local\Temp\

|                  |
e0d9f453-99ce-4d31-8f8c-f2c8c00fd6ba\8053e299
| Ptotal= 61.60 mm |    Comments: 10-Year, 6 hour SCS Type II - Peterborou
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    2.50 |  1.75    6.20 |  3.25   13.50 |  4.75    3.70
                0.50    2.50 |  2.00    6.20 |  3.50   13.50 |  5.00    3.70
                0.75    3.70 |  2.25    7.40 |  3.75    6.20 |  5.25    2.50
                1.00    3.70 |  2.50    7.40 |  4.00    6.20 |  5.50    2.50
                1.25    3.70 |  2.75   36.90 |  4.25    4.90 |  5.75    2.50
                1.50    3.70 |  3.00   95.90 |  4.50    4.90 |  6.00    2.50

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| CALIB            |
| NASHYD    (0003) |   Area    (ha)=   0.09   Curve Number   (CN)= 71.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.11

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.

                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    2.50 | 1.583    6.20 | 3.083   13.50 |  4.58    3.70
               0.167    2.50 | 1.667    6.20 | 3.167   13.50 |  4.67    3.70
               0.250    2.50 | 1.750    6.20 | 3.250   13.50 |  4.75    3.70
               0.333    2.50 | 1.833    6.20 | 3.333   13.50 |  4.83    3.70
               0.417    2.50 | 1.917    6.20 | 3.417   13.50 |  4.92    3.70
               0.500    2.50 | 2.000    6.20 | 3.500   13.50 |  5.00    3.70
               0.583    3.70 | 2.083    7.40 | 3.583    6.20 |  5.08    2.50
               0.667    3.70 | 2.167    7.40 | 3.667    6.20 |  5.17    2.50
               0.750    3.70 | 2.250    7.40 | 3.750    6.20 |  5.25    2.50
               0.833    3.70 | 2.333    7.40 | 3.833    6.20 |  5.33    2.50
               0.917    3.70 | 2.417    7.40 | 3.917    6.20 |  5.42    2.50
               1.000    3.70 | 2.500    7.40 | 4.000    6.20 |  5.50    2.50
               1.083    3.70 | 2.583   36.90 | 4.083    4.90 |  5.58    2.50
               1.167    3.70 | 2.667   36.90 | 4.167    4.90 |  5.67    2.50
               1.250    3.70 | 2.750   36.90 | 4.250    4.90 |  5.75    2.50
               1.333    3.70 | 2.833   95.90 | 4.333    4.90 |  5.83    2.50
               1.417    3.70 | 2.917   95.90 | 4.417    4.90 |  5.92    2.50
               1.500    3.70 | 3.000   95.90 | 4.500    4.90 |  6.00    2.50

     Unit Hyd Qpeak  (cms)=   0.031

     PEAK FLOW       (cms)=   0.009 (i)
     TIME TO PEAK    (hrs)=   3.000
     RUNOFF VOLUME    (mm)=  20.501
     TOTAL RAINFALL   (mm)=  61.600
     RUNOFF COEFFICIENT   =   0.333

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| STANDHYD  (0002) |   Area    (ha)=   0.38
|ID= 1 DT= 5.0 min |   Total Imp(%)=  21.00   Dir. Conn.(%)=  21.00
--------------------

                          IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=      0.08         0.30
     Dep. Storage     (mm)=      1.00         1.50
     Average Slope     (%)=      1.38         0.52
```

```
     Length            (m)=     50.33       112.00
     Mannings n           =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     95.90        41.07
               over (min)         5.00        30.00
     Storage Coeff.  (min)=      1.56 (ii)   29.56 (ii)
     Unit Hyd. Tpeak (min)=      5.00        30.00
     Unit Hyd. peak  (cms)=      0.33         0.04
                                                      *TOTALS*
     PEAK FLOW       (cms)=      0.02         0.02      0.029 (iii)
     TIME TO PEAK    (hrs)=      3.00         3.33       3.00
     RUNOFF VOLUME    (mm)=     60.60        20.81      29.13
     TOTAL RAINFALL   (mm)=     61.60        61.60      61.60
     RUNOFF COEFFICIENT   =      0.98         0.34       0.47

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

     (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
          Fo   (mm/hr)= 50.00          K  (1/hr)=  2.00
          Fc   (mm/hr)=  7.50     Cum.Inf.   (mm)=  0.00
   (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
        THAN THE STORAGE COEFFICIENT.
   (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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-
--------------------
| CALIB            |
| NASHYD    (0001) |   Area    (ha)=   0.70   Curve Number   (CN)= 67.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

     Unit Hyd Qpeak  (cms)=   0.134

     PEAK FLOW       (cms)=   0.044 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  18.553
     TOTAL RAINFALL   (mm)=  61.600
     RUNOFF COEFFICIENT   =   0.301

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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  ****************************
  ** SIMULATION NUMBER:   4 **
  ****************************


--------------------
|    READ STORM    |    Filename: C:\Users\nnapper\AppD
```

```
|                  |              ata\Local\Temp\

|                  |
e0d9f453-99ce-4d31-8f8c-f2c8c00fd6ba\a6ea6999
| Ptotal= 72.90 mm |    Comments: 25-Year, 6 hour SCS Type II - Peterborou
--------------------
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                  0.25    2.90 |  1.75    7.30 |  3.25   16.00 |  4.75    4.40
                  0.50    2.90 |  2.00    7.30 |  3.50   16.00 |  5.00    4.40
                  0.75    4.40 |  2.25    8.80 |  3.75    7.30 |  5.25    2.90
                  1.00    4.40 |  2.50    8.80 |  4.00    7.30 |  5.50    2.90
                  1.25    4.40 |  2.75   43.70 |  4.25    5.80 |  5.75    2.90
                  1.50    4.40 |  3.00  113.70 |  4.50    5.80 |  6.00    2.90

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| CALIB            |
| NASHYD    (0003) |   Area    (ha)=   0.09   Curve Number   (CN)= 71.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.11

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
                  TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                   hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                 0.083    2.90 | 1.583    7.30 | 3.083   16.00 |  4.58    4.40
                 0.167    2.90 | 1.667    7.30 | 3.167   16.00 |  4.67    4.40
                 0.250    2.90 | 1.750    7.30 | 3.250   16.00 |  4.75    4.40
                 0.333    2.90 | 1.833    7.30 | 3.333   16.00 |  4.83    4.40
                 0.417    2.90 | 1.917    7.30 | 3.417   16.00 |  4.92    4.40
                 0.500    2.90 | 2.000    7.30 | 3.500   16.00 |  5.00    4.40
                 0.583    4.40 | 2.083    8.80 | 3.583    7.30 |  5.08    2.90
                 0.667    4.40 | 2.167    8.80 | 3.667    7.30 |  5.17    2.90
                 0.750    4.40 | 2.250    8.80 | 3.750    7.30 |  5.25    2.90
                 0.833    4.40 | 2.333    8.80 | 3.833    7.30 |  5.33    2.90
                 0.917    4.40 | 2.417    8.80 | 3.917    7.30 |  5.42    2.90
                 1.000    4.40 | 2.500    8.80 | 4.000    7.30 |  5.50    2.90
                 1.083    4.40 | 2.583   43.70 | 4.083    5.80 |  5.58    2.90
                 1.167    4.40 | 2.667   43.70 | 4.167    5.80 |  5.67    2.90
                 1.250    4.40 | 2.750   43.70 | 4.250    5.80 |  5.75    2.90
                 1.333    4.40 | 2.833  113.70 | 4.333    5.80 |  5.83    2.90
                 1.417    4.40 | 2.917  113.70 | 4.417    5.80 |  5.92    2.90
                 1.500    4.40 | 3.000  113.70 | 4.500    5.80 |  6.00    2.90

     Unit Hyd Qpeak  (cms)=   0.031

     PEAK FLOW       (cms)=   0.012 (i)
```

```
     TIME TO PEAK    (hrs)=   3.000
     RUNOFF VOLUME    (mm)=  27.385
     TOTAL RAINFALL   (mm)=  72.900
     RUNOFF COEFFICIENT   =   0.376

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0002) |   Area    (ha)=   0.38
|ID= 1 DT= 5.0 min |   Total Imp(%)=  21.00   Dir. Conn.(%)=  21.00
--------------------
                                  IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.08         0.30
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.38         0.52
     Length            (m)=      50.33       112.00
     Mannings n            =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     113.70        66.47
               over (min)          5.00        25.00
     Storage Coeff.  (min)=       1.46 (ii)   24.55 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.33         0.05
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.03          0.042 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.25          3.00
     RUNOFF VOLUME    (mm)=      71.90        29.59         38.46
     TOTAL RAINFALL   (mm)=      72.90        72.90         72.90
     RUNOFF COEFFICIENT   =       0.99         0.41          0.53

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
            Fo   (mm/hr)= 50.00          K  (1/hr)=  2.00
            Fc   (mm/hr)=  7.50     Cum.Inf.   (mm)=  0.00
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (0001) |   Area    (ha)=   0.70   Curve Number   (CN)= 67.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

     Unit Hyd Qpeak  (cms)=   0.134
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     PEAK FLOW       (cms)=   0.059 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  24.904
     TOTAL RAINFALL   (mm)=  72.900
     RUNOFF COEFFICIENT   =   0.342

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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  ****************************
  ** SIMULATION NUMBER:   5 **
  ****************************


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|    READ STORM    |    Filename: C:\Users\nnapper\AppD

|                  |             ata\Local\Temp\

|                  |
e0d9f453-99ce-4d31-8f8c-f2c8c00fd6ba\0e8bc36b
| Ptotal= 81.47 mm |    Comments: 50-Year, 6 hour SCS Type II - Peterborou
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    3.30 |  1.75    8.10 |  3.25   17.90 |  4.75    4.90
                0.50    3.30 |  2.00    8.10 |  3.50   17.90 |  5.00    4.90
                0.75    4.90 |  2.25    9.80 |  3.75    8.10 |  5.25    3.30
                1.00    4.90 |  2.50    9.80 |  4.00    8.10 |  5.50    3.30
                1.25    4.90 |  2.75   48.90 |  4.25    6.50 |  5.75    3.30
                1.50    4.90 |  3.00  127.00 |  4.50    6.50 |  6.00    3.30

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--------------------
| CALIB            |
| NASHYD    (0003) |   Area    (ha)=   0.09   Curve Number   (CN)= 71.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.11

         NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                          ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
               0.083    3.30 | 1.583    8.10 | 3.083   17.90 |  4.58    4.90
               0.167    3.30 | 1.667    8.10 | 3.167   17.90 |  4.67    4.90
               0.250    3.30 | 1.750    8.10 | 3.250   17.90 |  4.75    4.90
               0.333    3.30 | 1.833    8.10 | 3.333   17.90 |  4.83    4.90
               0.417    3.30 | 1.917    8.10 | 3.417   17.90 |  4.92    4.90
               0.500    3.30 | 2.000    8.10 | 3.500   17.90 |  5.00    4.90
               0.583    4.90 | 2.083    9.80 | 3.583    8.10 |  5.08    3.30
               0.667    4.90 | 2.167    9.80 | 3.667    8.10 |  5.17    3.30
               0.750    4.90 | 2.250    9.80 | 3.750    8.10 |  5.25    3.30
               0.833    4.90 | 2.333    9.80 | 3.833    8.10 |  5.33    3.30
               0.917    4.90 | 2.417    9.80 | 3.917    8.10 |  5.42    3.30
               1.000    4.90 | 2.500    9.80 | 4.000    8.10 |  5.50    3.30
               1.083    4.90 | 2.583   48.90 | 4.083    6.50 |  5.58    3.30
               1.167    4.90 | 2.667   48.90 | 4.167    6.50 |  5.67    3.30
               1.250    4.90 | 2.750   48.90 | 4.250    6.50 |  5.75    3.30
               1.333    4.90 | 2.833  127.00 | 4.333    6.50 |  5.83    3.30
               1.417    4.90 | 2.917  127.00 | 4.417    6.50 |  5.92    3.30
               1.500    4.90 | 3.000  127.00 | 4.500    6.50 |  6.00    3.30

     Unit Hyd Qpeak  (cms)=   0.031

     PEAK FLOW       (cms)=   0.014 (i)
     TIME TO PEAK    (hrs)=   3.000
     RUNOFF VOLUME    (mm)=  32.965
     TOTAL RAINFALL   (mm)=  81.475
     RUNOFF COEFFICIENT   =   0.405

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0002) |   Area    (ha)=   0.38
|ID= 1 DT= 5.0 min |   Total Imp(%)=  21.00   Dir. Conn.(%)=  21.00
--------------------
                                IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.08         0.30
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.38         0.52
     Length            (m)=      50.33       112.00
     Mannings n             =     0.013        0.250

     Max.Eff.Inten.(mm/hr)=     127.00        77.94
               over (min)        5.00        25.00
     Storage Coeff.  (min)=       1.40 (ii)   23.06 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.33         0.05
                                                          *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.04          0.050 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.25           3.00
     RUNOFF VOLUME    (mm)=      80.47        36.16          45.45
     TOTAL RAINFALL   (mm)=      81.48        81.48          81.48
     RUNOFF COEFFICIENT   =       0.99         0.44           0.56

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
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```
       (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
            Fo   (mm/hr)= 50.00          K  (1/hr)=  2.00
            Fc   (mm/hr)=  7.50     Cum.Inf.   (mm)=  0.00
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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--------------------
| CALIB            |
| NASHYD    (0001) |   Area    (ha)=   0.70   Curve Number   (CN)= 67.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

     Unit Hyd Qpeak  (cms)=   0.134

     PEAK FLOW       (cms)=   0.071 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  30.089
     TOTAL RAINFALL   (mm)=  81.475
     RUNOFF COEFFICIENT   =   0.369

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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  ****************************
  ** SIMULATION NUMBER:   6 **
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|    READ STORM    |    Filename: C:\Users\nnapper\AppD

|                  |              ata\Local\Temp\

|                  |
e0d9f453-99ce-4d31-8f8c-f2c8c00fd6ba\1ded71ec
| Ptotal= 89.93 mm |    Comments: 100-Year, 6 hour SCS Type II - Peterboro
--------------------
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.25    3.60 |  1.75    9.00 |  3.25   19.80 |  4.75    5.40
                0.50    3.60 |  2.00    9.00 |  3.50   19.80 |  5.00    5.40
                0.75    5.40 |  2.25   10.80 |  3.75    9.00 |  5.25    3.60
                1.00    5.40 |  2.50   10.80 |  4.00    9.00 |  5.50    3.60
                1.25    5.40 |  2.75   53.90 |  4.25    7.20 |  5.75    3.60
                1.50    5.40 |  3.00  140.20 |  4.50    7.20 |  6.00    3.60

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| CALIB            |
| NASHYD    (0003) |   Area    (ha)=   0.09   Curve Number   (CN)= 71.5
|ID= 1 DT= 5.0 min |   Ia      (mm)=   4.00   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.11

        NOTE:  RAINFALL WAS TRANSFORMED TO   5.0 MIN. TIME STEP.


                                ---- TRANSFORMED HYETOGRAPH ----
                TIME    RAIN |  TIME    RAIN |'  TIME    RAIN |  TIME    RAIN
                 hrs   mm/hr |   hrs   mm/hr |'   hrs   mm/hr |   hrs   mm/hr
                0.083    3.60 | 1.583    9.00 | 3.083   19.80 |  4.58    5.40
                0.167    3.60 | 1.667    9.00 | 3.167   19.80 |  4.67    5.40
                0.250    3.60 | 1.750    9.00 | 3.250   19.80 |  4.75    5.40
                0.333    3.60 | 1.833    9.00 | 3.333   19.80 |  4.83    5.40
                0.417    3.60 | 1.917    9.00 | 3.417   19.80 |  4.92    5.40
                0.500    3.60 | 2.000    9.00 | 3.500   19.80 |  5.00    5.40
                0.583    5.40 | 2.083   10.80 | 3.583    9.00 |  5.08    3.60
                0.667    5.40 | 2.167   10.80 | 3.667    9.00 |  5.17    3.60
                0.750    5.40 | 2.250   10.80 | 3.750    9.00 |  5.25    3.60
                0.833    5.40 | 2.333   10.80 | 3.833    9.00 |  5.33    3.60
                0.917    5.40 | 2.417   10.80 | 3.917    9.00 |  5.42    3.60
                1.000    5.40 | 2.500   10.80 | 4.000    9.00 |  5.50    3.60
                1.083    5.40 | 2.583   53.90 | 4.083    7.20 |  5.58    3.60
                1.167    5.40 | 2.667   53.90 | 4.167    7.20 |  5.67    3.60
                1.250    5.40 | 2.750   53.90 | 4.250    7.20 |  5.75    3.60
                1.333    5.40 | 2.833  140.20 | 4.333    7.20 |  5.83    3.60
                1.417    5.40 | 2.917  140.20 | 4.417    7.20 |  5.92    3.60
                1.500    5.40 | 3.000  140.20 | 4.500    7.20 |  6.00    3.60

     Unit Hyd Qpeak  (cms)=   0.031

     PEAK FLOW       (cms)=   0.017 (i)
     TIME TO PEAK    (hrs)=   3.000
     RUNOFF VOLUME    (mm)=  38.717
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.431

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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| CALIB            |
| STANDHYD  (0002) |   Area    (ha)=   0.38
|ID= 1 DT= 5.0 min |   Total Imp(%)=  21.00   Dir. Conn.(%)=  21.00
--------------------

                              IMPERVIOUS    PERVIOUS (i)
     Surface Area     (ha)=       0.08         0.30
```

```
     Dep. Storage     (mm)=       1.00         1.50
     Average Slope     (%)=       1.38         0.52
     Length            (m)=      50.33       112.00
     Mannings n           =      0.013        0.250

     Max.Eff.Inten.(mm/hr)=     140.20       102.89
               over (min)        5.00        25.00
     Storage Coeff.  (min)=       1.34 (ii)   20.73 (ii)
     Unit Hyd. Tpeak (min)=       5.00        25.00
     Unit Hyd. peak  (cms)=       0.33         0.05
                                                      *TOTALS*
     PEAK FLOW       (cms)=       0.03         0.05          0.059 (iii)
     TIME TO PEAK    (hrs)=       3.00         3.25           3.00
     RUNOFF VOLUME    (mm)=      88.93        42.69          52.39
     TOTAL RAINFALL   (mm)=      89.93        89.93          89.93
     RUNOFF COEFFICIENT   =       0.99         0.47           0.58

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

       (i) HORTONS EQUATION SELECTED FOR PERVIOUS LOSSES:
            Fo   (mm/hr)= 50.00           K  (1/hr)=  2.00
            Fc   (mm/hr)=  7.50     Cum.Inf.   (mm)=  0.00
      (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
           THAN THE STORAGE COEFFICIENT.
     (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

--------------------------------------------------------------------------------
-
--------------------
| CALIB            |
| NASHYD    (0001) |   Area    (ha)=   0.70   Curve Number   (CN)= 67.1
|ID= 1 DT= 5.0 min |   Ia      (mm)=   3.30   # of Linear Res.(N)= 3.00
--------------------   U.H. Tp(hrs)=   0.20

     Unit Hyd Qpeak  (cms)=   0.134

     PEAK FLOW       (cms)=   0.084 (i)
     TIME TO PEAK    (hrs)=   3.083
     RUNOFF VOLUME    (mm)=  35.467
     TOTAL RAINFALL   (mm)=  89.925
     RUNOFF COEFFICIENT   =   0.394

     (i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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 FINISH
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Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Wednesday, Jun 26 2024

85312 - East Swale

Trapezoidal

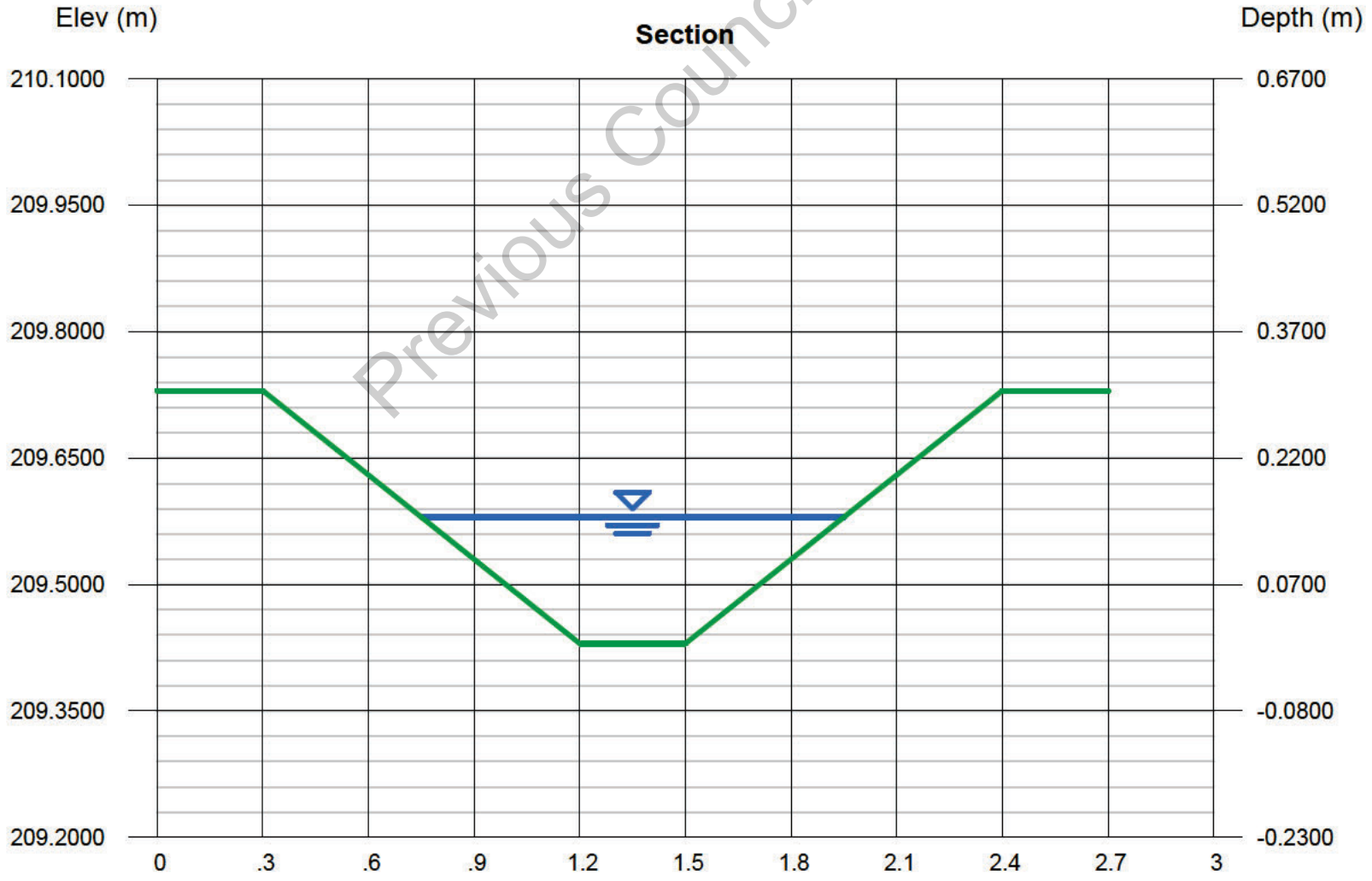
Bottom Width (m)	= 0.3000
Side Slopes (z:1)	= 3.0000, 3.0000
Total Depth (m)	= 0.3000
Invert Elev (m)	= 209.4300
Slope (%)	= 0.5000
N-Value	= 0.030

Calculations

Compute by:	Q vs Depth
No. Increments	= 20

Highlighted

Depth (m)	= 0.1500
Q (cms)	= 0.053
Area (sqm)	= 0.1125
Velocity (m/s)	= 0.4735
Wetted Perim (m)	= 1.2487
Crit Depth, Yc (m)	= 0.1067
Top Width (m)	= 1.2000
EGL (m)	= 0.1614



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Jul 16 2024

Outlet Swale

Trapezoidal

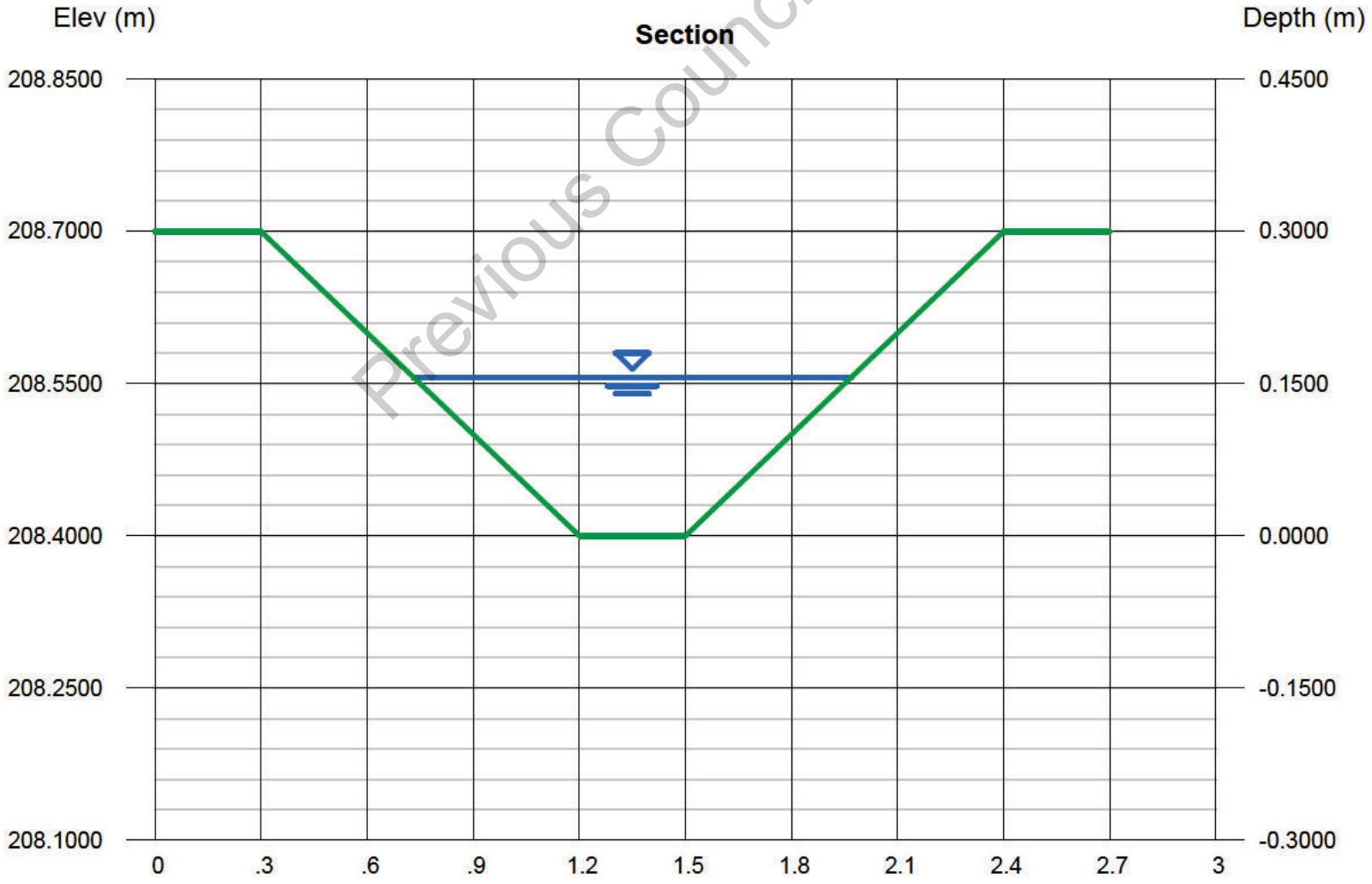
Bottom Width (m)	= 0.3000
Side Slopes (z:1)	= 3.0000, 3.0000
Total Depth (m)	= 0.3000
Invert Elev (m)	= 208.4000
Slope (%)	= 1.0000
N-Value	= 0.030

Calculations

Compute by:	Q vs Depth
No. Increments	= 50

Highlighted

Depth (m)	= 0.1560
Q (cms)	= 0.082
Area (sqm)	= 0.1198
Velocity (m/s)	= 0.6846
Wetted Perim (m)	= 1.2866
Crit Depth, Yc (m)	= 0.1311
Top Width (m)	= 1.2360
EGL (m)	= 0.1799



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Jul 4 2024

West Swale

Trapezoidal

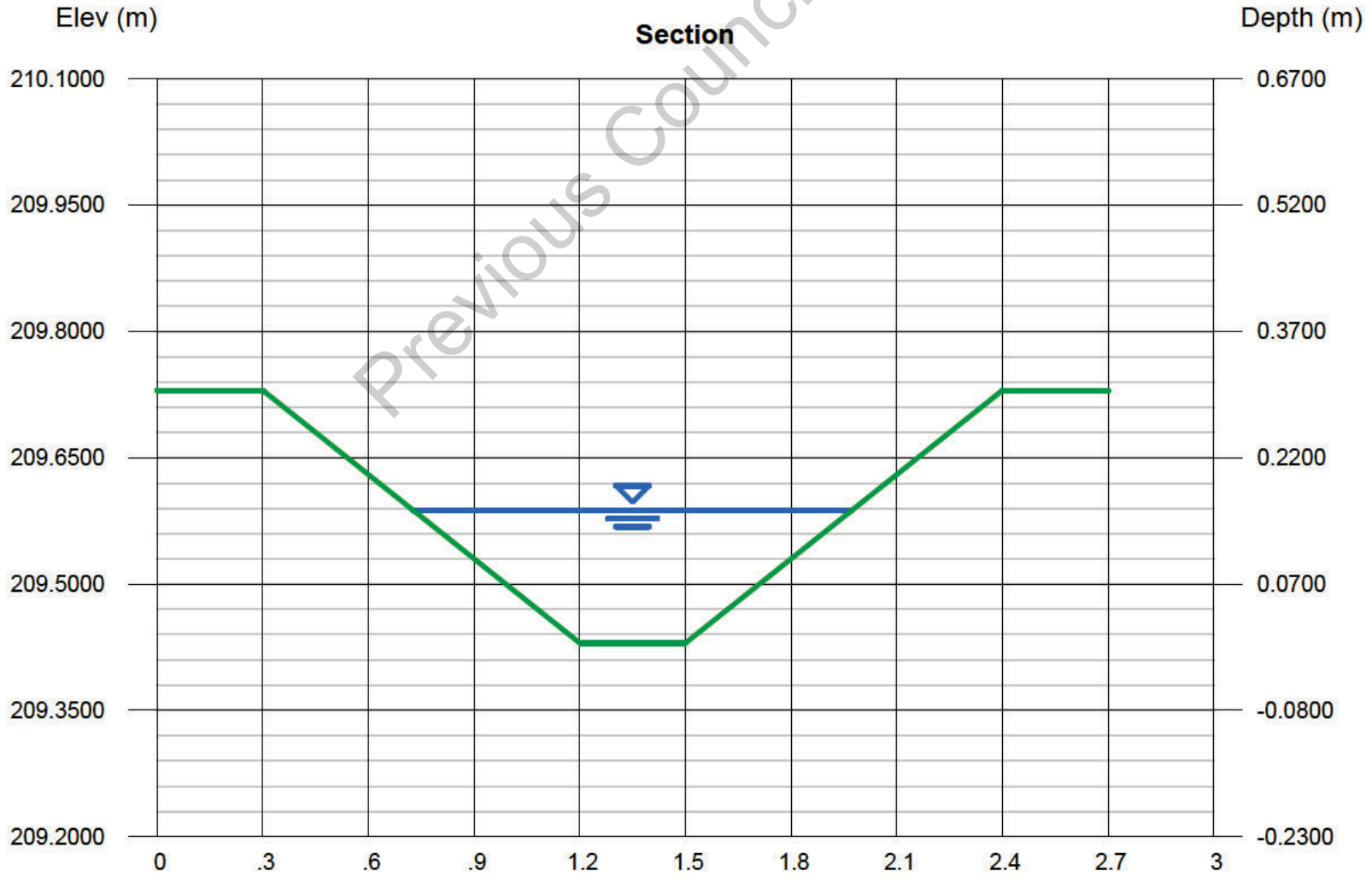
Bottom Width (m)	= 0.3000
Side Slopes (z:1)	= 3.0000, 3.0000
Total Depth (m)	= 0.3000
Invert Elev (m)	= 209.4300
Slope (%)	= 0.5000
N-Value	= 0.030

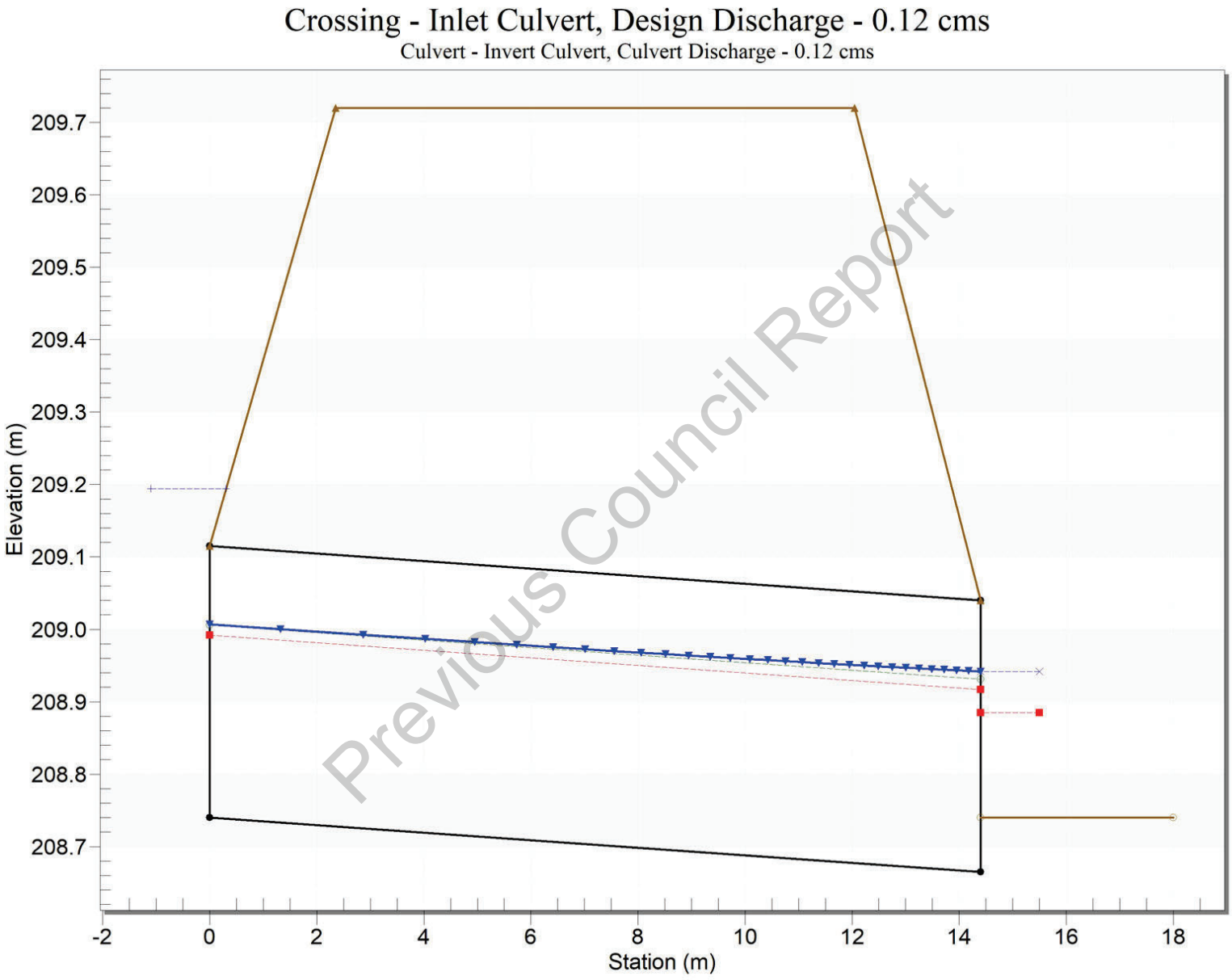
Highlighted

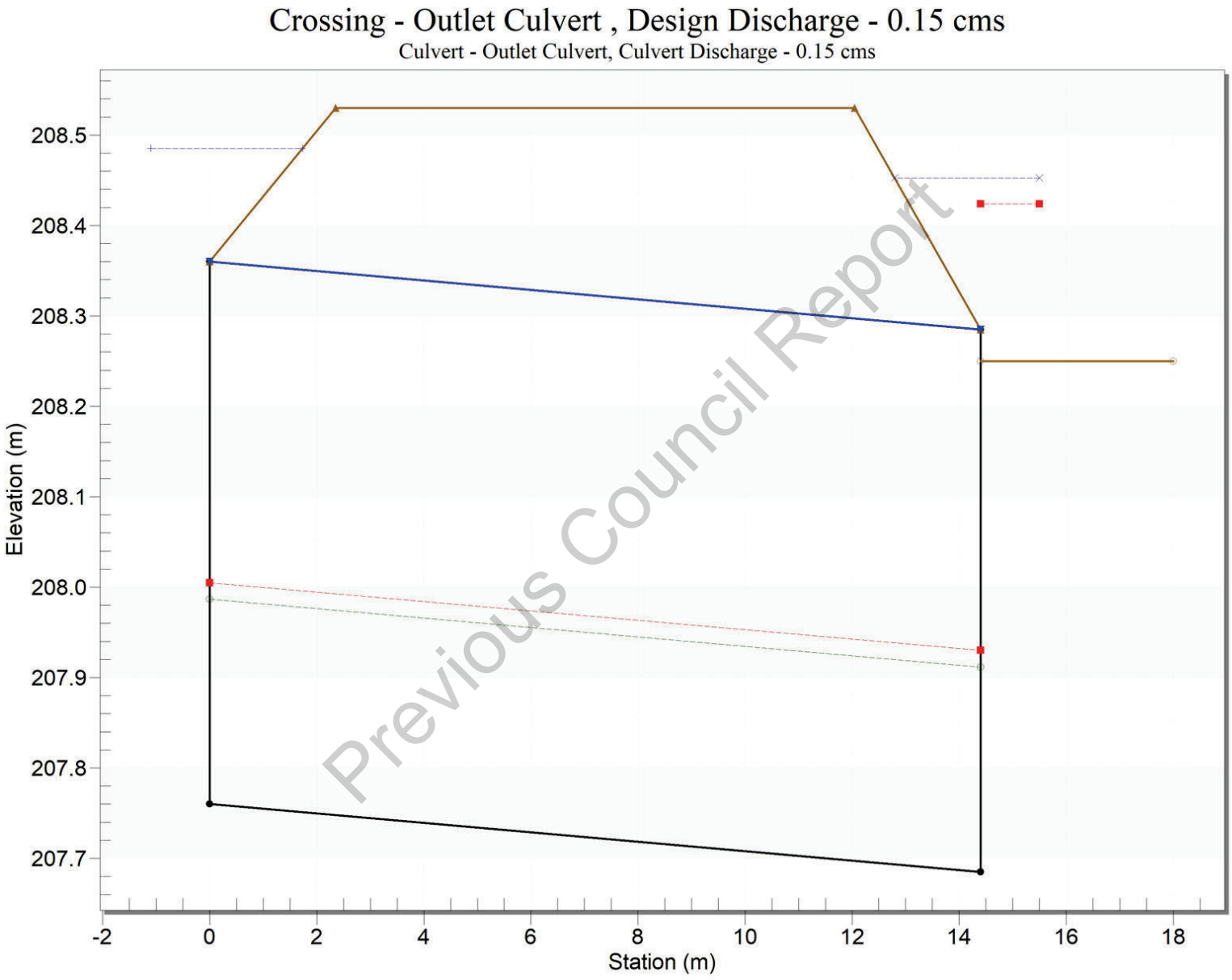
Depth (m)	= 0.1575
Q (cms)	= 0.059
Area (sqm)	= 0.1217
Velocity (m/s)	= 0.4867
Wetted Perim (m)	= 1.2961
Crit Depth, Yc (m)	= 0.1128
Top Width (m)	= 1.2450
EGL (m)	= 0.1696

Calculations

Compute by:	Q vs Depth
No. Increments	= 40




Crossing - Inlet Culvert, Design Discharge - 0.12 cms
Culvert - Invert Culvert, Culvert Discharge - 0.12 cms
Elevation (m)
209.7
209.6
209.5
209.4
209.3
209.2
209.1
209.0
208.9
208.8
208.7
-2
0
2
4
6
8
10
12
14
16
18
Station (m)
Previous Council Report



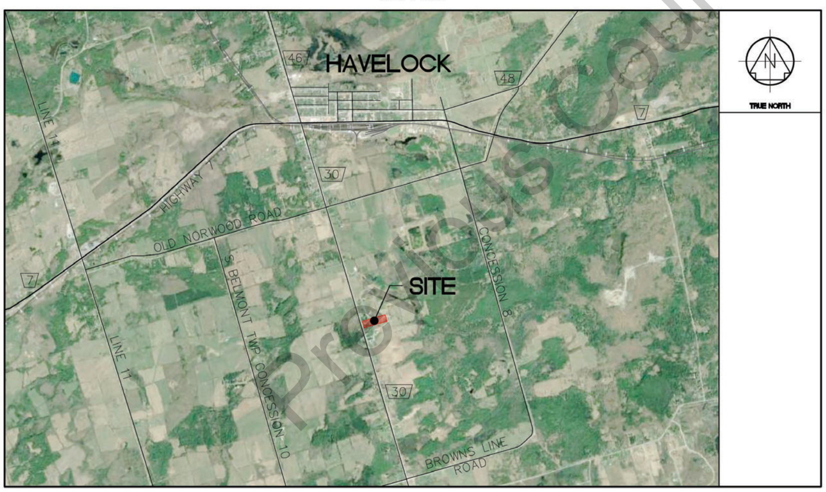
Appendix E

Detailed Design Drawings

LEGEND:

- ASPHALT TO BE REMOVED
- CONCRETE TO BE REMOVED
- TREE AND BRUSH REMOVAL AREA
- PROPOSED MUD MAT
- TYPICAL ILLUSTRATION FOR REMOVAL
- TYPICAL ILLUSTRATION FOR REMOVAL
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED RETAINING WALL
- REFER TO LANDSCAPE PLAN FOR DETAILS IN THIS AREA
- PROPOSED CONCRETE
- EX./PR. SIDEWALK
- PROPOSED GRAVEL/RIP-RAP
- PROPOSED TOPSOIL AND SOD
- EX./PR. BUILDING
- EX./PR. EDGE OF PAVEMENT
- EX./PR. CURB
- EX./PR. EDGE OF SHOULDER/GRAVEL
- EX./PR. ROAD CENTERLINE
- SITE PROPERTY LINE
- OTHER PROPERTY LINE
- EX./PR. DITCH
- EX./PR. FENCE
- EXISTING RAILWAY
- EX./PR. GUIDERAIL
- EX./PR. CULVERT
- EX./PR. STORM SEWER
- EX./PR. SANITARY SEWER
- EX./PR. WATERMAIN
- PROPOSED PIPE INSULATION
- EXISTING GASMAIN
- EX. OVERHEAD BELL
- EX. UNDERGROUND BELL
- EX. OVERHEAD HYDRO
- EX. UNDERGROUND HYDRO
- EX. UNDERGROUND CABLE
- EXISTING TREE DRIP LINE
- EXISTING CONTOUR
- CONSTRUCTION FENCE
- PROPOSED SILT FENCE
- 100 YEAR PONDING
- EX./PR. SANITARY MANHOLE
- EX./PR. CATCH BASIN MANHOLE
- EX./PR. STORM MANHOLE
- EX./PR. CATCH BASIN
- EX./PR. DOUBLE CATCH BASIN
- EX./PR. FIRE HYDRANT
- EX./PR. WATER VALVE
- FIRE DEPARTMENT CONNECTION
- EX. GAS VALVE
- EX. HYDRO MH
- EX. BELL MH
- EX. BELL/CABLE PEDESTAL
- EX./PR. LIGHT STANDARD
- EXISTING HYDRO POLE
- EXISTING BELL POLE
- EXISTING POLE ANCHOR
- EX./PR. SIGN
- TACTILE WARNING INDICATOR
- EX./PR. BOLLARD
- EX./PR. ELEVATION
- PROPOSED GRADE
- CONTROL POINT
- BOREHOLE
- PROPOSED PARKING NUMBER
- EXISTING VEGETATION
- PROPOSED TREE
- EXISTING DECIDUOUS TREE
- EXISTING CONIFEROUS TREE
- OVERLAND FLOW ROUTE

KEY PLAN



CIVIL DRAWING LIST

SHT #	DRAWING TITLE	REV.	REV. DATE
100	LOCATION AND LEGEND	1	19/07/2024
101	GENERAL NOTES	1	19/07/2024
102	DETAILS	1	19/07/2024
200	REMOVALS, SEDIMENT AND EROSION CONTROL	1	19/07/2024
400	SITE PLAN	1	19/07/2024
500	GRADING PLAN	1	19/07/2024

BM1 – 210.63
COSINE BENCH MARK
00819668561 (CGVD28:78)

TRUE NORTH

REVISIONS

No.	Description	Date
1	SUBMITTED TO TOWNSHIP – 1ST SPA SUBMISSION	19/07/24

METRIC Dimensions are in METRES and/or MILLIMETRES unless otherwise shown

LEGEND TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

LICENSED PROFESSIONAL ENGINEER
E.R. ST. PIERRE
100500092
July 19, 2024
PROVINCE OF ONTARIO

WILLS
D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

THOMAS SELF-STORAGE FACILITY
9351 COUNTY ROAD 30, TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

Drawing Title

LOCATION AND LEGEND

Drawn By: CM	SCALE: Horz. N/A Vert. N/A		
Designed By: CM	Issue Date: July 22, 2024		
Checked By: JDF	Project No.: 23-85312	Sht. No.:	
Engineer: ESP	Dwg File No.: 85312 – CS	100	

NOT FOR CONSTRUCTION

1. SOURCE DATA

1.1. THE ENGINEERING DESIGN RELIES ON THE TOPOGRAPHIC PLAN DATED SEPTEMBER 8, 2023, PROJECT NO. 23-19-197-00, PREPARED BY ELLIOTT AND PARR (PETERBOROUGH).

1.2. THE ENGINEERING DESIGN RELIES ON THE SITE PLAN DATED JULY 10, 2024, PROJECT NO. 23-85312, PREPARED BY D.M. WILLS.

1.3. THE LOCATION OF EXISTING UNDERGROUND ELECTRIC, GAS, DATA TRANSMISSION, TELEPHONE AND CABLE TELEVISION IDENTIFIED ON THE CONTRACT DRAWINGS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL LOCATE ALL UTILITIES HORIZONTALLY AND VERTICALLY PRIOR TO COMMENCEMENT OF CONSTRUCTION IN ACCORDANCE WITH OPSS 100 GC 7.01.09.

2. GENERAL CONSTRUCTION

2.1. REFERENCES WITHIN THESE CONTRACT DOCUMENTS TO AN OPSS SHALL BE DEEMED TO MEAN OPSS.MUNI, UNLESS USE OF A PROVINCIAL-ORIENTED SPECIFICATION IS SPECIFIED IN THE CONTRACT DOCUMENTS. WHEN THERE IS NOT A CORRESPONDING MUNICIPAL ORIENTED SPECIFICATION, THE REFERENCES BELOW SHALL BE CONSIDERED TO BE THE OPSS.COMM.

2.2. THE WORK IS TO BE COMPLETED IN ACCORDANCE WITH OPSS MUNI 100 GENERAL CONDITIONS OF CONTRACT.

2.3. THE ENGINEERING DESIGN REFERENCES THE FOLLOWING CONTROL POINTS, PROVIDED BY ELLIOTT AND PARR:

BM1 – ELEV: 210.63m – COSINE BENCHMARK 00819668561 (CGVD28: 78)

2.4. THE CONTRACTOR SHALL VERIFY ALL CONTROL POINTS WITH THE CONTRACT ADMINISTRATOR IN A FORMAT AS PRESCRIBED BY THE CONTRACT ADMINISTRATOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

2.5. THE CONTRACTOR SHALL UNDERTAKE ALL LAYOUT REQUIRED TO FACILITATE THE CONSTRUCTION OF THIS CONTRACT.

2.6. WITH THE EXCEPTION OF THE REFERENCED LOCAL CONTROL POINTS SPECIFICALLY PROVIDED IN THE CONTRACT DRAWINGS, NO ELEVATION WITHIN THE CONTRACT DRAWINGS ARE TO BE USED AS A REFERENCE FOR LAYOUT.

2.7. THE REPLACEMENT OF DISTURBED OR OTHERWISE DAMAGED CONTROL POINTS BY AN OLS SURVEYOR WILL BE AT THE SOLE EXPENSE OF THE CONTRACTOR.

2.8. THE CONTRACTOR SHALL USE THE LOCAL CONTROL POINTS AS SPECIFIED ON THE CONTRACT DRAWINGS. THE USE OF AN INCORRECT CONTROL POINT BY THE CONTRACTOR, THAT RESULTS IN DEFICIENT WORK, EITHER IN VERTICAL OR HORIZONTAL ALIGNMENT, SHALL BE CORRECTED BY THE CONTRACTOR AT THE SOLE EXPENSE OF THE CONTRACTOR.

2.9. ANY DISCREPANCY BETWEEN THE SITE CONDITIONS AND THE CONTRACT DRAWINGS SHALL IMMEDIATELY BE REPORTED TO THE CONTRACT ADMINISTRATOR.

2.10. THE CONTRACTOR SHALL OBTAIN AND MAINTAIN COPIES OF ALL REFERENCED STANDARD DOCUMENTS AND DRAWINGS ON SITE FOR THE DURATION OF THE WORK.

2.11. THE CONTRACTOR SHALL KEEP RECORDS AND SUPPLY THE CONTRACT ADMINISTRATOR WITH RED-LINED AS CONSTRUCTED DRAWINGS NOTING THAT ALL SITE SERVICE INSTALLATION WORKS WERE INSTALLED AS PER THE CONTRACT DOCUMENTS, OR OTHERWISE NOTING THE ACTUAL STRUCTURE LOCATIONS, PIPE DETAILS (LENGTH, SIZE AND / OR MATERIAL), AND INVERTS AND ANY OTHER DEVIATION FROM THE CONTRACT DOCUMENTS.

2.12. NO ADDITIONAL PAYMENT WILL BE MADE FOR COSTS ASSOCIATED WITH THE SUPPORT, PRESERVATION AND / OR RELOCATION OF EXISTING UTILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS, UNLESS SPECIFICALLY NOTED OTHERWISE.

3. EROSION AND SEDIMENT CONTROL

3.1. EROSION AND SEDIMENT CONTROL AND TREE PROTECTION MEASURES SHALL BE IMPLEMENTED PRIOR TO, AND MAINTAINED DURING CONSTRUCTION TO PREVENT ENTRY OF SEDIMENT LADEN WATER INTO EXISTING INFRASTRUCTURE, WATERBODIES OR ONTO ADJACENT LANDS. ALL DAMAGED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF INSPECTION.

3.2. DISTURBANCE TO EXISTING VEGETATED AREAS WITHIN THE WORK AREA SHALL BE MINIMIZED TO THE EXTENT POSSIBLE. NO ADDITIONAL PAYMENT WILL BE MADE FOR RESTORATION OF AREAS DISTURBED BY CONSTRUCTION UNLESS NOTED IN THE CONTRACT DOCUMENTS.

3.3. THE EROSION AND SEDIMENT CONTROL STRATEGIES OUTLINED ON THE PLANS ARE NOT STATIC AND MAY NEED TO BE UPGRADED / AMENDED AS SITE CONDITIONS CHANGE TO MINIMIZE SEDIMENT LADEN RUNOFF FROM LEAVING THE WORK AREA. ADDITIONAL OR ALTERNATIVE CONTROL MEASURES SHALL BE IMPLEMENTED IMMEDIATELY UPON DIRECTION FROM THE CONTRACT ADMINISTRATOR. ADDITIONAL MATERIALS SHALL BE KEPT ON SITE TO BE USED AS NECESSARY.

3.4. EROSION AND SEDIMENT CONTROLS SHALL BE INSPECTED ACCORDING TO THE FOLLOWING SCHEDULE:

3.4.1. ON A WEEKLY BASIS;
3.4.2. AFTER EVERY RAINFALL (>15mm) EVENT;
3.4.3. AFTER SIGNIFICANT SNOWMELT EVENTS; AND,
3.4.4. DAILY DURING EXTENDED RAIN OR SNOWMELT PERIODS
3.4.5. DURING INACTIVE CONSTRUCTION PERIODS, WHERE THE SITE IS LEFT ALONE FOR 30 DAYS OR LONGER, A MONTHLY INSPECTION SHOULD BE CONDUCTED.

3.5. ALL ACTIVITIES, INCLUDING MAINTENANCE PROCEDURES, SHALL BE CONTROLLED TO PREVENT THE ENTRY OF PETROLEUM PRODUCTS, DEBRIS, RUBBLE, CONCRETE OR OTHER DELETERIOUS SUBSTANCES ONTO ROADS OR ADJACENT PROPERTIES, OR INTO SEWERS OR ADJACENT WATERBODIES.

3.5.1. SPILLING OF HAZARDOUS MATERIAL SHALL BE REPORTED TO THE MINISTRY OF THE ENVIRONMENT (MOE) ONLINE OR FOR EMERGENCIES CALL 1-866-MOE-TIPS (663-8477)

3.6. ALL EROSION AND SEDIMENT CONTROL AND TREE PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS AUTHORIZED BY THE CONTRACT ADMINISTRATOR.

3.7. CONTRACTOR EQUIPMENT AND VEHICLES ARE PERMITTED WITHIN THE DRIPLINE OF TREES NOT DESIGNATED FOR REMOVAL.

3.8. ALL COSTS ASSOCIATED WITH THE MAINTENANCE OF EROSION AND SEDIMENT CONTROLS, INCLUDING REMOVAL OF ACCUMULATED SEDIMENT AND REPAIR / REPLACEMENT OF DAMAGED MEASURES SHALL BE INCLUDED IN THE CONTRACT PRICE. NO ADDITIONAL PAYMENT WILL BE MADE.

4. GRADING / EARTHWORKS

4.1 MANAGEMENT OF EXCESS MATERIAL BY OPEN BURNING IS NOT PERMITTED.

5. REMOVALS

5.1. NATURAL WOOD SHALL BE MANAGED AS EXCESS MATERIAL AND MAY NOT BE MANAGED AS DISPOSABLE FILL WITHIN THE CONTRACT LIMITS.

5.2. BORROW MATERIAL SHALL BE SELECT SUBGRADE MATERIAL (SSM).

5.3. IF REQUESTED BY THE CONTRACT ADMINISTRATOR, THE CONTRACTOR SHALL SUPPLY QUALITY ASSURANCE (QA) BORROW MATERIAL SAMPLES TO THE CONTRACT ADMINISTRATOR TO DELIVER TO THE QA LABORATORY.

5.4. SOURCE SITE FOR SUITABLE EARTH BORROW FILL MATERIAL TO BE DETERMINED IN CONSULTATION WITH CONTRACTOR AND CONTRACT ADMINISTRATOR

5.5. ALL UTILITY REMOVALS SHALL BE COORDINATED WITH THE RESPECTIVE UTILITY AUTHORITY FOR SPECIFIC ITEMS AND LIMITS PRIOR TO REMOVAL. THE DIRECTION FOR REMOVAL BY THE UTILITY SHALL TAKE PRECEDENCE OVER THIS DRAWING.

6. CULVERTS

6.1. CULVERTS SHALL BE FLUSHED AND CLEANED PRIOR TO INSPECTION AND ACCEPTANCE.

7. ROADWORKS / BOULEVARDS

7.1. NO PLACEMENT OF SURFACE COURSE ASPHALT SHALL OCCUR UNTIL BASE COURSE ASPHALT HAS BEEN TESTED, STRUCTURE INSPECTED AND ACCEPTED IN WRITING BY THE CONTRACT ADMINISTRATOR.

7.2. THE CONTRACT ADMINISTRATOR MUST AUTHORIZE THE STOCKPILE LOCATIONS PROPOSED BY THE CONTRACTOR, PRIOR TO THE IMPORT OF ANY MATERIAL TO BE STOCKPILED.

7.3. ALL FORMWORK SHALL BE REVIEWED BY THE CONTRACT ADMINISTRATOR PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE CONTRACT ADMINISTRATOR A MINIMUM OF 2 BUSINESS DAYS PRIOR TO THE SCHEDULED CONCRETE POUR TO ALLOW TIME TO COORDINATE FORMWORK REVIEW. CONCRETE PLACED PRIOR TO THE REVIEW OF THE CONTRACT ADMINISTRATOR MAY BE REQUIRED TO BE REMOVED, DISPOSED OFF-SITE AND REPLACED AT THE SOLE EXPENSE OF THE CONTRACTOR.

7.4. SITE ENTRANCE PAVEMENT STRUCTURE AND GRAVEL PARKING LOT STRUCTURE TO BE CONFIRMED BY A QUALIFIED GEOTECHNICAL ENGINEER.

7.5. TOP SOIL AND SEEDED AREAS SHALL BE TO A DEPTH OF 150mm.

7.5.1. SEED SHALL BE STANDARD ROADSIDE MIX.

8. INSPECTION AND DOCUMENTATION REQUIREMENTS

8.1. SUBMIT SHOP DRAWINGS TO THE CONTRACT ADMINISTRATOR PROMPTLY AND IN ORDERLY SEQUENCE TO NOT CAUSE DELAY IN WORK. FAILURE TO SUBMIT IN AMPLE TIME IS NOT CONSIDERED SUFFICIENT REASON FOR EXTENSION OF CONTRACT TIME AND NO CLAIM FOR EXTENSION BY REASON OF SUCH DEFAULT WILL BE ALLOWED. DO NOT PROCEED WITH WORK AFFECTED BY SUBMITTAL UNTIL REVIEW IS COMPLETE. REVIEW SHOP DRAWINGS PRIOR TO SUBMISSION. THIS REVIEW REPRESENTS THAT NECESSARY REQUIREMENTS HAVE BEEN DETERMINED AND VERIFIED, OR WILL BE, AND THAT EACH SUBMITTAL HAS BEEN CHECKED AND CO-ORDINATED WITH REQUIREMENTS OF WORK AND CONTRACT DOCUMENTS. SUBMITTALS NOT STAMPED, SIGNED, DATED AND IDENTIFIED AS TO SPECIFIC PROJECT WILL BE RETURNED WITHOUT BEING EXAMINED AND CONSIDERED REJECTED. ALLOW 5 BUSINESS DAYS FOR THE FIRST, AND 3 BUSINESS DAYS FOR RESUBMITTED SHOP DRAWING REVIEW.

8.2. THE CONTRACTOR SHALL CONTACT THE CONTRACT ADMINISTRATOR A MINIMUM OF 2 BUSINESS DAYS IN ADVANCE OF THE FOLLOWING ACTIVITIES IN ORDER FOR THE CONTRACT ADMINISTRATOR TO ARRANGE FOR THE PROPER INSPECTION OF THE RELATED CONSTRUCTION ACTIVITIES. IF THE REQUIRED NOTICE IS NOT PROVIDED, THE CONTRACTOR MAY BE REQUIRED TO UNDERTAKE ADDITIONAL WORKS, AT THE SOLE EXPENSE OF THE CONTRACTOR, TO PERMIT THE CONTRACT ADMINISTRATOR TO INSPECT AND / OR VERIFY THAT THE WORKS HAVE CONSTRUCTED IN CONFORMACE WITH THE CONTRACT DOCUMENTS.

8.2.1. MOBILIZATION DATE, PROPOSED CONSTRUCTION SCHEDULE AND CONTRACTOR CONTACT INFORMATION.
8.2.2. VERIFY SITE CONTROL POINTS PRIOR TO LAYOUT.
8.2.3. UPON COMPLETION OF ALL EROSION AND SEDIMENT CONTROL WORKS.
8.2.4. PRIOR TO THE PLACEMENT OF ANY GRANULAR ROAD OR PARKING LOT GRANULAR BASE.
8.2.5. PRIOR TO ANY CONCRETE POUR.
8.2.6. PRIOR TO THE DEMOBILIZATION OF THE SERVICING CONTRACTOR FROM THE SITE.

8.3. THE CONTRACTOR SHALL SUPPLY THE CONTRACT ADMINISTRATOR WITH COPIES OF ALL TESTING AND INSPECTION REPORTS RELATED TO THE WORK WITHIN 4 BUSINESS DAYS OF THE REPORTING.

OPSS INDEX

NUMBER	REV.	DATE	DESCRIPTION
180		NOV-21	GENERAL SPECIFICATION FOR THE MANAGEMENT OF EXCESS MATERIALS
201		APR-19	CLEARING, CLOSE CUT CLEARING, GRUBBING, AND REMOVAL OF SURFACE AND PILED BOULDERS
206		APR-19	GRADING
212		NOV-19	BORROW
301		NOV-18	RESTORING UNPAVED ROADWAY SURFACES
310		NOV-17	HOT MIX ASPHALT
314		NOV-19	UNTREATED SUB-BASE, BASE, SURFACE, SHOULDER, SELECTED SUBGRADE AND STOCKPILING
401		NOV-21	TRENCHING, BACKFILLING, AND COMPACTING
421		NOV-18	PIPE CULVERT INSTALLATION IN OPEN CUT
491		NOV-23	UNTREATED GRANULAR SUBBASE, BASE, SURFACE, SHOULDER AND STOCKPILING
501		NOV-17	COMPACTING
510		NOV-18	REMOVAL
772		APR-19	CHAIN-LINK FENCE
801		NOV-19	PROTECTION OF TREES
802		NOV-19	TOPSOIL
804		NOV-14	SEED AND COVER
805		NOV-21	TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

OPSD INDEX

NUMBER	REV.	DATE	DESCRIPTION
102.010	1	NOV-06	REMOVALS, LEGEND
219.130	3	NOV-21	HEAVY-DUTY SILT FENCE BARRIER
301.020	2	NOV-10	RURAL ENTRANCES TO ROADS IN EARTH CUT
801.020	2	NOV-17	END SECTION DETAILS, CORRUGATED STEEL PIPE
802.010	3	NOV-14	FLEXIBLE PIPE EMBEDMENT AND BACKFILL, EARTH EXCAVATION
802.034	3	NOV-15	RIGID PIPE BEDDING AND COVER IN EMBANKMENT, ORIGINAL GROUND, EARTH OR ROCK
972.102	2	NOV-12	FENCE, CHAIN-LINK, COMPONENT – GATE
972.132	0	NOV-12	FENCE, CHAIN-LINK, DETAILS AND TABLE

MTOD INDEX

NUMBER	REV.	DATE	DESCRIPTION
MTOD 305.150	0	AUG-18	COMMERCIAL ENTRANCE, SITE PROFILE STANDARD

BM1 – 210.63
COSINE BENCH MARK
00819668561 (CGVD28: 78)

TRUE NORTH

KEY PLAN

REVISIONS

No.	Description	Date
1	SUBMITTED TO TOWNSHIP – 1ST SPA SUBMISSION	19/07/24

METRIC — Dimensions are in METRES and/or MILLIMETRES unless otherwise shown

LEGEND — TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

LICENSED PROFESSIONAL ENGINEER
E.R. ST. PIERRE
100500092
July 19, 2024
PROVINCE OF ONTARIO

WILLS

D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9

P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

THOMAS SELF-STORAGE FACILITY

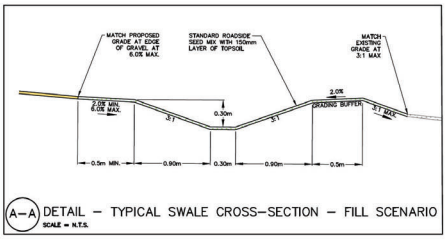
9351 COUNTY ROAD 30, TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

Drawing Title

GENERAL NOTES

Drawn By: CM	SCALE: Horz. N/A Vert. N/A	
Designed By: CM	Issue Date: July 22, 2024	
Checked By: JDF	Project No.: 23-85312	Sht. No.:
Engineer: ESP	Dwg File No.: 85312-GNDT	101

NOT FOR CONSTRUCTION



A–A DETAIL – TYPICAL SWALE CROSS–SECTION – FILL SCENARIO
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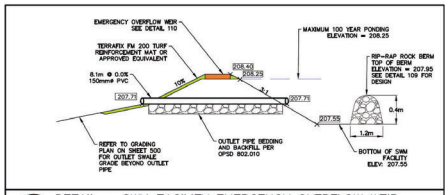

C–C DETAIL – SWM FACILITY EMERGENCY OVERFLOW WEIR CROSS–SECTION
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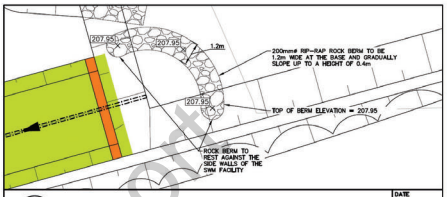
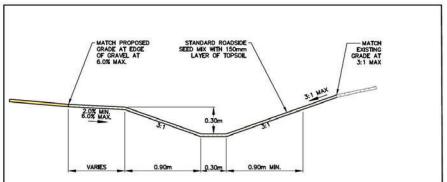


109 RIP–RAP ROCK BERM
SCALE = N.T.S.

DATE JULY 2024
REV 0



B–B DETAIL – TYPICAL SWALE CROSS–SECTION – CUT SCENARIO
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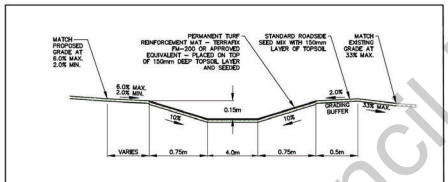

D–D DETAIL – EMERGENCY WEIR FLAT–BOTTOMED OUTLET SWALE
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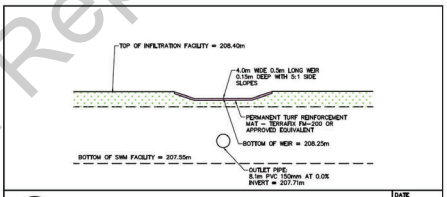
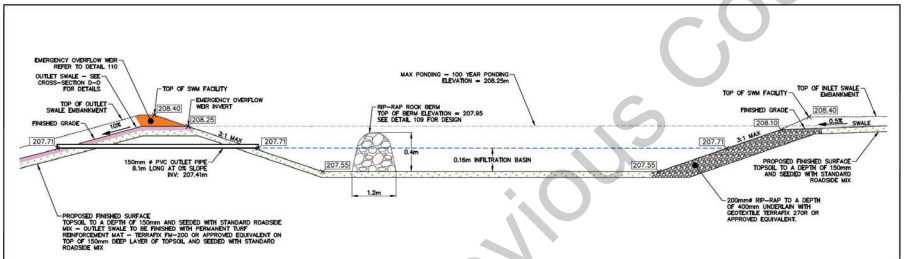


110 EMERGENCY OVERFLOW WEIR
SCALE = N.T.S.

DATE JUN 2023
REV 0



E–E STORMWATER INFILTRATION BASIN CROSS SECTION
SCALE = N.T.S.

DATE JULY 2024
REV 0

BM1 – 210.63
COSINC BENCH MARK
(0018698581 (CON)28.78)

TRUE NORTH

KEY PLAN
HAVELOCK
SITE

REVISIONS

No.	Description	Date
1	SUBMITTED TO TOWNSHIP – 1ST SPA SUBMISSION	19/07/24

METRIC Dimensions are in METRIC mm/m unless otherwise shown

LEGEND SEE KEY PLAN IN CONJUNCTION WITH OPSD 100 SERIES

LICENSED PROFESSIONAL ENGINEER
C.M.PROCTOR
100195369
July 19, 2024
PROVINCE OF ONTARIO

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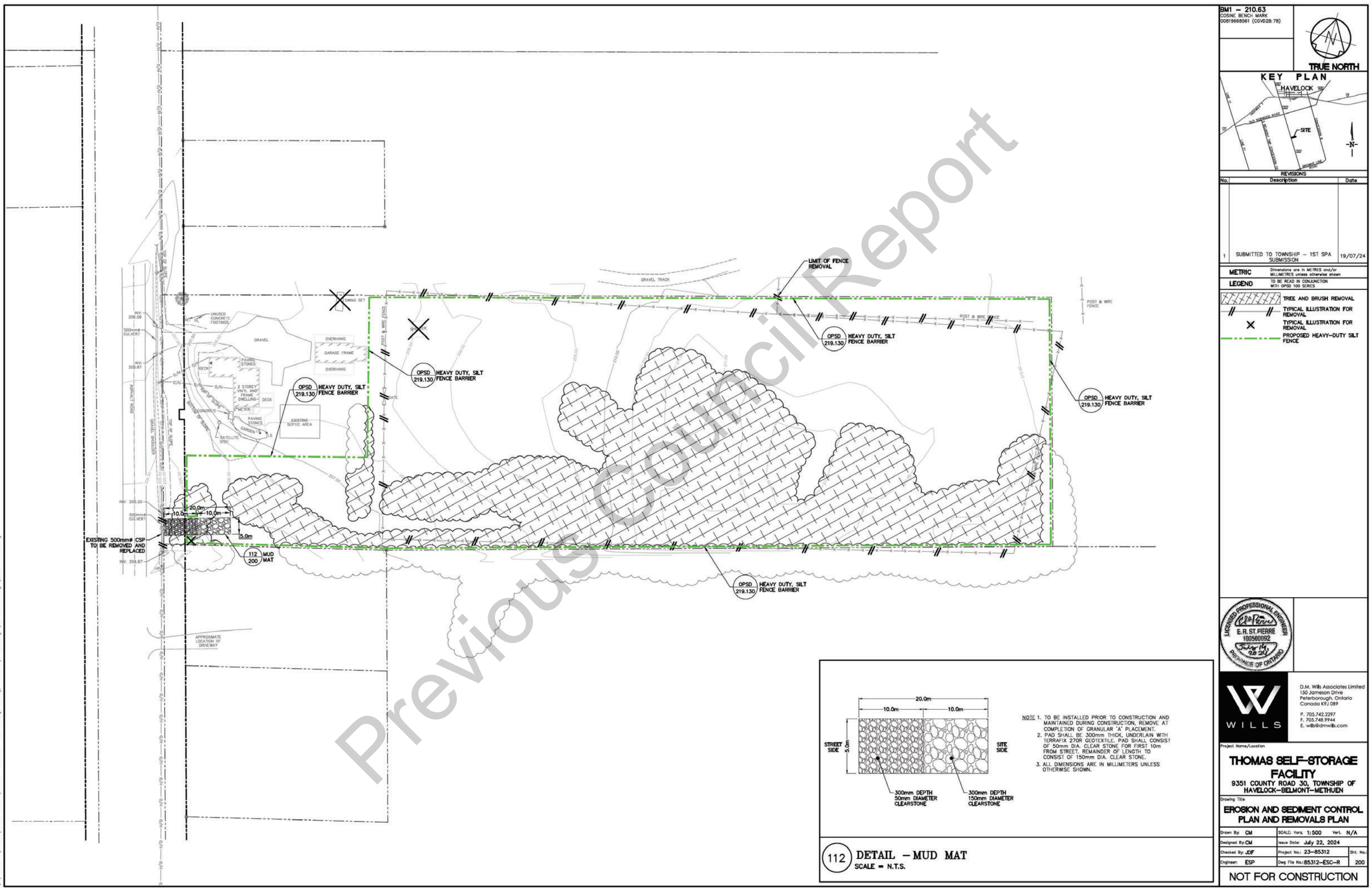
Project Name/Location
THOMAS SELF–STORAGE FACILITY
9351 COUNTY ROAD 30, TOWNSHIP OF HAVELOCK–BELMONT–METHUEN

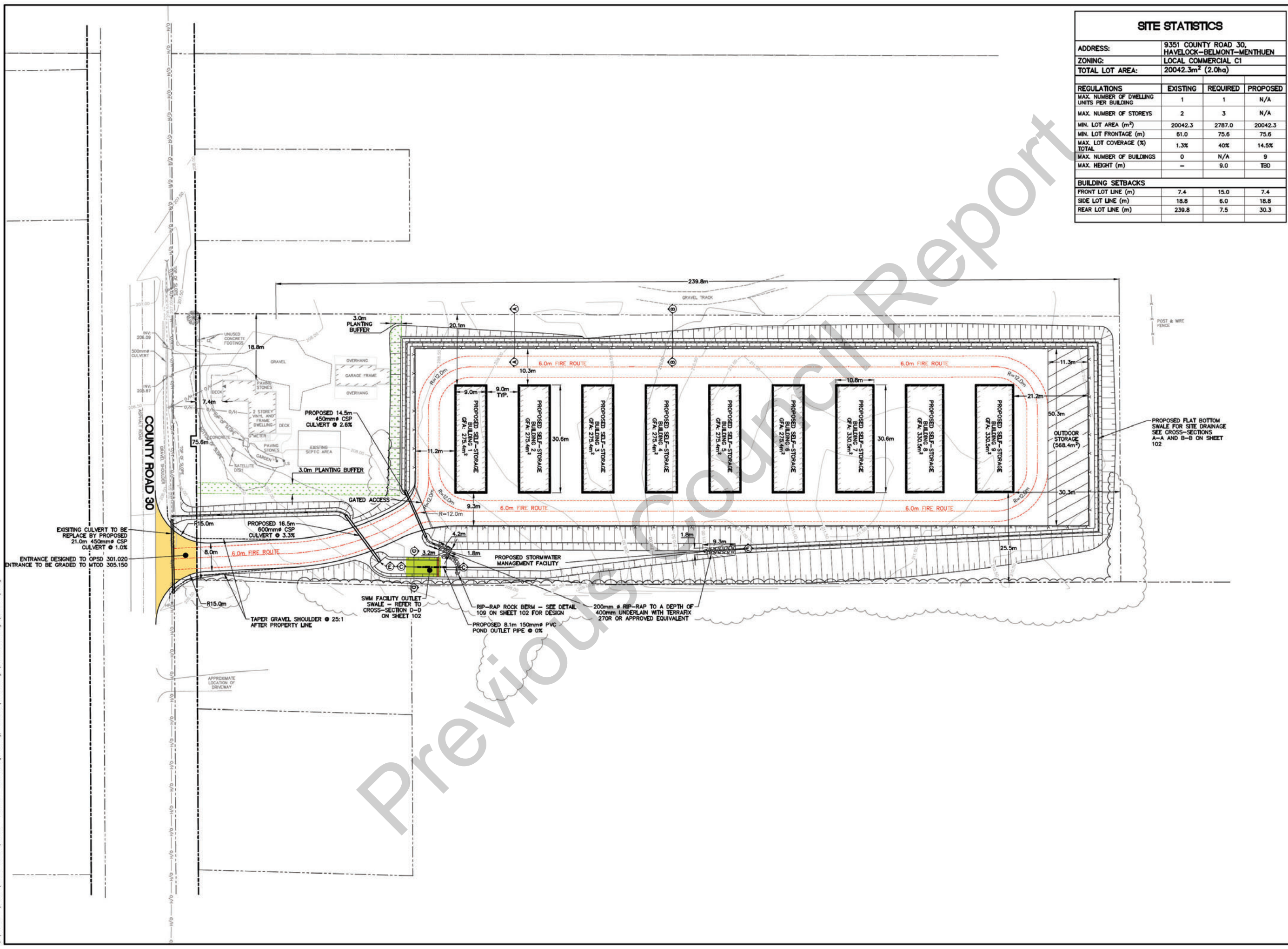
Drawing Title
DETAILS

Drawn By: CM	SCALE: Horz. N/A	Vert. N/A	
Designed By: CM	Issue Date: July 22, 2024		
Checked By: JDF	Project No.: 23–85312	Drl. No.	
Engineer: CPB	Dwg File No.: 85312–GNDT	102	

NOT FOR CONSTRUCTION



BM1 – 210.63
TRUE NORTH
KEY PLAN
HAVELOCK
SITE
REVISIONS
No. Description Date
1 SUBMITTED TO TOWNSHIP – 1ST SPA SUBMISSION 19/07/24
METRIC
LEGEND
TREE AND BRUSH REMOVAL
TYPICAL ILLUSTRATION FOR REMOVAL
TYPICAL ILLUSTRATION FOR REMOVAL
PROPOSED HEAVY-DUTY SILT FENCE
LIMIT OF FENCE REMOVAL
OPSD 219.130 HEAVY DUTY, SILT FENCE BARRIER
EXISTING 500mmø CSP TO BE REMOVED AND REPLACED
112 200 MUD MAT
20.0m
10.0m
5.0m
GRAVEL
GRAVEL TRACK
EXISTING SEPTIC AREA
2 STOREY VINYL AND FRAME DWELLING
OVERHANG
GARAGE FRAME
20.0m
10.0m
10.0m
STREET SIDE
SITE SIDE
5.0m
300mm DEPTH 50mm DIAMETER CLEARSTONE
300mm DEPTH 150mm DIAMETER CLEARSTONE
NOTE 1. TO BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED DURING CONSTRUCTION, REMOVE AT COMPLETION OF GRANULAR 'A' PLACEMENT.
2. PAD SHALL BE 300mm THICK, UNDERLAIN WITH TERRAFIX 270R GEOTEXTILE. PAD SHALL CONSIST OF 50mm DIA. CLEAR STONE FOR FIRST 10m FROM STREET. REMAINDER OF LENGTH TO CONSIST OF 150mm DIA. CLEAR STONE.
3. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
112 DETAIL – MUD MAT
SCALE = N.T.S.
E.R. ST. PIERRE
100500092
July 19, 2024
PROVINCE OF ONTARIO
WILLS
D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com
Project Name/Location
THOMAS SELF-STORAGE FACILITY
9351 COUNTY ROAD 30, TOWNSHIP OF HAVELOCK-BELMONT-METHUEN
Drawing Title
EROSION AND SEDIMENT CONTROL PLAN AND REMOVALS PLAN
Drawn By: CM
SCALE: Horz. 1:500 Vert. N/A
Designed By: CM
Issue Date: July 22, 2024
Checked By: JDF
Project No.: 23-85312
Sht. No.: 200
Engineer: ESP
Dwg File No.: 85312-ESC-R
NOT FOR CONSTRUCTION
Previous Council Report



SITE STATISTICS			
ADDRESS:	9351 COUNTY ROAD 30, HAVELOCK–BELMONT–MENTHUEN		
ZONING:	LOCAL COMMERCIAL C1		
TOTAL LOT AREA:	20042.3m² (2.0ha)		
REGULATIONS	EXISTING	REQUIRED	PROPOSED
MAX. NUMBER OF DWELLING UNITS PER BUILDING	1	1	N/A
MAX. NUMBER OF STOREYS	2	3	N/A
MIN. LOT AREA (m²)	20042.3	2787.0	20042.3
MIN. LOT FRONTAGE (m)	61.0	75.6	75.6
MAX. LOT COVERAGE (%) TOTAL	1.3%	40%	14.5%
MAX. NUMBER OF BUILDINGS	0	N/A	9
MAX. HEIGHT (m)	–	9.0	TBD
BUILDING SETBACKS			
FRONT LOT LINE (m)	7.4	15.0	7.4
SIDE LOT LINE (m)	18.8	6.0	18.8
REAR LOT LINE (m)	239.8	7.5	30.3

BM1 – 210.63
COSINE BENCH MARK
00819668561 (CGVD28:78)

TRUE NORTH

KEY PLAN

REVISIONS

No.	Description	Date
1	SUBMITTED TO TOWNSHIP – 1ST SPA SUBMISSION	19/07/24

METRIC Dimensions are in METRES and/or MILLIMETRES unless otherwise shown

LEGEND TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

PROPOSED HEAVY DUTY ASPHALT
PROPOSED GRAVEL/RIP-RAP
EX./PR. BUILDING
EX./PR. EDGE OF PAVEMENT
EX./PR. CURB
EX./PR. ROAD CENTERLINE
EX./PR. EDGE OF SHOULDER/GRAVEL
EX./PR. FIRE HYDRANT
EX./PR. WATER VALVE
EXISTING LIGHT STANDARD
EXISTING HYDRO POLE
EXISTING BELL POLE
EXISTING POLE ANCHOR
EX. BELL/CABLE PEDESTAL
EXISTING GASMAIN
EX. OVERHEAD BELL
EX. UNDERGROUND BELL
EX. OVERHEAD HYDRO
EX. UNDERGROUND HYDRO
EX. UNDERGROUND CABLE
EX. HYDRO MH
EX. BELL MH
EX. GAS VALVE
EX./PR. CULVERT
EX./PR. DITCH
EX./PR. STORM SEWER
EX./PR. SANITARY SEWER
EX./PR. FENCE
R.O.W
PROPERTY LINE
EXISTING VEGETATION
EX./PR. SIGN
TURF REINFORCEMENT MAT
SWM FACILITY OUTLET WEIR

LICENSED PROFESSIONAL ENGINEER
E.R. ST. PIERRE
100500092
July 19, 2024
PROVINCE OF ONTARIO

WILLS

D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9

P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

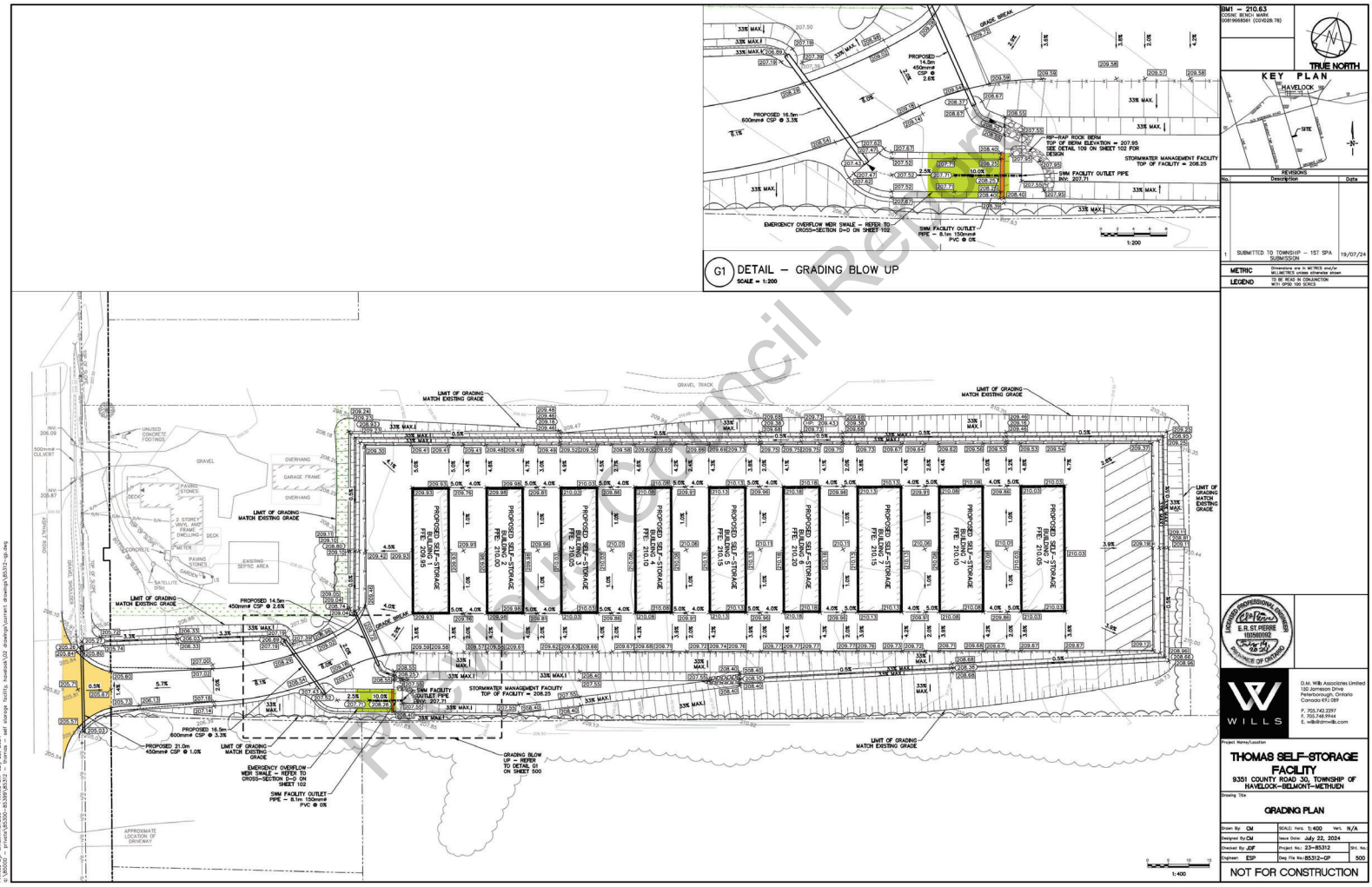
THOMAS SELF-STORAGE FACILITY
9351 COUNTY ROAD 30, TOWNSHIP OF HAVELOCK–BELMONT–METHUEN

Drawing Title

SITE PLAN

Drawn By: CM	SCALE: Horz. 1:500 Vert. N/A		
Designed By: CM	Issue Date: July 22, 2024		
Checked By: JDF	Project No.: 23–85312	Sht. No.:	
Engineer: ESP	Dwg File No.: 85312–SP	400	

NOT FOR CONSTRUCTION



WILLS

PARTNERS IN ENGINEERING, PLANNING & ENVIRONMENTAL SERVICES

April 22, 2024

Kirk Thomas
9351 County Road 30
Havelock-Belmont-Methuen, Ontario
K0L 1Z0

Attention: Kirk Thomas

Re: Site Entrance Assessment
Self Storage Facility
9351 County Road 30, Havelock-Belmont-Methuen
D.M. Wills Project No. 23-85312

D.M. Wills Associates Limited (Wills) is pleased to submit the following Site Entrance Assessment Brief to support a proposed self-storage facility (Development) on the lands known municipally as 9351 County Road 30 (Subject Property), Township Havelock-Belmont-Methuen (Township) in the County of Peterborough (County).

1.0 Roadway Existing Conditions

The Subject Property is located on the east side of County Road (CR) 30. The surrounding area is a mix of rural residential homes, agriculture lands, undeveloped lands, and some commercial uses as shown in **Appendix A**. The Subject Property is currently serviced by two unpaved driveways on CR 30.

This section of CR 30 is a two-way two-lane roadway segment with broken yellow centerline marking with a typical rural cross section with ditches and unpaved shoulders. The alignment of this section of CR 30 at the Subject Property is straight and relatively flat with no horizontal or vertical curves in the vicinity. The posted speed limit in this section is 80 km/hr.

2.0 Existing and Planned Site Conditions

Currently, the Subject Property has only one single detached house with an auxiliary building (garage) that is accessed using an existing driveway on the north side of the frontage. Nine self-storage buildings are proposed on the Subject Property with a total Gross Floor Area (GFA) of 2,634 m^2 (approximately 28,352 ft^2) and an outdoor storage area of 1142 m^2 (approximately 12,292 ft^2). This storage facility will be accessed by CR 30 through an existing driveway on the south portion of the frontage.

3.0 Existing and Future Traffic Conditions

Based on the traffic counts acquired from the County on CR 30 during different seasons, as shown in **Appendix B**, (i.e., spring, summer, and fall), the highest traffic volumes occurred during the summer season on July 6th, 2021. The peak hour is between 12:00 p.m. and 1:00 p.m. The traffic volumes during the peak hour are 159 vehicles per hour (vph) and 122 vph for the northbound and the southbound directions, respectively. Since these traffic counts were conducted during or close to COVID19 pandemic restrictions, an adjustment factor of 10% was applied to the traffic volumes. After the adjustment, the traffic volumes are 175 vph and 134 vph for the northbound and the southbound directions, respectively. Assuming an annual growth traffic factor of 2%, the traffic volumes in the horizon year of 2033 are 222 vph and 170 vph for northbound and the southbound directions, respectively.

The estimation of trips generated by the proposed development was derived from the Trip Generation Manual, 11th Edition[1], published by the Institute of Transportation Engineers (ITE). The ITE code of the land use, which closely describes a self-storage facility, and the corresponding trip generation rates are shown in **Table 1**. Also, the table shows the average trip generation rates of the generator (i.e., self-storage facility) for this land use for both the a.m. and the p.m. peaks and the percentages of entering and exiting. As a conservative assumption, the outdoor storage area is added to the self-storage building GFA in the calculations.

Table 1 – Trip Generation Rates of Generator during a.m. and p.m. Peak Hours

Land Use	ITE Code	a.m. Peak			p.m. Peak		
		Avg. Rate	Entering	Exiting	Avg. Rate	Entering	Exiting
Mini Warehouse	**151**	0.18	51%	49%	0.18	51%	49%

[1] Trip Generation Manual, Vol. 1, 2, and 3, 11th ed. ITE, Washington, D.C., 2021.

Table 2 – The Estimated Entering and Exiting Trips during a.m. and p.m. Peak Hours

Land Use	GFA (1000 ft²)	a.m. Peak			p.m. Peak		
		Avg. Rate	Entering	Exiting	Avg. Rate	Entering	Exiting
Self-Storage Facility	40.64	7	4	4	7	4	4

*Numbers may not add up due to rounding

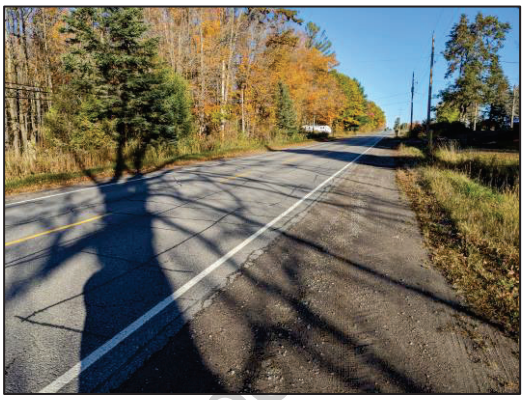
As shown in **Table 2**, the maximum number of trips to be generated is seven vph during the a.m. or p.m. peak hours including both entering and exiting trips. These seven trips are minimal and form about 3% and 4% of the anticipated northbound and southbound volumes in 2033, respectively. Accordingly, the trips generated will not have any impact on the adjacent CR 30 section and will not require any auxiliary lanes including both right and left turning lanes.

4.0 Visibility Requirements Assessment

A site visit was conducted on Thursday, October 23, 2023, to check the sight lines at the existing entrances of the Subject Property. Based on the sight line review, the available sight distance exceeds 180 m at both existing entrances, which is the required visibility distance for 80 km/hr speed limit roads according to County by-law no. 2012-26 in the visibility requirement section. The measurement of the sight lines assumed an observer's eye at 1.1 m above the shoulder of CR 18 and an object height of 1.3 m above the centreline of the on-coming lane as indicated in the County's by-law. **Figure 1** shows pictures taken in both directions at the existing south entrance of the storage facility on CR 30. The figure is for illustration purposes and not necessarily taken at the heights mentioned above.

Figure 1 - Existing South Entrance of the Development on CR 30

Looking South on CR 30



Looking North on CR 30

5.0 Conclusions and Recommendations

This brief reviewed the visibility requirements at the existing entrance of the proposed development, which is located on Peterborough CR 30. This brief assessed the trips that are anticipated to be generated from the property assuming a worst-case scenario for the trip generation. The results indicated significantly low volume (a total of seven trips during the a.m. and p.m. peak hours) of traffic is anticipated which will have no impact on the traffic operation of CR 30.

To review the visibility requirements, a field visit was conducted to collect the necessary measurements as indicated before in this brief. Based on the measurements taken in the field and County by-law no. 2012-26, the visibility requirements on CR 30 at the existing entrances of the Subject Property are satisfied based on a speed limit of 80 km/hr.

Although the low traffic volumes from the proposed development, both the existing north and south entrances are needed for the following reasons:

- The existing north entrance will be used exclusively by the existing dwelling unit.
- The existing north entrance is too narrow (about 3.14 m) to accommodate two-way traffic for the self-storage facility that will require a wider driveway. However, the existing north entrance is suitable for its existing use to accommodate passenger cars for the existing dwelling. Also, the north entrance is needed for fire truck access to the house since the only two options available for

truck access from the south entrance to the house are constrained as shown in **Appendix C:**

- The first option is that the fire truck goes from the south entrance and turn immediately left to access the west side of the house. Due to physical constraints in the front yard of the property, including steep grades, mature trees and the location of existing deck to enter the dwelling, the closest point the truck can reach is about 19.1 m from the house's entrance, more than the required 15 m, as shown in the appendix.
- The second option is that the fire truck will turn left and access the existing gravel area from the east side of the house. Due to the existing septic area and its 5 m setbacks required by the building code[2] to protect the system, the fire truck will not be able to access the house from this side without encroaching into the 5 m setback from the septic area, as shown in the appendix, which may cause damage to the septic elements.

- The existing turning radius of the north entrance, in addition to the location of the existing structures on the Subject Property will not accommodate typically longer recreational trailers (i.e., RV's, boat trailers, etc.) intended to be stored in the proposed outdoor storage area, as shown in **Appendix C**.
- There will be no road connection between the house and the storage facility in order to protect the existing septic system from any potential damage that may be caused by the site traffic.

Sincerely,

Mostafa Tawfeek

Mostafa Tawfeek Mohammed, Ph.D., P.Eng., PTOE, RSP1
Senior Traffic Engineer

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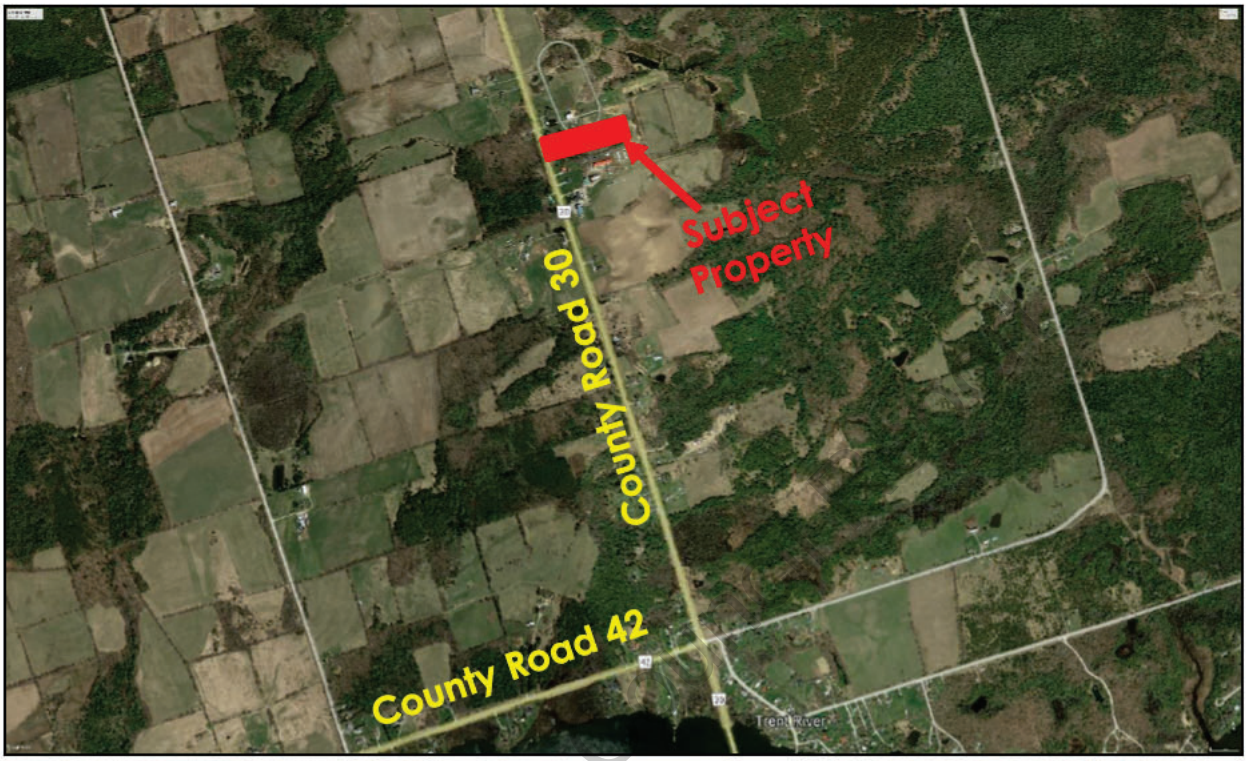
[2] The Ontario Building Code | Clearances for a Class 4 or 5 Sewage System

Appendix A

Location Plan

Figure – Location Plan



Not to scale. Approximate location for illustration purposes only

Appendix B

Traffic Data

Basic Volume Report: 030-00940

Station ID : 030-00940
Info Line 1 : CR-30, South Limits of Haveloc
Info Line 2 : k-to-Trent River Bridge
GPS Lat/Lon :
DB File : DBFILE 060921 - 2.DB

Last Connected Device Type : Unicorn
Version Number : 4.31
Serial Number : 24130

Number of Lanes : 2
Posted Speed Limit : 0.0 kph

Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.	N	NB	Normal	Veh.	No	

Lane #1 Basic Volume Data From: 00:00 - 06/07/2021 To: 23:59 - 06/07/2021

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
060721	M	3	4	1	5	9	40	42	58	83	86	103	111	96	110	112	134	125	114	68	58	32	17	9	7	1427
Month Total :		3	4	1	5	9	40	42	58	83	86	103	111	96	110	112	134	125	114	68	58	32	17	9	7	1427
Percent :		0%	0%	0%	0%	1%	3%	3%	4%	6%	6%	7%	8%	7%	8%	8%	9%	9%	8%	5%	4%	2%	1%	1%	0%	
ADT :		3	4	1	5	9	40	42	58	83	86	103	111	96	110	112	134	125	114	68	58	32	17	9	7	1427

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
DW Totals :	0	1427	0	0	0	0	0
# Days :	0.0	1.0	0.0	0.0	0.0	0.0	0.0
ADT :	0	1427	0	0	0	0	0
Percent :	0%	100%	0%	0%	0%	0%	0%

	Total	Percent
Weekday (Mon-Fri) :	1427	100%
ADT :	1427	
Weekend (Sat-Sun) :	0	0%
ADT :	0	

Lane #2 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
2.	S	SB	Normal	Veh.	No	

Lane #2 Basic Volume Data From: 00:00 - 06/07/2021 To: 23:59 - 06/07/2021

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
060721	M	3	2	1	0	8	36	73	108	105	82	94	106	113	117	111	110	124	113	54	51	31	22	10	11	1485
Month Total :		3	2	1	0	8	36	73	108	105	82	94	106	113	117	111	110	124	113	54	51	31	22	10	11	1485
Percent :		0%	0%	0%	0%	1%	2%	5%	7%	7%	6%	6%	7%	8%	8%	7%	7%	8%	8%	4%	3%	2%	1%	1%	1%	
ADT :		3	2	1	0	8	36	73	108	105	82	94	106	113	117	111	110	124	113	54	51	31	22	10	11	1485

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
DW Totals :	0	1485	0	0	0	0	0
# Days :	0.0	1.0	0.0	0.0	0.0	0.0	0.0
ADT :	0	1485	0	0	0	0	0
Percent :	0%	100%	0%	0%	0%	0%	0%

	Total	Percent
Weekday (Mon-Fri) :	1485	100%
ADT :	1485	
Weekend (Sat-Sun) :	0	0%
ADT :	0	

Basic Volume Summary: 030-00940

Grand Total For Data From: 00:00 - 06/07/2021 To: 23:59 - 06/07/2021

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	3	4	1	5	9	40	42	58	83	86	103	111	96	110	112	134	125	114	68	58	32	17	9	7	1427
Lane #2	3	2	1	0	8	36	73	108	105	82	94	106	113	117	111	110	124	113	54	51	31	22	10	11	1485
TOTAL	6	6	2	5	17	76	115	166	188	168	197	217	209	227	223	244	249	227	122	109	63	39	19	18	2912

Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Lane #1	0%	0%	0%	0%	1%	3%	3%	4%	6%	6%	7%	8%	7%	8%	8%	9%	9%	8%	5%	4%	2%	1%	1%	0%
Lane #2	0%	0%	0%	0%	1%	2%	5%	7%	7%	6%	6%	7%	8%	8%	7%	7%	8%	8%	4%	3%	2%	1%	1%	1%
TOTAL	0%	0%	0%	0%	1%	3%	4%	6%	6%	6%	7%	7%	7%	8%	8%	8%	9%	8%	4%	4%	2%	1%	1%	1%

ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	3	4	1	5	9	40	42	58	83	86	103	111	96	110	112	134	125	114	68	58	32	17	9	7	1427
Lane #2	3	2	1	0	8	36	73	108	105	82	94	106	113	117	111	110	124	113	54	51	31	22	10	11	1485
TOTAL	6	6	2	5	17	76	115	166	188	168	197	217	209	227	223	244	249	227	122	109	63	39	19	18	2912

LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	1427	0	0	0	0	0	Weekday (Mon-Fri) :	1427	100%
# Days :	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ADT :	1427	
ADT :	0	1427	0	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	100%	0%	0%	0%	0%	0%	ADT :	0	

LANE #2

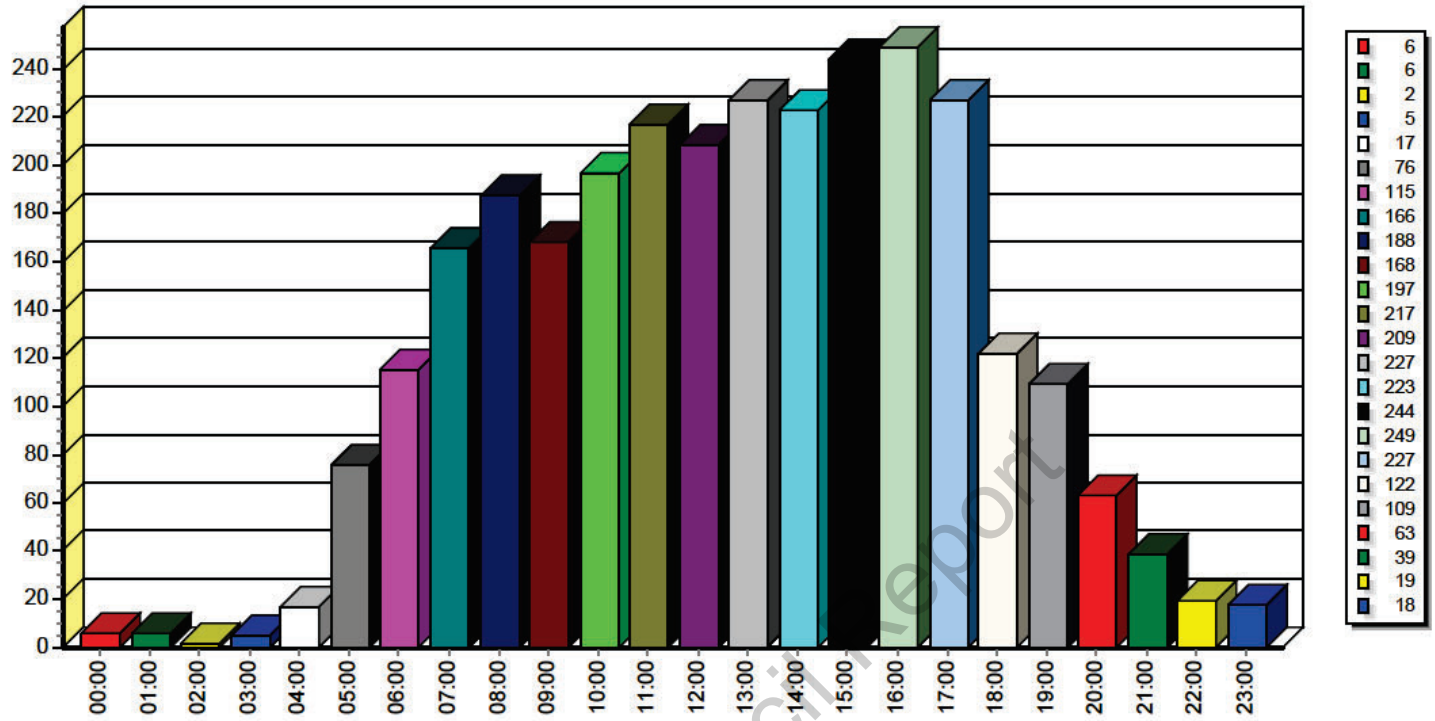
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	1485	0	0	0	0	0	Weekday (Mon-Fri) :	1485	100%
# Days :	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ADT :	1485	
ADT :	0	1485	0	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	100%	0%	0%	0%	0%	0%	ADT :	0	

ALL LANES

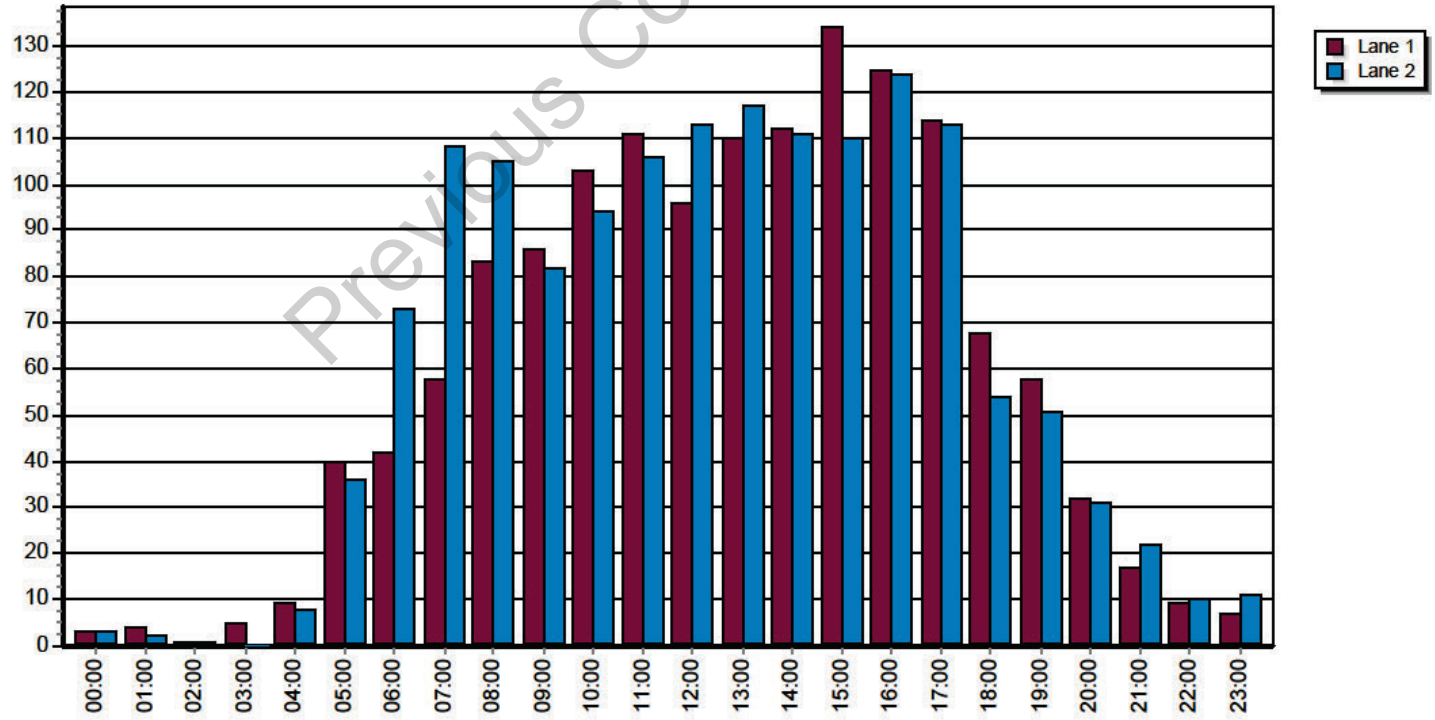
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	2912	0	0	0	0	0	Weekday (Mon-Fri) :	2912	100%
# Days :	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ADT :	2912	
ADT :	0	2912	0	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	100%	0%	0%	0%	0%	0%	ADT :	0	

030-00940 Charts For Data From: 00:00 - 06/07/2021 To: 23:59 - 06/07/2021

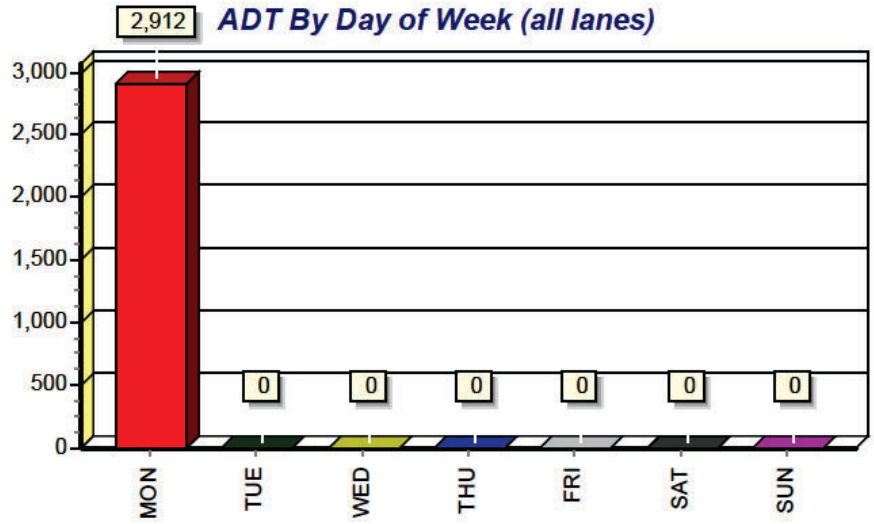
ADT Volume vs. Time (all lanes combined)



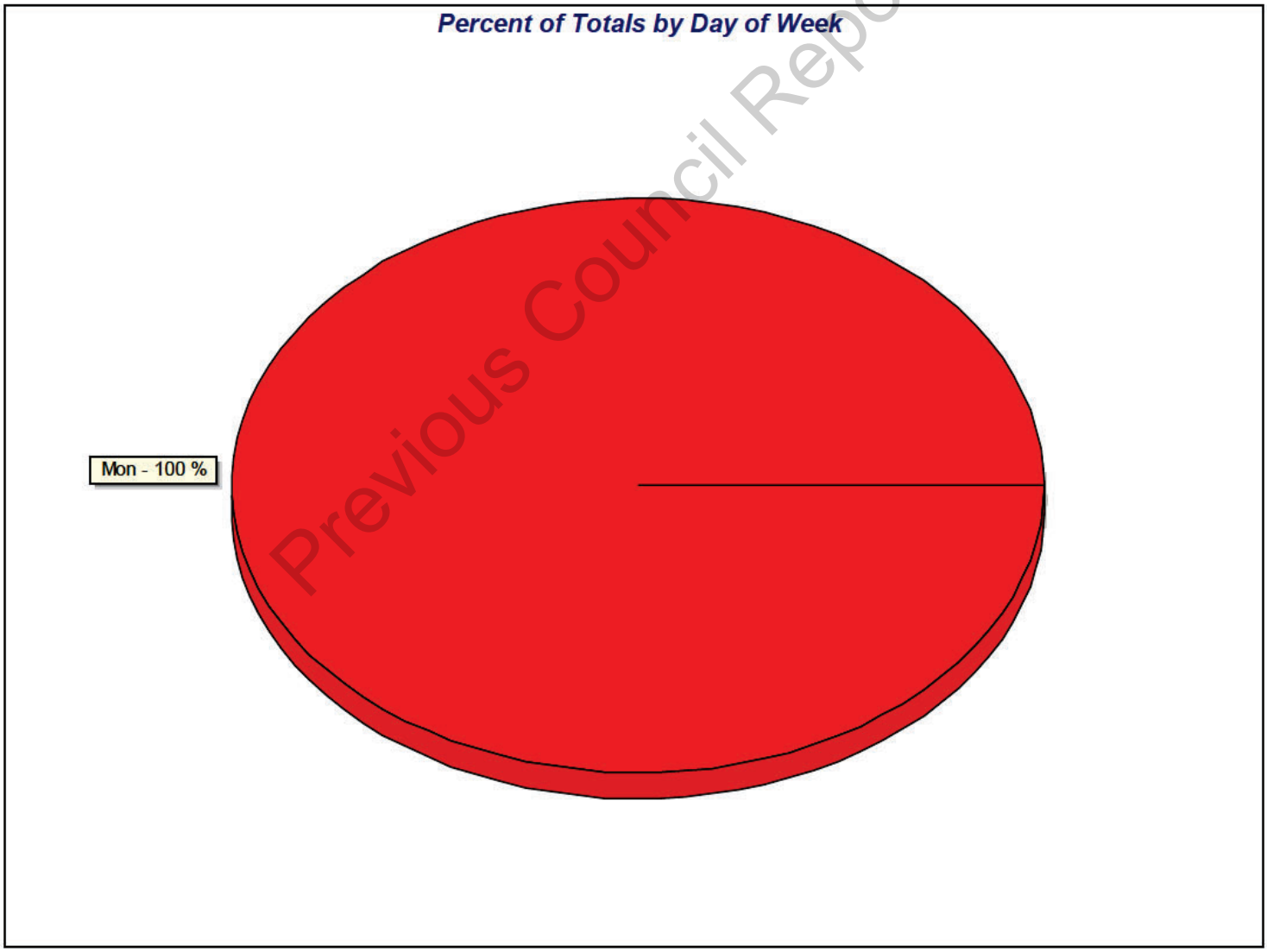
ADT Volume vs. Time (lane comparison)



030-00940 Charts For Data From: 00:00 - 06/07/2021 To: 23:59 - 06/07/2021



DAY	ADT	TOTAL	# DAYS
Mon	2912	2912	1.0
Tue	-	-	-
Wed	-	-	-
Thu	-	-	-
Fri	-	-	-
Sat	-	-	-
Sun	-	-	-



Basic Volume Report: 030-00940

Station ID : 030-00940
Info Line 1 : CR-30, South Limits of Haveloc
Info Line 2 : k-to-Trent River Bridge
GPS Lat/Lon :
DB File : DBFILE 070821 - 13.DB

Last Connected Device Type : Unicorn
Version Number : 2.94
Serial Number : 53184

Number of Lanes : 2
Posted Speed Limit : 0.0 kph

Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.	N	NB	Normal	Veh.	No	

Lane #1 Basic Volume Data From: 00:00 - 07/06/2021 To: 23:59 - 07/06/2021

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
070621	T	8	5	5	3	11	42	57	77	102	90	129	139	159	141	138	141	128	118	82	62	43	32	13	5	1730
Month Total :		8	5	5	3	11	42	57	77	102	90	129	139	159	141	138	141	128	118	82	62	43	32	13	5	1730
Percent :		0%	0%	0%	0%	1%	2%	3%	4%	6%	5%	7%	8%	9%	8%	8%	8%	7%	7%	5%	4%	2%	2%	1%	0%	
ADT :		8	5	5	3	11	42	57	77	102	90	129	139	159	141	138	141	128	118	82	62	43	32	13	5	1730

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
DW Totals :	0	0	1730	0	0	0	0
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0
ADT :	0	0	1730	0	0	0	0
Percent :	0%	0%	100%	0%	0%	0%	0%

	Total	Percent
Weekday (Mon-Fri) :	1730	100%
ADT :	1730	
Weekend (Sat-Sun) :	0	0%
ADT :	0	

Lane #2 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
2.	S	SB	Normal	Veh.	No	

Lane #2 Basic Volume Data From: 00:00 - 07/06/2021 To: 23:59 - 07/06/2021

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
070621	T	7	0	1	3	1	34	83	106	101	127	123	141	122	138	110	124	114	129	67	48	51	27	22	12	1691
Month Total :		7	0	1	3	1	34	83	106	101	127	123	141	122	138	110	124	114	129	67	48	51	27	22	12	1691
Percent :		0%	0%	0%	0%	0%	2%	5%	6%	6%	8%	7%	8%	7%	8%	7%	7%	7%	8%	4%	3%	3%	2%	1%	1%	
ADT :		7	0	1	3	1	34	83	106	101	127	123	141	122	138	110	124	114	129	67	48	51	27	22	12	1691

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
DW Totals :	0	0	1691	0	0	0	0
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0
ADT :	0	0	1691	0	0	0	0
Percent :	0%	0%	100%	0%	0%	0%	0%

	Total	Percent
Weekday (Mon-Fri) :	1691	100%
ADT :	1691	
Weekend (Sat-Sun) :	0	0%
ADT :	0	

Basic Volume Summary: 030-00940

Grand Total For Data From: 00:00 - 07/06/2021 To: 23:59 - 07/06/2021

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	8	5	5	3	11	42	57	77	102	90	129	139	159	141	138	141	128	118	82	62	43	32	13	5	1730
Lane #2	7	0	1	3	1	34	83	106	101	127	123	141	122	138	110	124	114	129	67	48	51	27	22	12	1691
TOTAL	15	5	6	6	12	76	140	183	203	217	252	280	281	279	248	265	242	247	149	110	94	59	35	17	3421

Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Lane #1	0%	0%	0%	0%	1%	2%	3%	4%	6%	5%	7%	8%	9%	8%	8%	8%	7%	7%	5%	4%	2%	2%	1%	0%
Lane #2	0%	0%	0%	0%	0%	2%	5%	6%	6%	8%	7%	8%	7%	8%	7%	7%	7%	8%	4%	3%	3%	2%	1%	1%
TOTAL	0%	0%	0%	0%	0%	2%	4%	5%	6%	6%	7%	8%	8%	8%	7%	8%	7%	7%	4%	3%	3%	2%	1%	0%

ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	8	5	5	3	11	42	57	77	102	90	129	139	159	141	138	141	128	118	82	62	43	32	13	5	1730
Lane #2	7	0	1	3	1	34	83	106	101	127	123	141	122	138	110	124	114	129	67	48	51	27	22	12	1691
TOTAL	15	5	6	6	12	76	140	183	203	217	252	280	281	279	248	265	242	247	149	110	94	59	35	17	3421

LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	1730	0	0	0	0	Weekday (Mon-Fri) :	1730	100%
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0	ADT :	1730	
ADT :	0	0	1730	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	100%	0%	0%	0%	0%	ADT :	0	

LANE #2

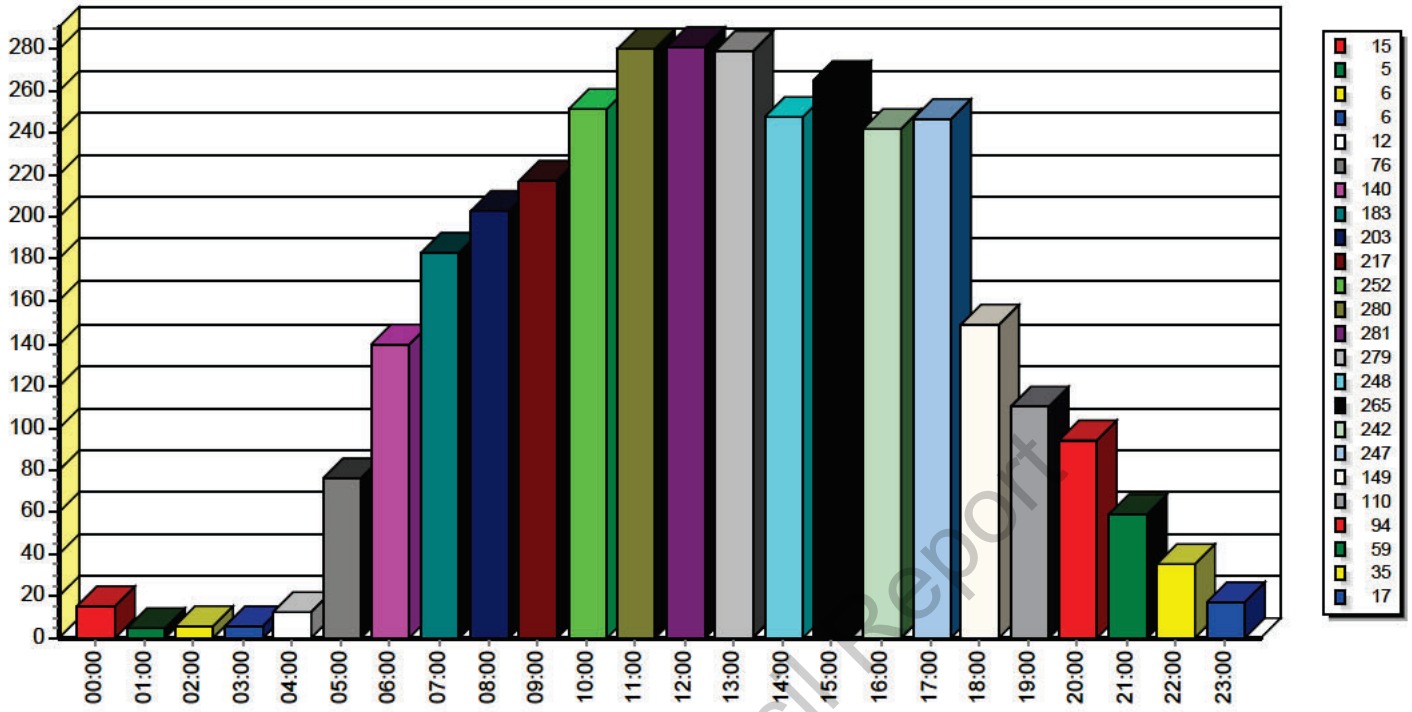
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	1691	0	0	0	0	Weekday (Mon-Fri) :	1691	100%
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0	ADT :	1691	
ADT :	0	0	1691	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	100%	0%	0%	0%	0%	ADT :	0	

ALL LANES

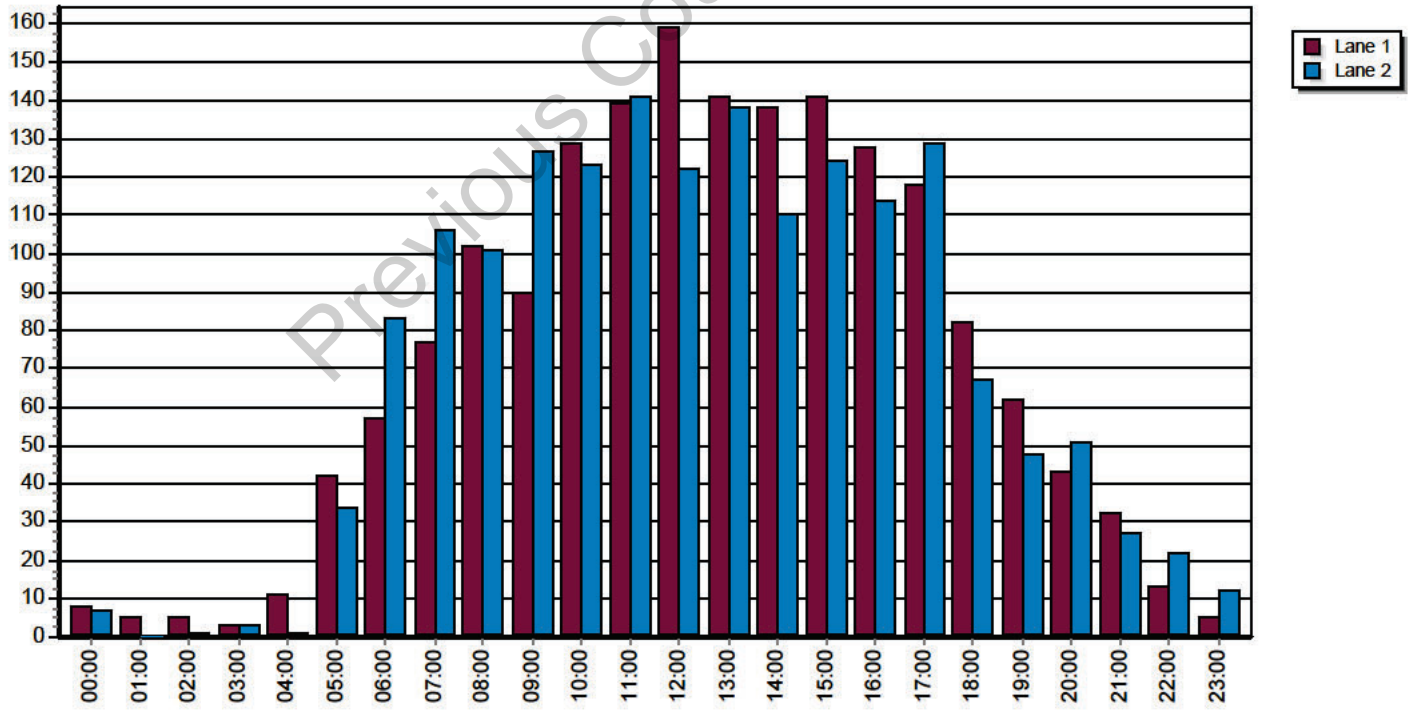
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	3421	0	0	0	0	Weekday (Mon-Fri) :	3421	100%
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0	ADT :	3421	
ADT :	0	0	3421	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	100%	0%	0%	0%	0%	ADT :	0	

030-00940 Charts For Data From: 00:00 - 07/06/2021 To: 23:59 - 07/06/2021

ADT Volume vs. Time (all lanes combined)

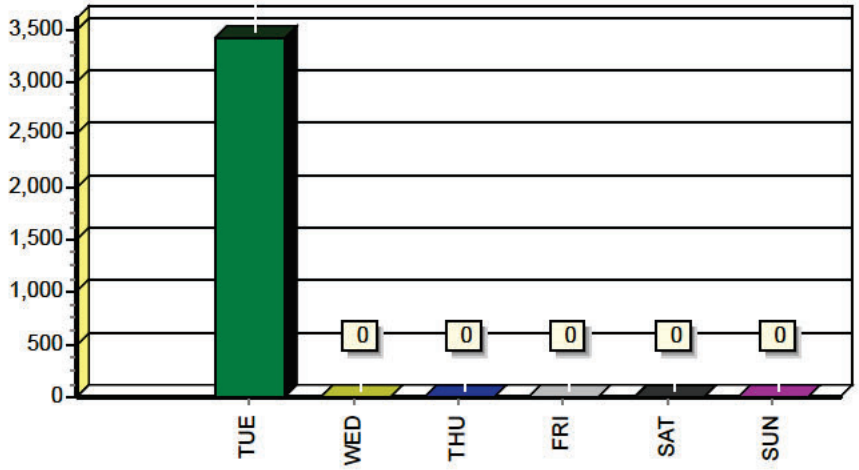


ADT Volume vs. Time (lane comparison)



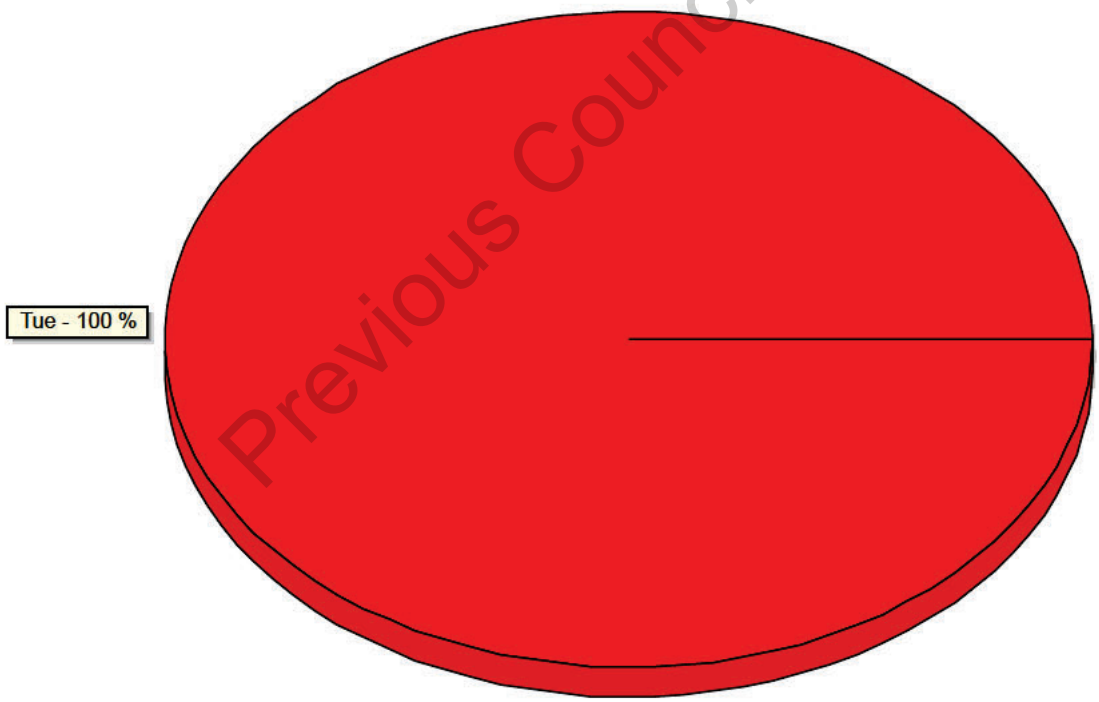
030-00940 Charts For Data From: 00:00 - 07/06/2021 To: 23:59 - 07/06/2021

Average by Day of Week (all lanes)



DAY	ADT	TOTAL	# DAYS
Mon	-	-	-
Tue	3421	3421	1.0
Wed	-	-	-
Thu	-	-	-
Fri	-	-	-
Sat	-	-	-
Sun	-	-	-

Percent of Totals by Day of Week



Basic Volume Report: 030-00940

Station ID : 030-00940
Info Line 1 : CR-30, South Limits of Haveloc
Info Line 2 : k-to-Trent River Bridge
GPS Lat/Lon :
DB File : DBFILE 091621 - 77.DB

Last Connected Device Type : Phoenix
Version Number : 3.00
Serial Number : 37176

Number of Lanes : 2
Posted Speed Limit : 0.0 kph

Lane #1 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
1.	N	NB	Normal	Veh.	No	

Lane #1 Basic Volume Data From: 00:00 - 09/14/2021 To: 23:59 - 09/14/2021

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
091421	T	5	6	2	2	12	43	42	85	84	87	99	112	118	115	119	157	161	154	75	47	25	19	18	7	1594
Month Total :		5	6	2	2	12	43	42	85	84	87	99	112	118	115	119	157	161	154	75	47	25	19	18	7	1594
Percent :		0%	0%	0%	0%	1%	3%	3%	5%	5%	5%	6%	7%	7%	7%	7%	10%	10%	10%	5%	3%	2%	1%	1%	0%	
ADT :		5	6	2	2	12	43	42	85	84	87	99	112	118	115	119	157	161	154	75	47	25	19	18	7	1594

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
DW Totals :	0	0	1594	0	0	0	0
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0
ADT :	0	0	1594	0	0	0	0
Percent :	0%	0%	100%	0%	0%	0%	0%

	Total	Percent
Weekday (Mon-Fri) :	1594	100%
ADT :	1594	
Weekend (Sat-Sun) :	0	0%
ADT :	0	

Lane #2 Configuration

#	Dir.	Information	Volume Mode	Volume Sensors	Divide By 2	Comment
2.	S	SB	Normal	Veh.	No	

Lane #2 Basic Volume Data From: 00:00 - 09/14/2021 To: 23:59 - 09/14/2021

Date	DW	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
091421	T	6	3	2	3	4	25	73	126	146	123	99	110	114	118	113	141	103	145	61	48	28	22	8	9	1630
Month Total :		6	3	2	3	4	25	73	126	146	123	99	110	114	118	113	141	103	145	61	48	28	22	8	9	1630
Percent :		0%	0%	0%	0%	0%	2%	4%	8%	9%	8%	6%	7%	7%	7%	7%	9%	6%	9%	4%	3%	2%	1%	0%	1%	
ADT :		6	3	2	3	4	25	73	126	146	123	99	110	114	118	113	141	103	145	61	48	28	22	8	9	1630

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
DW Totals :	0	0	1630	0	0	0	0
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0
ADT :	0	0	1630	0	0	0	0
Percent :	0%	0%	100%	0%	0%	0%	0%

	Total	Percent
Weekday (Mon-Fri) :	1630	100%
ADT :	1630	
Weekend (Sat-Sun) :	0	0%
ADT :	0	

Basic Volume Summary: 030-00940

Grand Total For Data From: 00:00 - 09/14/2021 To: 23:59 - 09/14/2021

Total Count	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	5	6	2	2	12	43	42	85	84	87	99	112	118	115	119	157	161	154	75	47	25	19	18	7	1594
Lane #2	6	3	2	3	4	25	73	126	146	123	99	110	114	118	113	141	103	145	61	48	28	22	8	9	1630
TOTAL	11	9	4	5	16	68	115	211	230	210	198	222	232	233	232	298	264	299	136	95	53	41	26	16	3224

Percents:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Lane #1	0%	0%	0%	0%	1%	3%	3%	5%	5%	5%	6%	7%	7%	7%	7%	10%	10%	10%	5%	3%	2%	1%	1%	0%
Lane #2	0%	0%	0%	0%	0%	2%	4%	8%	9%	8%	6%	7%	7%	7%	7%	9%	6%	9%	4%	3%	2%	1%	0%	1%
TOTAL	0%	0%	0%	0%	0%	2%	4%	7%	7%	7%	6%	7%	7%	7%	7%	9%	8%	9%	4%	3%	2%	1%	1%	0%

ADT:	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	Total
Lane #1	5	6	2	2	12	43	42	85	84	87	99	112	118	115	119	157	161	154	75	47	25	19	18	7	1594
Lane #2	6	3	2	3	4	25	73	126	146	123	99	110	114	118	113	141	103	145	61	48	28	22	8	9	1630
TOTAL	11	9	4	5	16	68	115	211	230	210	198	222	232	233	232	298	264	299	136	95	53	41	26	16	3224

LANE #1

	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	1594	0	0	0	0	Weekday (Mon-Fri) :	1594	100%
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0	ADT :	1594	
ADT :	0	0	1594	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	100%	0%	0%	0%	0%	ADT :	0	

LANE #2

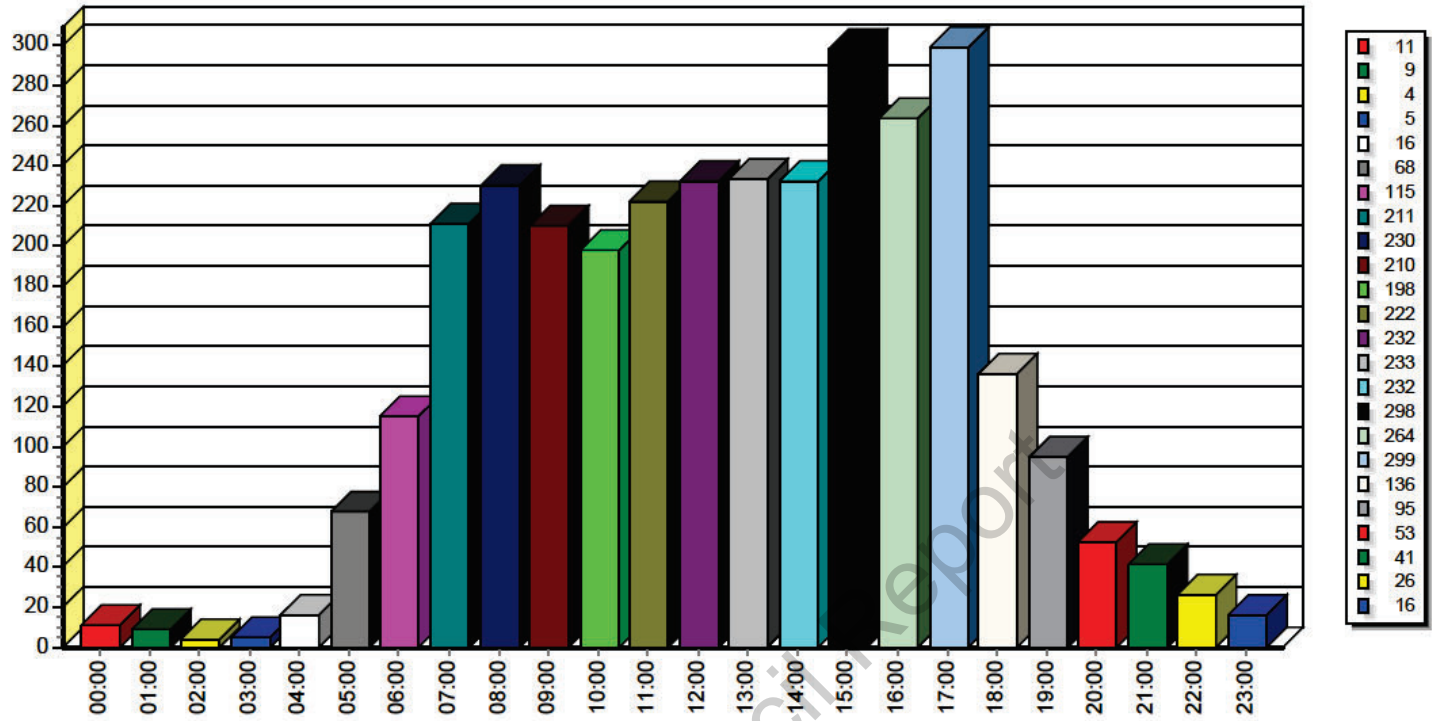
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	1630	0	0	0	0	Weekday (Mon-Fri) :	1630	100%
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0	ADT :	1630	
ADT :	0	0	1630	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	100%	0%	0%	0%	0%	ADT :	0	

ALL LANES

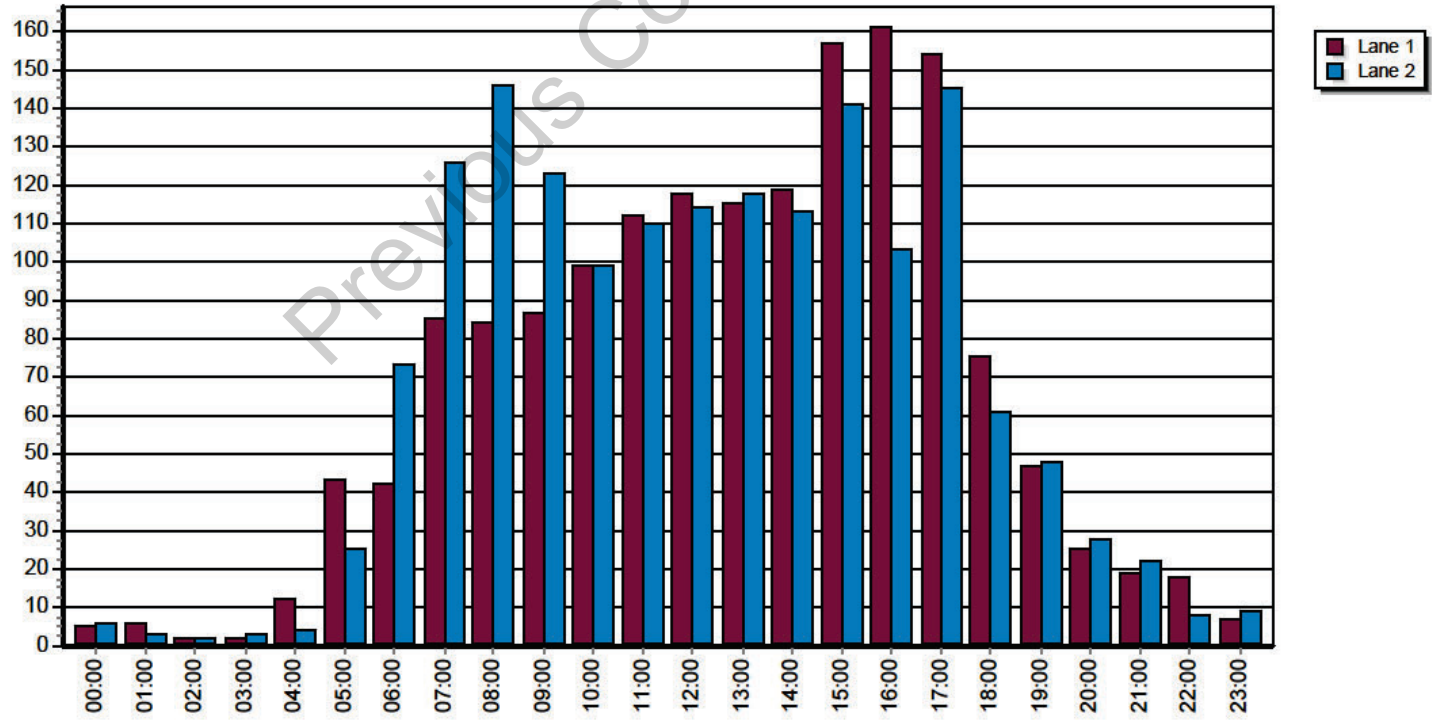
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Total	Percent
DW Totals :	0	0	3224	0	0	0	0	Weekday (Mon-Fri) :	3224	100%
# Days :	0.0	0.0	1.0	0.0	0.0	0.0	0.0	ADT :	3224	
ADT :	0	0	3224	0	0	0	0	Weekend (Sat-Sun) :	0	0%
Percent :	0%	0%	100%	0%	0%	0%	0%	ADT :	0	

030-00940 Charts For Data From: 00:00 - 09/14/2021 To: 23:59 - 09/14/2021

ADT Volume vs. Time (all lanes combined)

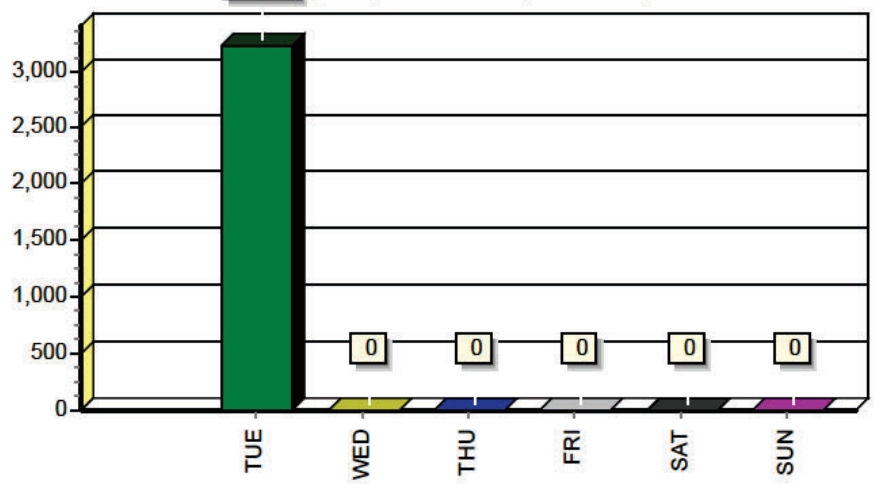


ADT Volume vs. Time (lane comparison)



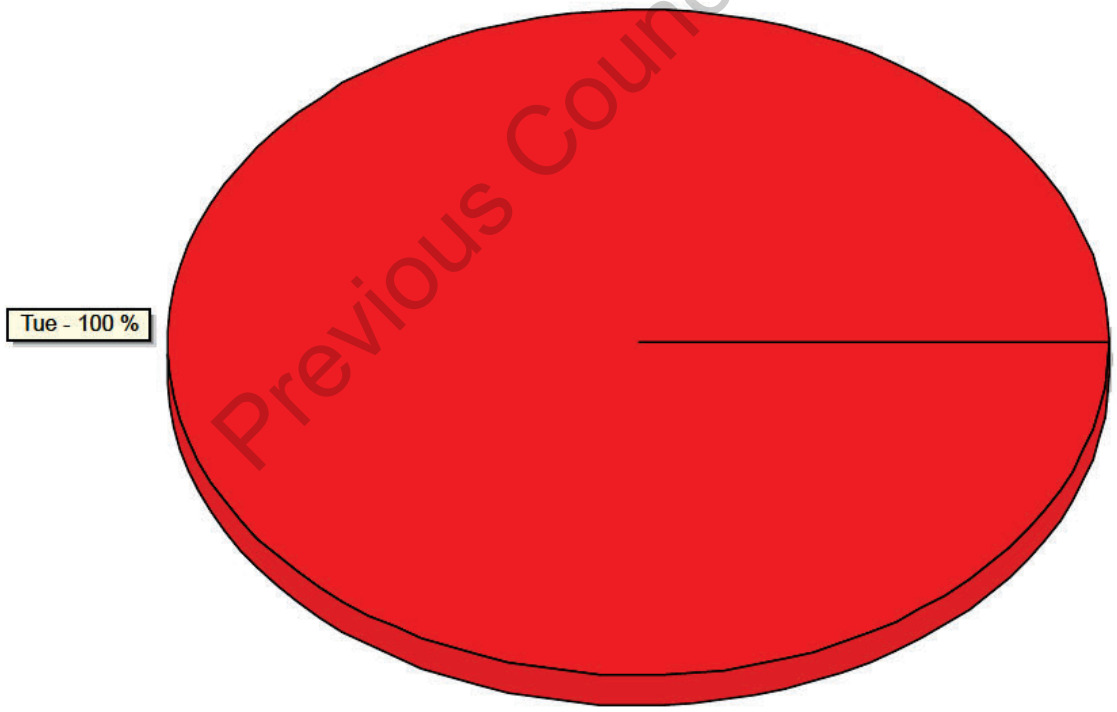
030-00940 Charts For Data From: 00:00 - 09/14/2021 To: 23:59 - 09/14/2021

Day of Week (all lanes)



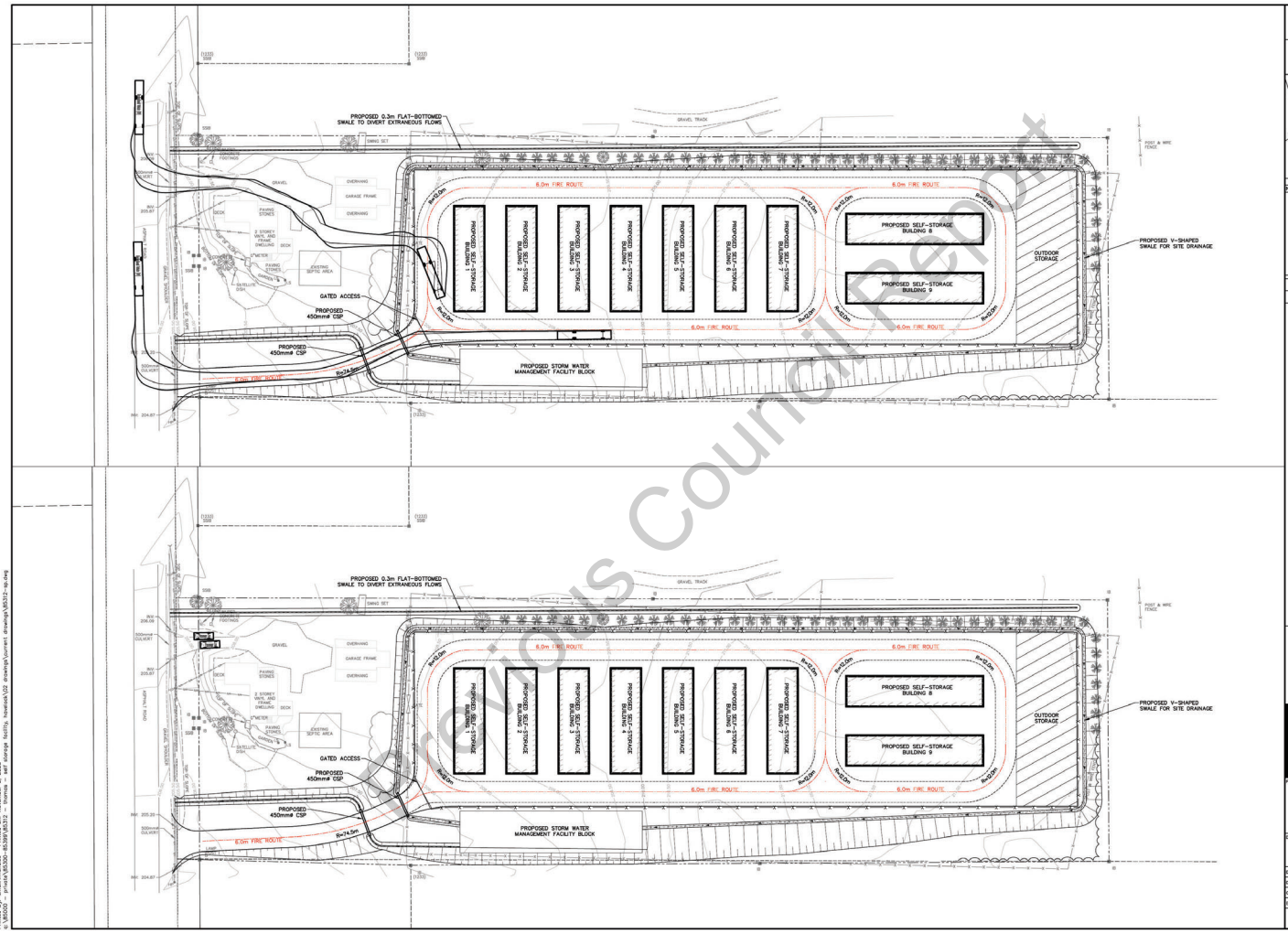
DAY	ADT	TOTAL	# DAYS
Mon	-	-	-
Tue	3224	3224	1.0
Wed	-	-	-
Thu	-	-	-
Fri	-	-	-
Sat	-	-	-
Sun	-	-	-

Percent of Totals by Day of Week



Appendix C

Vehicle Tracking Figure



TRUE NORTH

KEY PLAN

HAVELOCK

SITE

REVISIONS

No.	Description	Date

METRIC	Dimensions are in METRES and/or MILLIMETRES unless otherwise shown
LEGEND	TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES

WILLS

D.M. Wills Associates Limited
120 Johnson Drive
Peterborough, Ontario
Canada K9J 0B9

P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com

Project Name/Location

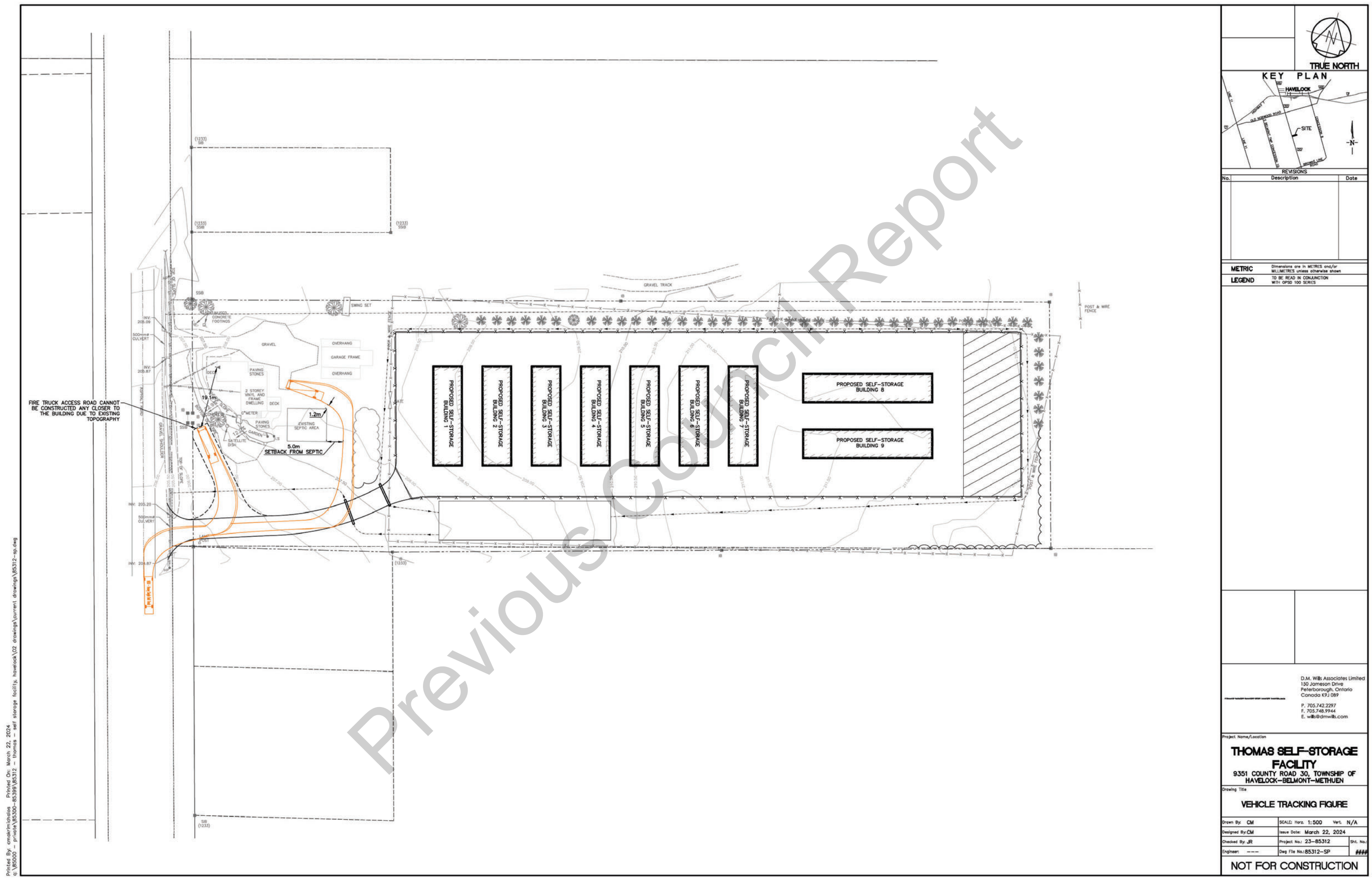
THOMAS SELF-STORAGE FACILITY
9351 COUNTY ROAD 30, TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

Drawing Title

VEHICLE TRACKING FIGURE

Drawn By: CM	SCALE: Horz. 1:500	Vert. N/A	
Designed: By CM	Issue Date: November 2, 2023		
Checked: By JR	Project No.: 23-85312	Dr. No.	
Engineer: ———	Dwg File No.:85312-SP	####	

NOT FOR CONSTRUCTION


TRUE NORTH
KEY PLAN
HAVELOCK
SITE
REVISIONS
No.
Description
Date
METRIC
Dimensions are in METRES and/or MILLIMETRES unless otherwise shown
LEGEND
TO BE READ IN CONJUNCTION WITH OPSD 100 SERIES
FIRE TRUCK ACCESS ROAD CANNOT BE CONSTRUCTED ANY CLOSER TO THE BUILDING DUE TO EXISTING TOPOGRAPHY
GRAVEL TRACK
POST & WIRE FENCE
GRAVEL
OVERHANG
GARAGE FRAME
OVERHANG
PAVING STONES
2 STOREY VINYL AND FRAME DWELLING
DECK
EXISTING SEPTIC AREA
10.1m
1.2m
5.0m
SETBACK FROM SEPTIC
PROPOSED SELF-STORAGE BUILDING 1
PROPOSED SELF-STORAGE BUILDING 2
PROPOSED SELF-STORAGE BUILDING 3
PROPOSED SELF-STORAGE BUILDING 4
PROPOSED SELF-STORAGE BUILDING 5
PROPOSED SELF-STORAGE BUILDING 6
PROPOSED SELF-STORAGE BUILDING 7
PROPOSED SELF-STORAGE BUILDING 8
PROPOSED SELF-STORAGE BUILDING 9
D.M. Wills Associates Limited
150 Jameson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.748.9944
E. wills@dmwills.com
Project Name/Location
THOMAS SELF-STORAGE FACILITY
9351 COUNTY ROAD 30, TOWNSHIP OF HAVELOCK-BELMONT-METHUEN
Drawing Title
VEHICLE TRACKING FIGURE
Drawn By: CM
SCALE: Horz. 1:500 Vert. N/A
Designed By: CM
Issue Date: March 22, 2024
Checked By: JR
Project No.: 23-85312
Sht. No.:
Engineer: ---
Dwg File No.: 85312-SP
####
NOT FOR CONSTRUCTION

WILLS

PARTNERS IN ENGINEERING, PLANNING & ENVIRONMENTAL SERVICES

August 27, 2024

Township of Havelock-Belmont-Methuen
1 Ottawa Street East, P.O. Box 10
Havelock, ON
K0L 1Z0

Re: Minor Variance Application
Thomas Self Storage Facility c/o. Thomas Kirk
9351 County Road 30, Havelock
D.M. Wills Associates Project No. 22-85312

D.M. Wills Associates Limited (Wills) is pleased to submit a Minor Variance application on behalf of Kirk Thomas (Owner) for lands described legally as Part Lot 3, Concession 9 (Subject Property), and known municipally as 9351 County Road 30 in the Township of Havelock-Belmont-Methuen (Township), in the County of Peterborough (County).

The purpose of this cover letter is to provide a summary of the proposed minor variance in the context of provincial and municipal policy as it applies to the four tests under Section 45(1) of the Planning Act and Section 5.16 of the Township of Havelock-Belmont-Methuen (TOP). The application seeks relief from the Township of Havelock-Belmont-Methuen Comprehensive Zoning By-law No. 1995-42 to reduce the number of required parking spaces for the proposed self-storage commercial use.

1.0 Subject Property and Surrounding Land Uses

1.1 Subject Property

The Subject Property is described legally as, Part of lot 3, Concession 9, as in R684846, except expropriation plan DEP2740, in the Township of Havelock-Belmont-Methuen and known municipally as 9351 County Road 30. The approximate area of the Subject Property is 1.98 ha (19,750.27 m^2) with an approximate frontage of 75.5 m.

There is an existing residential dwelling with an accessory structure located in the northwestern portion of the Subject Property. The residential dwelling has an area of approximately 167.67 m^2, and the accessory building comprises an area of approximately 155 m^2.

1.2 Surrounding Land Uses

The Subject Property is located on the east side of County Road 30, south of the intersection of Old Norwood Road and County Road 30, and north of the Trent River. The lands immediately surrounding the Subject Property

are predominantly rural in nature with some natural features identified in the area. The Village of Havelock is located further north and consists of rural and urban land uses, including restaurants, a gas station, retail store and community facilities.

1.3 Proposed Development

The applicant is proposing to develop a Self-Storage Rental Facility which consists of nine buildings and an area for accessory outdoor storage. Three of the buildings will be approximately 10.8 m by 30.6 m, each with a total area of 330.5 m², and the other six will have dimensions of 9.0 m by 30.6 m, each with an area of 275.4 m². The Subject Property is currently accessed by two existing driveways from County Road 30. The most southerly driveway is proposed to provide access to the proposed Self Storage Rental Facility. The entrance on the north side of the Subject Property will continue to provide access into the existing residential dwelling.

Uses Permitted by this By-law, other than those listed in Section 4.27, require the following parking requirements:

> *"The greater of;*
>
> *a) 1 parking space per 2 employees or fraction thereof; or*
>
> *b) 1 parking space per 4 persons design capacity or fraction thereof; or*
>
> *c) 1 parking space per 37 square metres (400 square feet) of gross floor area"*

Therefore, under Section 4.27 Parking Area Regulations of the Township's ZBL, the proposed commercial self-storage use requires 72 parking spaces to accommodate the nine new storage units. There are two parking spaces included in the proposed concept; therefore, a minor variance is required from the parking provisions to reduce the required parking and accessible parking spaces from 72 spaces to two spaces.

2.0 Planning Review

Under Section 45(1) of the Planning Act R.S.O 1990 and the Township of Havelock (TOP) Section 5.16 there are four tests a minor variance must meet:

1. Is the application minor?
2. Is the application desirable for the appropriate development or use of the lands in question?
3. Does the application maintain the general intent and purpose of the Zoning By-law?
4. Does the application maintain the general intent and purpose of the Official Plan?

The following will serve as our professional planning assessment in accordance with the aforementioned tests:

The proposed development of the property intends to build nine self-storage facility units and an accessory outdoor storage area with two parking spaces. Currently the Subject property has a residential dwelling on the most north-eastern aspect of the property which will remain and be accessed from another driveway. The proposed building will meet all other C1 zoning requirements including building coverage, lot area, and lot setbacks; therefore, the proposal will not negatively impact the land and neighbouring properties. The proposed development is currently subject to a Site Plan Approval application which will ensure that the development complies with the municipal bylaws and policies, while adequately functioning for the intended use.

There are two existing driveways to access the Subject Property, one to service the residential dwelling and the other to provide access to the Self-Storage Facility. Wills conducted a Traffic Study that concluded the Subject Property requires two entrances onto the property due to the existing conditions, location of services and access for emergency services. The Self Storage Facility will be accessed by mainly by vehicular traffic due to the lack of public transit services and active transportation (i.e. trails/bicycle network) in the area, in addition to the nature of the facility proposed.

The Traffic Study examined the existing and future traffic conditions, which included the estimated entering and exiting trips during the A.M. and P.M. Peak Hours. For a self-storage facility, the maximum number of trips generated is seven vehicles per hour during the peak hours. The likelihood

of there being more than two vehicles at the storage facility who desire to use parking spots outside of the location at their unit is low.

Since the nature of the facility proposed is self-monitored, there is no requirement for employees to be located on the property during open and closed hours. The facility will be maintained solely by the owner resulting in limited parking requirements for employees.

Due to the low amount of traffic generated at one time and the proposed development meets all other zone requirements, it is our opinion that the **requested variance is minor.**

The property is currently vacant outside of the residential dwelling and is zoned local commercial land which has the potential to be developed for a permitted use.

The surrounding uses of the property consist primarily of rural, agricultural and other commercial uses, ultimately supporting this type of development. The nine units will be located behind the residential dwelling on the land when entering the property from County Road 30. Directly south of the property is land that is utilized as a commercial ATV dealer. The neighboring business has a warehouse for storage located directly south of where the storage units are proposed. Therefore, the proposed development will be consistent with the current landscape and usage of the area.

To the east and west of the Subject Property are primarily properties used for agricultural purposes or agricultural related purposes. The majority of the land is undeveloped due to its usage for farming purposes, however, the Subject Property itself was not being utilized in such a manner. With the majority of the land surrounding being used for farming and a lack of residential homes nearby, the proposed development will have no visual or physical impact on neighboring properties.

North of the Subject Property consists of predominantly land rural in nature, with some natural features identified in the area. There are considerable amounts of rural and agricultural land, however, approximately 2 km north is the Village of Havelock. Havelock's local inhabitants will be a significant contributor to the proposed use and will be able to utilize this small business close to home.

The proposed development is suggested to be utilized on a property that is zoned for this use, has other similar uses surrounding the property, and will not create any visible disruption to the surrounding properties. Therefore, in our professional opinion this property is **considered desirable for the appropriate development and use of the lands.**

The Subject Property is zoned Local Commercial (C1) as shown on Schedule A1 of the ZBL. The C1 permits a rental storage facility (13.1.1) and an accessory single detached dwelling which are only a small number of the many permitted uses for this zone. The proposed development, as stated before, meets all the requirements and setbacks outlined in the regulations under the local commercial zoning, except for the Parking Area regulations.

The ZBL does not outline a specific regulation for Self-Storage Facilities, however, there is a general provision that applies to all uses permitted by the ZBL other than those listed. Under the general provision, there are three options as to how to calculate the number of required parking spaces.

The greater of:

a. 1 parking space per 2 employees or fraction thereof; or
b. 1 parking space per 4 persons design capacity or fraction thereof or
c. 1 parking space per 37 square metres (400 square feet) of gross floor area

The calculation under parking ratios 'a' and 'b' do not apply as they are lower than the calculation under ratio 'c'. Therefore, the gross floor area of the regulation applies. The total gross floor area of the Self-Storage facility is approximately 2,642.4 m², resulting in the minimum number of parking spaces required to be 72.

The intent of the ZBL is to ensure that there is an adequate amount of parking spaces for the proposed use of the property whether it be for the use of the owner, occupant, or other persons entering upon or making use of the premises (4.27 (a)). As outlined in the traffic report, a maximum of seven vehicles will enter or exit the property during peak hours, resulting in the required number of parking spaces being overly abundant. Therefore, since the development meets the other requirements outlined in the ZBL, the owner is willing to incorporate two parking spaces which accommodates the demand. It is our opinion **that the proposed variance maintains the general intent of the ZBL.**

The Subject Property is designated 'Rural' on the TOP Schedule 'A1-Belmont', which rural lands are characterized by a rural landscape which reinforces the historical relationship between hamlet area, shoreline communities and the surrounding farm and rural community to which the hamlet area provide basic services (3.1.1). Rural land is meant to create a balance between the many types of residential, industrial and commercial uses and allow agricultural and natural heritage to flourish.

The permitted uses as outlined in the TOP, encourage small-scale commercial, industrial and outdoor recreational uses which provide for the needs of the rural population, tourists, and the travelling public. In this case, the small-scale commercial development will provide immediate assistance to the rural and local population, providing them with a storage space for their belongings. As outlined in Section 3.1.3.2 (d) of the TOP the intended use shall be appropriate for the proposed location and compatible with the surrounding land uses, encourage to locate in clusters, provide adequate parking, and be subject to site plan control.

Based on the foregoing, it is our opinion that the proposed variance to reduce the requirement of parking **maintains the intent and purpose of the TOP** due to the proposed development complying with the development policies surrounding commercial land use in the rural designation.

3.0 Conclusion

This letter has been prepared in support of the Minor Variance Application to reduce the number of required parking spaces for the proposed commercial Self-Storage Facility. This letter provides an analysis of the development in the context of the four tests of a minor variance and finds that the variances are considered minor, desirable for the appropriate development of the Subject Property and maintain the intent and purpose of the Official Plan and Zoning By-law. The proposed development will result in a significant improvement of the Subject Property, providing usage of the currently vacant land by a permitted use in the current zone. The site has been designed in a way to be compatible with the surrounding rural, rural residential, and commercial uses, maintaining the nature of the property.

Should you have any questions or require anything further, please do not hesitate to contact the undersigned.

Respectfully submitted,

Prepared by:

Kate Steele, B.Sc.,
Junior Land Use Planner

Reviewed By:

Marnie Saunders, B.E.S., CPT
Senior Land Use Planner

KS/jh

HAVELOCK BELMONT METHUEN

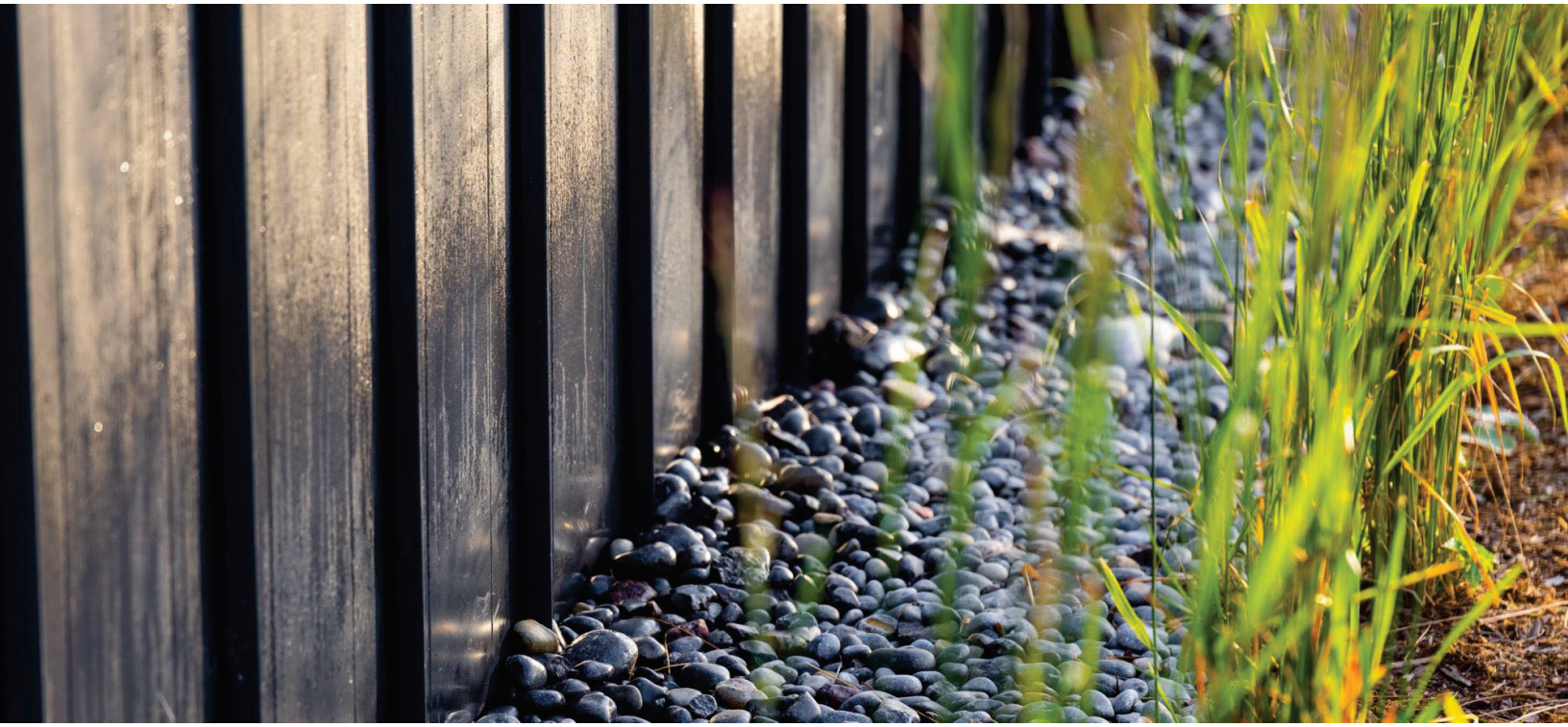
Community Centre

Construction Management RFP Synopsis

Agenda

- Review Construction Management Request for Proposal Process
- Outcome of Submissions
- Councils' Direction and Next Steps

Unity



Review Construction Management Request for Proposal Process

Unity

Community Centre

Review Construction Management Request for Proposal Process

On September 09th, 2024, the Request for Proposals for Construction Management Services of the Community Centre Renovations and Additions was issued by the Town through the Bids & Tenders website.

The proposal process allows for registered bidders to submit a proposal for this work, following the guidelines outlined in the document that was issued.

The outcome of this process is to onboard a Construction Manager for the duration of Phase 1, with their focus and expertise towards Project Budget Control, Construction Scheduling, Bidding and Procurement of subtrades, and oversight of Construction Project.

Unity

Community Centre

Review Construction Management Request for Proposal Process

As part of this proposal process, it was a requirement for Construction Managers to attend a mandatory site meeting to understand the project in further detail.

On September 17th, 2024, eight (8) potential proponents attended this meeting with Unity Design Studio and members of Town Staff.

Unity

Community Centre

Outcome of Submissions

On October 3rd, 2024, two (2) Construction Management proposals were submitted within the required time limit and with all required documents submitted.

These proposals were submitted by the following Construction Management companies:

- Mortlock Construction Inc., located in Cavan-Monaghan, ON
- Beavermead Construction Ltd., located in Peterborough, ON

Unity

Community Centre

Council’s Direction and Next Steps

The Community Centre Renovation and Addition project requires Council’s direction, through the Town’s Staff Report and Recommendations, to move forward into a CCDC-5B Construction Management Contract with the winning proponent.

After Councils recommendations, Town Staff are to communicate to the winning proponent promptly following this Council meeting and formally engage in contracts with said proponent.

Unity

QUESTIONS?

Protecting the Kawartha Lakes' Health and Value

Natural Shoreline Preservation

to: the Township of Havelock Belmont Methuen

by: Shoreline Conservation Initiative for Peterborough County
Alexander Kostiw, Terry Rees

October 15, 2024

Shoreline Conservation Initiative for Peterborough County

Protecting & Restoring Natural Shorelines

- Stoney Lake Environment Council our founder in 2021 and now our partner
- Our focus: North Kawartha, Havelock-Belmont-Methuen, Trent Lakes, Selwyn and Douro-Dummer
- Education & policy discussions enhanced by network of entities devoted to natural heritage conservation

Hardening a shoreline …

The water brings people to the Kawarthas

Preserving shorelines: a municipal challenge

- To preserve quality of life
- To sustain the tax base & local income
- To moderate climate change impacts
- To respond to the rising pace and size of waterfront developments
- To address expanding environmental responsibilities

Lake quality is a public good to be respected alongside property owners' rights.

Natural shorelands: the highlights

- 80-90% of all lake life born, raised and fed where land and water meet
- Complex habitats, supporting plants, insects, birds, microorganisms, amphibians, mammals and fish
- Protecting surface and ground water quality slows growth of aquatic weeds and algae
- Limiting climate change impact because draught resistant, require little upkeep, and restrict erosion

Goal: to preserve 75% of shoreline buffer in natural state

4

The Increasing Stresses on Natural Shorelines

- The pace & scale of waterfront property development
- Removal of mature trees & other native vegetation
- “Urban landscapes”, fertilizers, road salt
- Excessive boat wakes
- Shoreline shape, slope and soil/sand modification
- Shoreline hardening (i.e., walls, permanent docks)
- Climate change: rising water & air temperatures, storm surge and debris movement
- Pollution from excessive artificial light

Hardening a shoreline …

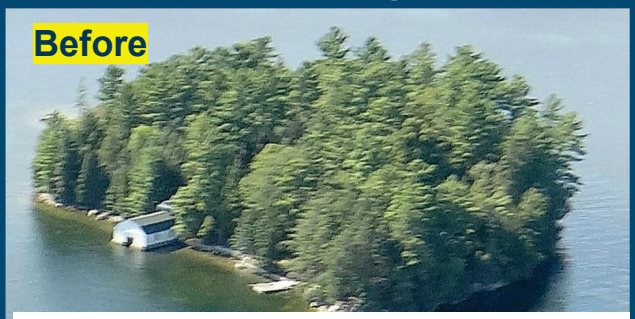
Natural shorelines require little maintenance, mitigate climate change, limit erosion, and raise resistance to drought and invasive species.

5

The sources of natural shoreline damage …

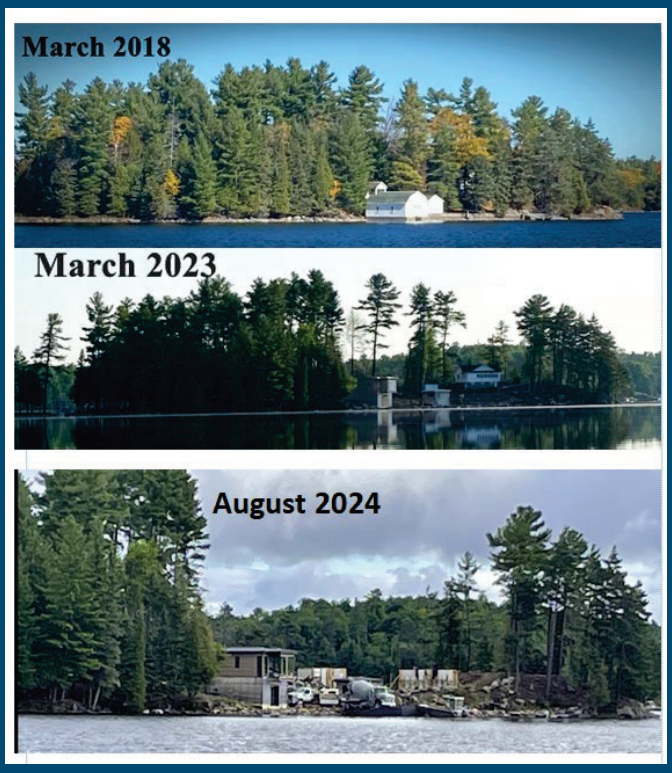
- Cottage development too dense
- Grandfathered buildings too close to water
- Investment properties for Short-Term Rentals
- Removal of trees and other natural vegetation for ”urban landscapes”
- Shoreline shape and slope modified; original soils replaced by imported soil and sand
- Shorelines hardened – walls, boat launches, large permanent docks

… complicate the policy response



The sources of natural shoreline damage …

- **Minor Variances**



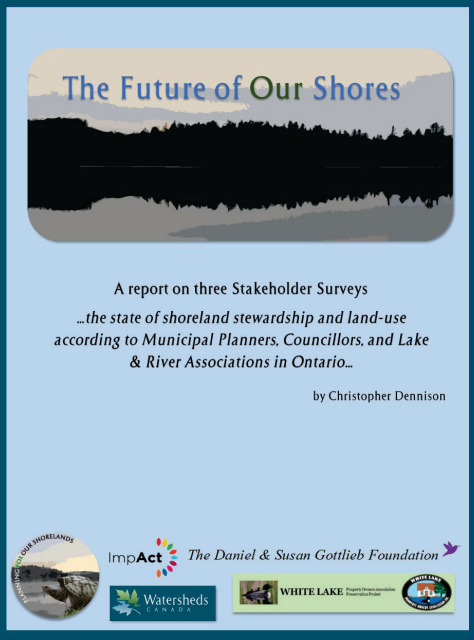
Broadening our shoreline education

- **Existing** and **new** property owners
- Lake associations
- County and Township Councils & staff
- Realtors, real estate lawyers
- Contractors and all building trades
- Arborists, landscapers, nurseries

The goal: greater public respect for natural shorelines

8

Education essential & ongoing, but more tools needed



A survey of 50 Lake Associations, 23 planners and 44 elected officials across Ontario recommended:

- Improved shoreland stewardship for lakes & rivers
- More education on shoreland value for new and existing residents
- **More comprehensive shoreland protection in *Official Plans* and by-laws**
- **Without monitoring and enforcement, regulation will not be achieved**

Municipal Shoreline Protection By-laws: Examples

- **County of Haliburton** : ***Tree Preservation By-law*** (2012)**; *Shoreline Preservation By-law*** (2022-23, three of four Townships participating)
- **Township of Muskoka Lakes**: ***Tree Preservation and Site Alteration By-laws*** *(2008)* and ***Site Plan Control***
- **Lake of Bays:** ***Community Planning Permit System***

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Shoreline Restoration

Examples of Local Resources:

- Watersheds Canada: Love Your Lake and Natural Edge programs
- Peterborough GreenUP (Ecology Park)

Examples of Funding:

- HBM's *Environmental Grant Program,* matching 50-50 the costs to preserve or restore the environment

11

Possible Actions for HBM

Near-Term

- Create an HBM shoreline preservation brochure for distribution to stakeholders

Mid-Term

- Review your existing Zoning bylaws relating to shorelines and your future options
- For shorelines, assess municipal monitoring and enforcement practices

Resources for HBM

Watersheds CANADA

A Regulatory Guide to Achieving Environmental Net Gain at the Waterfront

https://watersheds.ca/download-net-gain-document/

Shoreline Conservation Initiative for Peterborough County

Presenters: Alexander Kostiw (Jacks Lake), Terry Rees (Lake Kasshabog)

Resources

Watersheds Canada *https://watersheds.ca*

Federation of Ontario Cottagers' Associations (FOCA) *www.foca.on.ca*

J.L. Richards & Associates Ltd. **Final Report: Haliburton County Shoreline Preservation Review,** 2021.

Appendix

The Township of North Kawartha

Protecting and Restoring Healthy Shorelines

Q2 2022

https://www.northkawartha.ca/en/our-services/resources/Building-and-Planning-Department/Protecting-and-Restoring-healthy-shorelines_2022.pdf

North Kawartha Township strives to work with its ratepayers, associations, recreational users and various agencies to maintain and restore natural shorelines in order to protect the quality of water and health of our lakes.

The County Official Plan, Section 6.2.5.3 (h) states, "The preservation of naturally-vegetated shoreline is encouraged in order to minimize the destruction to the shoreline and wetland habitat, minimize visual impact on the water body, maintain wildlife habitats and corridors and improve water quality."

The North Kawartha Comprehensive Zoning By-Law 26-2013 provides for a balance of property owners' rights and the protection of our lakes. Development (renovation) of a non-complying main structure (i.e. main cottage) located in the 30 metre (100 foot) setback zone may be permitted if the application meets the specific requirements set out in the Comprehensive Zoning By-Law #26-2013.

Other Sources of Information:

- Local Cottage Associations
- Federation of Ontario Cottagers' Associations (FOCA) - Healthy Waterfronts: A Shoreline Owner's Guide
- Watersheds Canada

What you can do to protect and restore healthy shorelines:

- Preservation of the natural vegetation
- Naturalization of degraded areas
- Enhancement with native species
- Restoration of cleared areas

Help your investment grow!

Recent studies demonstrate that property values decrease as water quality declines. The single most important thing you can do to protect the value of your waterfront investment is to maintain the water quality in your lake. Think of the natural vegetation on your property as a free shoreline insurance policy.

Sample of Native Trees, Shrubs and Plants

Trees

- White Pine
- Red Pine
- White Birch
- White Cedar
- White Spruce
- Red Oak
- Sugar Maple

Shrubs

- Alternate Leaf
- Dogwood
- Nannyberry
- Chokeberry
- Fragrant Sumac
- Creeping Juniper
- Serviceberry

Plants

- Canada Anemone
- Helen's Flower
- Black-eyed Susan
- False Sunflower
- Switchgrass

Thank you to The Environment Council for Clear, Ston(e)y and White Lakes and North Kawartha Lakes Association

PROTECTING & RESTORING HEALTHY SHORELINES

The Township of North Kawartha is fortunate to contain numerous unspoiled lakes that are enjoyed by all of our residents, recreational users and wildlife. Maintaining water quality and healthy lakes is essential.

The North Kawartha Strategic Plan 2019-2022 Vision is of "A united and healthy community connected to our natural heritage."

This pamphlet is designed to provide shoreline property owners with important information when working on shoreline properties. Please read carefully before applying for a building permit.

THE TOWNSHIP OF NORTH KAWARTHA

Q.2-2022

Needs Improvement

1. Cleared manicured lot - lacks shade and privacy; loss of native plants leads to more erosion, runoff and work for you!
2. Runoff - flows over solid surfaces, accelerating erosion; pollutants and excess silt degrade habitat for aquatic life.
3. Chemical fertilizers and pesticides - degrade water quality, are hazardous to your health, can be deadly for fish and other wildlife.
4. Lawn to the water's edge - lacks deep roots required to stabilize bank.
5. Hardened shoreline - can deflect erosion downstream, eliminates "natural filtering" of pollutants and sediment, degrades habitat.
6. Artificial Beach - requires ongoing sand replacement, reduces water quality, degrades aquatic habitat.
7. Old 2-stroke engine - dumps 24 - 40% of fuel, un-combusted, into water and air.
8. Solid crib dock - destroys aquatic habitat, alters currents, can deflect erosion downstream.
9. Malfunctioning septic system - allows phosphorus and bacteria to leach into adjacent waterways.
10. Harmful household chemicals and cleaners - damage septic system and degrade water quality.

Healthy

1. Prune trees rather than removing them: plan low maintenance native trees and shrubs to reduce erosion and absorb runoff.
2. Replace solid surfaces with porous materials where possible; redirect runoff into settling areas, away from the water's edge.
3. "Mow it high and let it lie" - leave grass 8 cm (3 in) high to retain moisture; mulch clippings for fertilizer
4. Start a buffer - leave some grass uncut along the water's edge; restore with deep rooting native plants.
5. "Soften" your shoreline - improve erosion protection with native trees, shrubs, grasses and aquatic plants.
6. Create a "dry land" beach above the high water mark; let imported sand erode away naturally and native plants grow back.
7. Use an electric outboard, or a four-stroke engine.
8. Remove solid dock. Install a pipe, cantilever or floating dock.
9. Care for your septic system by having it pumped out and upgrade it when necessary. Consult an expert.
10. Use environmentally-friendly products, or alternatives like baking soda and vinegar.

The Ribbon of Life Ninety percent of all lake life is born, raised and fed in the area where land and water meet. The shallow water and the first 10 to 15 metres of shoreland forms a ribbon of life around lakes and rivers that is essential to the survival of many species. This rich and complex habitat supports plants, micro-organisms, insects, amphibians, birds, mammals and fish.

Unaware of the importance of shoreline vegetation, many landowners clear their shorelines and transform them into urban landscapes. They destroy the cattails, bulrushes and other native species. They also build retaining walls, docks and boathouses. These changes destroy the balance of the aquatic and shoreline ecosystems. They also alter the wildlife habitat, natural beauty and character of our lakes and rivers.

Natural shoreline vegetation plays an important role in preventing soil erosion. Plant roots anchor the soil, preventing shoreland from being washed away by currents, waves and rain. The roots of mature trees reach down to the upper levels of the water table. Dogwood and meadowsweet roots form a web that extends a half-metre downward. These native species are far more effective in protecting properties from erosion than the roots of grasses, which only reach 8 centimetres below the surface.

By preventing erosion and runoff, natural shoreline vegetation also improves water quality. When soil and excess nutrients are washed into the water, fish spawning beds can be destroyed, dissolved oxygen is depleted and the growth of algae and aquatic plants is encouraged. Shoreline vegetation also improves water quality by shading and cooling shallow water.
All of these changes in water quality can lead to rapid eutrophication - the aging of a lake. Eutrophication of a lake ultimately changes the kinds and numbers of species that can live there.

Best Practice A healthy buffer zone, or the ribbon of life as it is called, is potentially the most important factor in protecting the quality of water of our lakes for future generations to enjoy. As a best practice, every waterfront property owner should strive to maintain 75% of the buffer zone in its natural state focusing all cottage activities, structures and viewing corridors on the remaining 25%.

Understanding the interconnection of lake zones

Deep water:

- Where light does not penetrate to the bottom

Near Shore Zone (0 to 3+ m) Littoral Zone:

- Zone of maximum fish production (60% - 80%)
- Substrate on the bottom depends on currents, land runoff, erosion
- Some shade is beneficial

Riparian Zone:

- The area between the uplands and shoreline – deep, rich and moist soils where diverse communities can grow

Uplands

- **Where we build our cottages**

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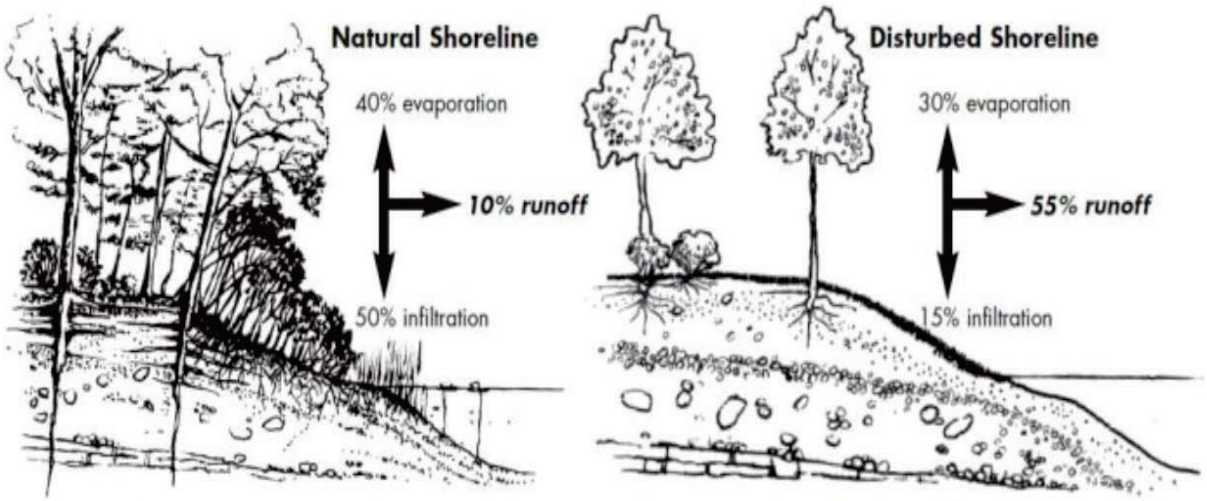
How natural shorelands protect water quality



https://www.rvca.ca/stewardship-grants/shoreline-naturalization/benefits-of-a-natural-shoreline

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Mayor Martin and Members of Council

From: Josh Storey, Supervisor of Parks, Recreation and Facilities

Meeting Date: October 15, 2024

Subject: Parks, Recreation and Facilities September Department Updates

Purpose:

The purpose of this report is to provide department updates to Council for the month of September 2024.

Recommendation:

That Council receive this update report as information.

Background:

The month of September department updates included;

- LED lights have been installed for the Cordova outdoor rink.
- Interior painting within the arena was completed.
- The surface beside the natural gas meters at the arena was prepared and a concrete pad was poured for the new Natural Gas pressure station that will be arriving within the coming weeks.
- New Mathison property conservation signage has been installed.
- Five (5) new banners are in production and will be installed along the arena lane way.
- The humidity percentage in the arena has been controlled and temperatures are back to normal operating conditions.
- Railing legs at the main office have been repaired.
- Public skating started September 15th and will continue every Sunday from 1:00-2:00pm and Wednesday from 1:00-5:00pm.
- The splash pad was closed for the season September 29th.

Financial Impact:

There is no financial impact as a result of this report.

Respectfully submitted by:

Josh Storey

Josh Storey
Supervisor of Parks, Recreation and Facilities

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Mayor Martin and Members of Council

From: Travis Toms, Chief Building Official

Meeting Date: October 15, 2024

Subject: Building Department Activity Report – September 2024

PURPOSE:

To provide Council with statistical information concerning Building Department activity during the month of September 2024, as well as statistical information to compare current vs. prior year.

RECOMMENDATION:

Receive for information.

BACKGROUND:

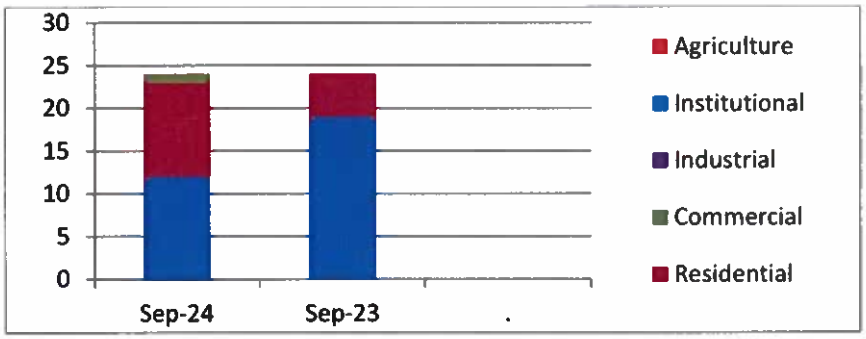
During the month of September 2024, the Building Department conducted **92** site (**397 YTD**) inspections.

Total mileage for both the 2011 and 2019 building department trucks is 2803 **kilometers (22,227 YTD).**

The Building Department issued **24** building permits during the month of September 2024 **(116 YTD)**, representing an estimated **$1,850,932.00** in construction costs.

Permit Type	# Permits Issued	Construction Cost (est.)
Residential	11	$ 1,152,882.00
Seasonal Residential	12	$ 694,550.00
Commercial	1	$ 3,500.00

Below is an overview of Building Department activity for September 2024, compared to the same period last year:



Permit Fees Collected (September 2024 vs. 2023):

September 2024 - $ 23,614.21 Development Fees $30,124.00
September 2023 - $ 18,704.33

Total Permit Fees Collected (2024 vs. 2023 Year-to-Date):

2024 (January 1 – September 30) – $ 119,876.80
2023 (January 1 – September 30) – $ 223,661.03

By-Law Enforcement (includes Building Infractions) September 2024

New Files – 8 (3 Build without permit)
Closed Files – 2

Planning Applications September 2024

Minor Variances - 5
Zone Amendments – 1
Planning Related Reports – 3

Submitted by

Travis Toms
Chief Building Official/By-Law Enforcement

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Mayor Martin and Members of Council

From: Lionel Towns, Treasurer

Meeting Date: October 15, 2024

Subject: 2025 Ontario Provincial Police (OPP) Annual Billing Statement

PURPOSE:

To provide Council with the details contained in the 2025 OPP Annual Billing Statement and their effect on the 2025 HBM budget and tax rates.

RECOMMENDATION:

That this Report be received for information.

BACKGROUND:

On Friday, October 4th, the OPP Financial Services Unit released their 2025 Annual Billing Statement which includes the monthly billing amount that HBM is expected to pay next year. While the email that accompanied the statement did not include any highlights from their budget, or rationale for increases to any components of their operations, 2025's yearly total billing, for our municipality, will be $1,443,614 compared to $1,228,405 in 2024 (a $215,209 increase, or 17.5%).

Since the release of this information, a poll was taken by an informal Ontario municipal treasurers group. The average budget increase, from twenty-nine respondents, was 22.1%, compared to the 17.5% increase for HBM.

The largest component of the year over year change for our municipality is a $70,725 year end adjustment for 2023. Each budget year, the OPP Financial Services Unit compares their forecasts tor the second previous year to their actual costs, and either

bills their clients for a shortfall, or reduces their billing to reflect a reported budget surplus. The difference between what we were billed during 2023, and what the "actual" costs were according to the 2025 Annual Billing Statement, is $70,725.

Each year, municipalities are billed by the province for:

1. Base Service by household count
2. Calls for service
3. Overtime
4. Prisoner transportation
5. Accommodation/cleaning services; and
6. Year end Reconciliations.

The following chart shows the progression of each of these components for the three-year period of 2023 through 2025:

Havelock-Belmont-Methuen
OPP Annual Billing Statements
2023 Through 2025

Ref	Component of OPP Billing	2023	2024	2025	$ Increase (2023-2025)	% Increase (2023-2025)	Impact on HBM Tax Rate
1	Base Service	748,626	751,432	861,364	112,738	15.1%	
2	Calls for Service	*401,862*	*408,393*	*436,745*	34,883	8.7%	
3	Overtime	*32,603*	*34,087*	*41,269*	8,666	26.6%	
4	Prisoner Transportation	5,287	5,083	7,593	2,306	43.6%	
5	;Accomodation/Cleaning Services	22,008	22,236	25,918	3,910	17.8%	
	Subtotal	1,210,386	1,221,231	1,372,889	162,503	13.4%	
6	Year-end Adjustment	19,321	7,175	70,725	51,404		
	Total	**1,229,707**	**1,228,406**	**1,443,614**	**213,907**	**17.4%**	**2.7%**

Attached to the OPP's 2025 Annual Billing Statement were the following notes which provide details on how each component of municipal billing is determined.

Municipal Base Services and Calls for Service Costs - The costs allocated to municipalities are determined based on the costs assigned to detachment staff performing municipal policing activities across the province. A statistical analysis of activity in detachments is used to determine the municipal policing workload allocation of all detachment-based staff as well as the allocation of the municipal workload between base services and calls for service activity. For 2025 billing purposes the allocation of the municipal workload in detachments has been calculated to be 50.7 % Base Services and 49.3 % Calls for Service. The total 2025 Base Services and Calls for Service cost calculation is detailed on the Base Services and Calls for Service Cost Summary included in the municipal billing package.

Base Services - The cost to each municipality is determined by the number of properties in the municipality and the standard province-wide average cost per property of $189.44 estimated for 2025. The number of municipal properties is determined based on MPAC data. The calculation of the standard province-wide base cost per property is detailed on Base Services and Calls for Service Cost Summary included in the municipal billing package.

Calls for Service - The municipality's Calls for Service cost is a proportionate share of the total cost of municipal calls for service costs calculated for the province. A municipality's proportionate share of the costs is based on weighted time standards applied to the historical billable calls for service. The municipality's total weighted time is calculated as a percentage of the total of all municipalities.

Overtime - Municipalities are billed for overtime resulting from occurrences in their geographic area and a portion of overtime that is not linked specifically to a municipality, such as training. Municipalities are not charged for overtime identified as a provincial responsibility. The overtime activity for the calendar years 2020, 2021, 2022, and 2023

has been analyzed and averaged to estimate the 2025 costs. The costs incorporate the estimated 2025 salary rates and a discount to reflect overtime paid as time in lieu. The overtime costs incurred in servicing detachments for shift shortages have been allocated on a per property basis based on straight time. Please be advised that these costs will be reconciled to actual 2025 hours and salary rates and included in the 2027 Annual Billing Statement.

Court Security and Prisoner Transportation (CSPT) - Municipalities with court security responsibilities in local courthouses are billed court security costs based on the cost of the staff required to provide designated court security activities. Prisoner transportation costs are charged to all municipalities based on the standard province-wide per property cost. The 2025 costs have been estimated based on the 2023 activity levels. These costs will be reconciled to the actual cost of service required in 2025. There was no information available about the status of 2025 Court Security Prisoner Transportation Grant Program at the time of the Annual Billing Statement preparation.

Year-end Adjustment - The 2023 adjustment accounts for the difference between the amount billed based on the estimated cost in the Annual Billing Statement and the reconciled cost in the Year-end Summary. The most significant year-end adjustments are resulting from the cost of actual versus estimated municipal requirements for overtime, contract enhancements and court security.

FINANCIAL IMPACT

HBM municipal tax rates increase 1% for each $78,000 increase in net tax levy (approximately). An increase of $215,209 to our municipality's policing budget would equate to a 2.7% increase in our tax rates, without taking into account any internal departmental costs for 2025.

Respectfully submitted by:

Lionel Towns

Lionel Towns
Treasurer

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Mayor Martin and Members of Council

From: Peter Lauesen, Manager of Public Works

Meeting Date: October 15, 2024

Subject: Snowplowing Quotations for the 2024-2025 and 2025-2026 Winter Seasons

PURPOSE

The purpose of this report is to provide Council with information on the submissions received for Snowplowing Quotations for the 2024-2026 Winter Seasons.

RECOMMENDATION

That Council provide approval to award quotation #PW-2024-06 Snowplowing Quotations for the 2024-2025 and 2025-2026 Winter Seasons to Reline Pavement Markings in the amount of $24,140.00 (plus HST).

BACKGROUND

The advertisements to submit quotations for Snowplowing Quotations for the 2024-2025 and 2025-2026 Winter Seasons were posted on social media (Facebook/Instagram), as well as on the Township website starting September 13, 2024. The closing date and time for the quotations was October 3, 2024, at 11:00 am. Quotations were opened in the Council Chamber on October 3, 2024, at 11:00 am. In attendance for the opening were Deputy Mayor – Hart Webb, CAO/Clerk – Bob Angione, Manager of Public Works – Peter Lauesen, Deputy Treasurer – Kayla Spooner, and Administrative Assistant – Skylar Soady.

The scope of work outlined in the request for quotation included,

- One Mile of Road – Lot 29 Con. 3 & 4, Methuen Twp. (Clare Newham's Rd.)
- 250 Meters of Sandy Lake Road (From County Road 46 to Fire Route #84)
- Parking Lot at County Road 46
- 96 Shady Lane – Jack Lake Transfer Station

One (1) quotation was received from Reline Pavement Markings in the amount of $12,070.00 (plus HST) per each season.

FINANCIAL IMPACT

The financial impact of this report will be taken from account, 01-3220-5366 – Contracts – Snowplowing & Removal in the amount of $12,282.43 (including non-refundable HST) for the 2024-2025 winter season.

An additional $12,282.43 (including non-refundable HST) will be expensed for the 2025-2026 winter season.

Respectfully submitted by:

Peter Lauesen

Peter Lauesen - CRS
Manager of Public Works

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Mayor Martin and Members of Council

From: Peter Lauesen, Manager of Public Works

Meeting Date: October 15, 2024

Subject: Jug Fill & Water Supply Station Pricing

Purpose:

The purpose of this report is to obtain Council's approval to set the rates for the Jug Fill & Water Supply Station to $3.00 per 5 Gallon Jug (18.9L) and $3.50 per cubic meter.

Recommendation:

That Council provide approval to set the Jug Fill & Water Supply Station rates to $3.00 per 5 Gallon Jug (18.9L) and $3.50 per cubic meter.

Background:

The Jug Fill & Water Supply station has been installed and passed all pressure testing. For the station to be operational, rates to be charged per 5 Gallon Jug as well as, per cubic meter must be established.

Staff researched neighbouring municipalities as well as other organizations to compare pricing strategies.

Gathered pricing information for 5 Gallon Jug filling include:

- Simply Pure Water - $3.50
- Hosers - $3.00
- Home Hardware - $3.00
- Flowpoint - $3.00

Gathered information for bulk water filling stations charged per cubic meter include:

- Peterborough - $3.25
- Trent Hills - $3.70
- Quinte West - $2.85
- Flowpoint - $5.55

Staff are recommending setting the charge rates to $3.00 per 5 Gallon Jug (18.9L) and $3.50 per cubic meter.

Financial Impact:

There will be no financial impact to the Township from this report.

Respectfully submitted by:

Peter Lauesen

Peter Lauesen – CRS
Manager of Public Works

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Mayor Martin and Members of Council

From: Shari Gottschalk, Economic Development Officer

Meeting Date: October 15, 2024

Subject: **3rd Annual Pumpkin Parade Planning**

PURPOSE:

The purpose of this report is to provide Council with information pertaining to the 3rd Annual Pumpkin Parade to take place November 1, 2024, and seek Council's approval to provide a two-day relief period for Off Roads Vehicle By-law 2024-024.

RECOMMENDATION:

That Council approve relief of Off Roads Vehicle By-law 2024-024 for two-days, November 1st and 2nd; and

That Council approve in advance the insertion a Pumpkin Parade flyer with pumpkin collection instructions into the village October 2025 utilities billing.

BACKGROUND:

November 1, 2024, the Township sponsored 3rd Annual Pumpkin Parade will take place at the Mathison Conservation Area trailhead and parking lot. Residents and visitors will enjoy the lit carved pumpkins along the Mathison trails.

The Pumpkin Parade planned elements and event activities, are as follows:

- Pumpkins will be collected and placed on trail November 1st prior to 4pm and collected by committee members the following day November 2nd.
- Based on prior years, we anticipate 275 – 300 pumpkins donated and 300 – 325 attendees.
- There will be 3 fire pits and 1 large chiminea with benches on the gravel parking area. There will be 4 large fire extinguishers on site with assigned responsibility. Steps will be taken to blow leaves away from placed pumpkins. All pumpkins and tiki torches along trail will be battery powered LEDs.
- We will be serving warm apple cider, marshmallows for toasting, and pumpkin cookies supplied by local baker. The event tables will be lit with music playing.

- 2 – 3 vendors with Halloween and/or fall appropriate items will be exhibiting.
- There is a Havelock Minor Hockey (HMH) fundraising element. The event is FREE, however donations to HMH are welcomed. HMH will be conducting a 50/50 draw and winning ticket drawn at the event at 6pm.
- The committee is working with the Havelock Seniors Club and aim to use a safe conveyance (extended golf cart or wagon) that will shuttle seniors through the Mathison property along the Newton's Way and Wetland Ridge loop returning to the trailhead starting point. The shuttle service will start at 4pm and run until 5pm and there will be no pedestrian traffic on trails until the Senior Shuttle finishes. It is important to note, this Senior Shuttle element is contingent on acquiring use of the Norwood Agricultural Society's multi-person shuttle wagon.

Promotion of the event will include posters throughout Havelock and surrounding villages including schools, as well as social media promotion, and event calendar registration (PKED, KawarthaNow, PtboCanada, CHEX, Global, and Google). Unfortunately, we missed our opportunity to insert the Pumpkin Parade event particulars with pumpkin collection instructions into the October 2024 utility bill. Therefore, we are acting proactively seeking Council's approval for the October 2025 insert.

FINANCIAL IMPACT:

The Pumpkin Parade event is tracking below 2024 budget allotment of $750.00.

In consultation with:

- Bob Angione, CAO & Clerk

Attachments:

- None

Respectfully submitted by:

Shari Gottschalk
Economic Development Officer
Township of Havelock-Belmont-Methuen

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Mayor Martin and Members of Council

From: Bob Angione, Chief Administrative Officer/Clerk

Meeting Date: August 15, 2024

Subject: Electoral Ward System

Purpose:

The purpose of this report is to present for adoption By-law 2024-074, being a By-law to dissolve the Ward System of Electoral Representation for the Corporation of the Township of Havelock-Belmont-Methuen and Institute an At-Large System of Electoral Representation.

Recommendation:

Whereas currently the positions of Mayor, Deputy Mayor, and Councillor at Large are elected by all the eligible voters within the Township but the Township Ward Councillor and the Village Ward Councillor are elected solely by the respective eligible electors in that specific ward; and

Whereas Council has expressed a desire to review the electoral ward system currently in place within the Township of Havelock-Belmont-Methuen; and

Whereas Section 222(1) of the *Municipal Act, 2001* states that a municipality is authorized *to divide or redivide the municipality into wards or to dissolve the existing wards;* and

Whereas Council directed that a public consultation process be undertaken; and

Whereas the public consultation process commenced with a survey that was included in the general tax mailing early this year; and

Whereas that survey yielded a record 649 responses; and

Whereas the results of that survey broke down as 446 (69%) in favour of a change and 203 (31%) opposed to a change; and

Whereas two Public Meetings were held on July 16, 2024 to receive verbal input from the residents of the Township; one in the morning and one in the evening; and

Whereas three (3) verbal presentations and one written submission were received at the first Public Meeting with everyone expressing support for abolishing the ward system and replacing it with an at large system; and

Whereas six (6) delegations were received at the evening session with three (3) speaking in favour of abolishing the ward system and three (3) speaking in opposition to changing the current ward system; and

Whereas the ward numbers consistently reveal that the Village Ward voters are exclusively electing 20% of the Members of Council (Village Ward Councillor) with 12% to 13% of the eligible voters while Township Ward voters are exclusively electing 20% of the Members of Council (Township Ward Councillor) with 87% to 88% of the eligible electors; and

Whereas the ward numbers also reveal that the Township Ward member of council has been elected by at least 718 votes more than the Village Ward member of council in each of the last three elections; and

Whereas the principle of effective representation for the entire Township supports a change to the at large system of electing all Members of Council whereby voters can be equally represented and the relative parity of voting power is achieved by having all eligible electors voting for all positions of Council;

Be It Resolved That By-law 2024-074, being a By-law to dissolve the Ward System of Electoral Representation for the Corporation of the Township of Havelock-Belmont-Methuen and Institute an At-Large System of Electoral Representation be adopted in the by-law section of this Council Meeting whereby the roles of roles of Mayor, Deputy Mayor, and three Councillor positions are all elected at-large.

Background:

At the Open Session Regular Council Meeting held on August 15, 2024 Council passed Resolution Number R-421-24 to eliminate the ward system and and create an at-large system whereby the roles of Mayor, Deputy Mayor, and three Councillor positions are all elected at-large. Staff provided notice to the public via a posting on the Township website and via four postings on Facebook and four postings on Instagram during the months of September and October. The requirement for giving notice has been met.

The presenting of By-law 2024-074 follows an extensive public engagement process that included a survey of the community and two public meetings.

The public input survey, as attached to this report, was included in the general tax bill mailing of late February. Paper copies were also made available at the Township Municipal Office. The survey was also posted to the Township website from Monday, March 4, 2024 to Friday, April 19, 2024.

The first question of the survey asked;
Do you want the Municipal Election Ward System to change?

A total of 649 submissions were received. This represents the highest number of submissions to a Township survey. The results broke down as 446 (69%) in favour of a change and 203 (31%) opposed to a change.

A total of 545 (84%) surveys were submitted electronically via the Township website and 104 (16%) were submitted via paper.

Of the 446 submissions in support of the change, 396 voted to dissolve the ward system and have all voters vote for all Council positions. This represents 61% of the total submissions or 89% of the yes submissions.

Of the 446 submissions in support of change, 39 voted to leave the voting system as is but redraw the boundaries to have an equal number of voters in each ward. This represents 6% of the total submissions or 9% of the yes submissions.

Of the 446 submissions in support of change, 11 voted for the “Other” option and provided various comments. This represents 1.7% of the total submissions or 2.5% of the yes submissions.

Some of the comments received in the “Other” category include:

- Dissolve the Township and have governance and administration through the County of Peterborough.
- Three Council positions should be split between (1) the Village of Havelock (2) seasonal or lakefront residents (3) rural residents.
- Have one Council Member represent all cottages on all the lakes.
- Term limits for Members of Council.
- Voters should have the ability to vote in both wards.
- Eliminate Councillor-at-Large position and replace with another Township Ward Councillor or simply eliminate Councillor-at-Large position.

Following the survey, two public meetings were held on Tuesday, July 16, 2024. The first public meeting commenced at 9:30 a.m. and the second public meeting commenced at 6:00 p.m.

Three (3) verbal presentations and one written submission were received at the first Public Meeting with everyone expressing support for abolishing the ward system and replacing it with an at large system.

Six (6) delegations were received at the evening session with three (3) speaking in favour of abolishing the ward system and three (3) speaking in opposition to changing the ward system.

Between the two public meetings, seven (7) submissions expressed support for abolishing the ward system and three (3) submissions expressed opposition to change.

The Township of Havelock-Belmont-Methuen is currently comprised of two electoral wards for municipal elections; Township Ward and the Village Ward. The ward boundaries are described as follows:

Ward 01 – Township Ward

Being all properties lying within the descriptive boundaries known as Belmont and Methuen in the assessment roll of the municipality with map sub-division number of 010.

Ward 02 – Village Ward

Being all properties lying within the descriptive boundaries known as the Village of Havelock and appearing in the assessment roll of the municipality with map sub-division number of 020.

Currently one councillor is elected in the Township Ward and one councillor is elected in the Village Ward with the remaining three members of council (Mayor, Deputy Mayor, and Councillor at Large) being elected at large by all the voters of the Township. The Township of Havelock-Belmont-Methuen was formed on January 1, 1998 via the amalgamation of Belmont and Methuen Townships with the Village of Havelock. The electoral wards have remained unchanged for twenty-five years since amalgamation.

In the 2014 municipal election there were a total 7,548 registered voters in the entire Township comprised of 6,613 eligible voters in the Township Ward and 935 in the Village Ward. These numbers equate to 88% of the eligible voters residing in the Township Ward and 12% of the eligible voters residing in the Village Ward. In 2014, voter turnout in the Township Ward was 2,334 (35.29%) with the winner receiving 1,000 votes. That same year the voter turnout in the Village Ward was 528 (56.47%) with the winner receiving 231 votes.

In the 2018 municipal election there were a total 7,255 registered voters in the entire Township comprised of 6,387 eligible voters in the Township Ward and 868 in the

Village Ward. These numbers equate to 88% of the voters being in the Township Ward and 12% of the voters being in the Village Ward. In 2018, voter turnout in the Township Ward was 2,460 (38.52%) with the winner receiving 1,255 votes. That same year the voter turnout in the Village Ward was 464 (53.46%) with the winner receiving 241 votes.

In the 2022 municipal election there were a total 7,498 registered voters in the entire Township comprised of 6,531 eligible voters in the Township Ward and 967 in the Village Ward. These numbers equate to 87% of the voters residing in the Township Ward and 13% of the voters residing in the Village Ward. In 2022, voter turnout in the Township Ward was 1,839 (28.17%) with the winner receiving 858 votes. That same year the voter turnout in the Village Ward was 355 (36.50%) with the winner receiving 140 votes.

With the voters electing a five-member council, the ward numbers consistently reveal that the Village Ward voters are electing 20% of the Members of Council with 12% to 13% of the eligible voters while Township Ward voters are electing 20% of the Members of Council with 87% to 88% of the eligible electors. The ward numbers also reveal that the Township Ward member of council has been elected by at least 718 votes more than the Village Ward member of council in each of the last three elections. It is important to note that the number votes required to win and the margin of victory in any given election is affected by the number of candidates running in each ward.

The Growth Analysis Report prepared for the County of Peterborough by the consulting firm Hemson forecasts a population growth of 600 to 1,000 citizens in the Township of Havelock-Belmont-Methuen by the year 2051. Even if all of this growth occurs in the Village Ward the proportion of eligible voters would remain unbalanced with 77% of the voters being in the Township Ward and 23% in the Village Ward.

All eligible voters are electing the three positions of Mayor, Deputy Mayor, and Councillor at Large.

There are three (3) options available regarding the composition of the electoral ward system in the Township of Havelock-Belmont-Methuen:

1. Leave the electoral ward system unchanged.
2. Redraw the boundaries of the two current wards to allow for an equal number of eligible voters in each ward.
3. Eliminate the ward system and elect all Members of Council at-large whereby all eligible voters within the entire Township would be casting ballots for Mayor, Deputy Mayor, and three Councillors.

Municipalities have the legal authority to divide or re-divide the municipality into wards or to dissolve existing wards. This typically entails a Ward Boundary Review process, public consultation, and the passing of a by-law by Council. The by-law is subject to an

appeal to the Ontario Land Tribunal and may be challenged by anyone including the Minister of Municipal Affairs although explicit provincial approval is not required.

The Municipal Act does allow the council of a municipality to determine the number of wards into which the municipality may be divided. Municipalities wanting to create, dissolve or change ward boundaries are required to comply with certain processes and requirements including:

- passing a by-law that sets out the new ward boundaries or at-large structure
- providing notice of the passing of the by-law to the public within fifteen days
- specifying the last date for the public to file a notice of appeal of the by-law.

The next municipal election is scheduled to be held in 2026. For changes to ward boundaries to be in effect for the next regular municipal election, by-laws must be passed before January 1, 2026. Passing the by-law today will establish the ward system in time for the next election barring an appeal.

The *Municipal Act, 2001* provides the framework for municipalities to conduct electoral Ward Boundary reviews. Section 222(1) of the Act states that a municipality is authorized to "divide or redivide the municipality into wards or to dissolve the existing wards."

Section 222(3) of *Municipal Act, 2001* provides that the municipality is required to give public notice that the ward boundary by-law has been passed within fifteen (15) days after the by-law is passed. The notice must specify the last date for filing a notice of appeal. This will be the next step if the by-law is passed today.

Section 222(4) of the *Municipal Act, 2001* states that within forty-five (45) days of the Ward Boundary By-law being passed, it may be appealed to the OLT by the "Minister or any other person or agency." The appeal is made by filing a notice of appeal with the municipality setting out the objections to the By-law and the reasons in support of the objections.

Section 222(5) of the *Municipal Act, 2001* states that the municipality is required to forward any notice of appeal to the OLT within 15 days after the last day for filing the notice.

The Township of Havelock-Belmont-Methuen was formed twenty-six years ago in 1998 through the amalgamation of Belmont and Methuen Townships and the Village of Havelock. While past Township Councils have considered a revision to the electoral ward system, no changes have been made since amalgamation.

Financial Impact:

There is no financial impact to adopting a by-law to change the electoral ward system and advertising that this by-law has been passed. A Notice of Passing will be posted on Facebook and Instagram as well as the Township website. The Notice of Passing will also be sent to the Minister of Municipal Affairs. Should an appeal be filed with the Ontario Land Tribunal legal costs may be incurred to attend a tribunal hearing.

In Consultation With:

Skylar Soddy, Administrative Assistant
Leah Hutton, Executive Assistant and Acting Deputy Clerk

Attachments:

1. Public Notice of By-law to be Considered on October 15, 2024.
2. Public Input Survey that was included in the first tax bill mailing of the year.

Respectfully Submitted:

Bob Angione

Bob Angione,
Chief Administrative Officer/Clerk

Electoral Ward System By-Law Adoption

At the Open Session Regular Council Meeting to be held on Tuesday, October 15, 2024, a by-law will be presented for adoption that will dissolve the existing ward system and replace it with an at-large voting system whereby the positions of Mayor, Deputy Mayor, and three members of council are elected by all the voters of the Township.

Stay informed.

Thank you!

Council would like your input regarding the Municipal Election Ward System

In the current system, you, like all voters in the Township of Havelock-Belmont-Methuen, can vote for the positions of Mayor, Deputy Mayor, and Councillor-at-Large but you can only vote for one (1) position of Ward Councillor. You can vote for either the Township Ward Councillor or the Village Ward Councillor depending on which ward you live in.

Council is considering a change to the Municipal Election Ward System.

Do you want the Municipal Election Ward System to change? *

- ○ Yes
- ○ No

If you have selected "yes" above, please indicate which change you would prefer? *

- ○ Dissolve the ward system completely and allow all voters to vote for the positions of Mayor, Deputy Mayor, and three (3) councillors. In this system, the candidate for Mayor with the most votes, the candidate for Deputy Mayor with the most votes, and the top three councillors with the most votes would be elected.
- ○ Leave the positions as they are currently structured; Mayor, Deputy Mayor, Councillor-at-Large, and two ward councillors (Village Ward and Township Ward) but redraw the boundaries of each ward so that there are the same number of voters in each ward.
- ○ Other suggestions; please specify.

If you have selected "other suggestions" above, please explain below*

Completed paper surveys can be delivered to the Township Office (via in person or mail).
To complete the survey online visit www.hbmtwp.ca or scan the QR Code

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To:	Mayor Martin and Members of Council
From:	Bob Angione, Chief Administrative Officer/Clerk
Meeting Date:	October 15, 2024
Subject:	Request for Proposal #PRF-2024-03 – Construction Management Services for the Community Centre Renovations and Addition

Purpose:

The purpose of this report is to provide Council information collected from the request for proposal #PRF-2024-03 – Construction Management Services for the Community Centre Renovations and Addition and to award the contract to Mortlock Construction Inc. as the lowest bid received.

Recommendation:

That Request for Proposal #PRF-2024-03 for the provision of Construction Management Services for the Community Centre Renovations and Addition be awarded to Mortlock Construction Inc. in the amount of $203,011.20 (including non-recoverable HST) as the lowest bid received.

Background:

The request for proposal for Construction Management Services for the Community Centre Renovations and Addition was placed on the Bids&Tenders platform as well as the Township website and social media (Facebook/Instagram) starting on September 10, 2024.

Proposals were received until October 3, 2024, at 3:00 p.m. local time and were opened in the Council Chamber on October 3, 2024.

In attendance for the opening were Mayor – Jim Martin, CAO/Clerk – Bob Angione, Unity Design Senior Project Lead – Matthew Philip, Unity Design Junior Project Lead – Hannah Taylor, Deputy Treasurer – Kayla Spooner, Executive Assistant – Leah Hutton, and Administrative Assistant – Skylar Soady.

Proposal submissions were requested to include a detailed outline of experience, construction management philosophy, project understanding, project scheduling ability and cost control methodology strategies. Interested proponents were also required to attend a mandatory site meeting which took place September 17, 2024
Proposal submissions were reviewed by Unity Design. Each submission was compliant and met all required criteria.

The following submissions were received;

	Total Excluding HST	**HST**	**Total Including HST**
Mortlock Construction Inc.	$199,500.00	$25,935.00	$225,435.00
Beavermead Construction (1991) Limited	$420,000.00	$54,600.00	$474,600.00

Financial Impact:

The Community Centre Project Management expenditure will be expensed from the Community Centre upgrade capital project approved with the 2022 Capital Budget, with the total cost of $203,011 funded 40% by the Federal Government $81,204.00) and 33.33% by the Provincial Government ($67,664.00) and 26.67% by the Township of Havelock-Belmont-Methuen ($54,143.00).

In Consultation With:

Lionel Towns, Treasurer
Skylar Soady, Administrative Assistant

Attachments:

None.

Respectfully submitted:

Bob Angione

Bob Angione,
Chief Administrative Officer/Clerk

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Mayor Martin and Members of Council

From: Bob Angione, Chief Administrative Officer/Clerk

Meeting Date: October 15, 2024

Subject: Commercial Lease Agreement with the Cordova Mines Recreation Association and the Township of Havelock-Belmont-Methuen Public Library

Purpose:

The purpose of this report is to present for Council consideration a Commercial Lease Agreement with the Cordova Mines Recreation Association and the Township of Havelock-Belmont-Methuen Public Library following comments received from both groups.

Recommendation:

That the Commercial Lease Agreement between The Township of Havelock-Belmont-Methuen, the Cordova Mines Recreation Association and the Township of Havelock-Belmont-Methuen Public Library be approved.

Background:

At the Closed Session Council Meeting held on September 3, 2024 a draft commercial lease agreement between the Township and the Cordova Mines Recreation Association and the Township of Havelock-Belmont-Methuen Public Library was presented for the consideration of Council. Staff was directed to receive feedback from each of the parties to the agreement. Changes reflecting comments received have been included in the revised agreement. These include cleaning of the common areas within 24 hours of an event taking place and restricted access to the kitchen area.

Staff is proposing to repurpose an existing space within the current library area in order to create a kitchenette for the exclusive use of the librarian.

It is proposed that the new agreement expire in the second year of the next term of Council.

Financial Impact:

This updated Commercial Lease Agreement provides for a payment of $150.00 per month by the Cordova Recreation Association. The Township will pay all expenses associated with the building. The Cordova Recreation Association will retain the proceeds of rental events.

In Consultation With:

Josh Storey, Supervisor of Parks, Recreation and Facilities

Attachments:

1. Commercial Lease Agreement between The Township of Havelock-Belmont-Methuen, the Cordova Mines Recreation Association and the Township of Havelock-Belmont-Methuen Public Library.

Respectfully Submitted:

Bob Angione

Bob Angione
Chief Administrative Officer/Clerk

This Commercial Lease Agreement made the 15th day of October, 2024

Between

The Corporation of the Township of Havelock-Belmont-Methuen
(the "Landlord")

OF THE FIRST PART

And

Cordova Mines Recreation Association (the "Tenant")

OF THE SECOND PART

And

The Township of Havelock-Belmont-Methuen Public Library (the “Tenant”)

OF THE THIRD PART

in consideration of the rents, covenants and obligations stipulated herein the Landlord and the Tenant have agreed to enter into a Non-Exclusive Commercial Lease Agreement of the space known as the Cordova Mines Recreation Hall located at 55 Alfred Street East, Havelock, Ontario, K0L 1Z0 (the "Premises").

1. Term and Possession

(1) The Tenants shall have possession of the Premises for the purpose of this agreement for a period of three (3) years, commencing on October 15, 2024 and ending on September 30, 2027.

(2) This agreement may be subject to a review in six (6) months, at the request of any party, after the initial signing of this agreement.

(3) This agreement and all its provisions may be extended for an additional three (3) years commencing October 1, 2027 by mutual agreement of the Landlord and Tenants.

2. Rent

(1) The monthly rental fee for the Cordova Mines Recreation Association due at the first of each month shall be $150.00 (Canadian Funds).

(2) The monthly rental fee for the Havelock-Belmont-Methuen Public Library shall be included in the annual budgetary allocation as approved by Council.

(3) The Landlord and the Tenants agree that it is their mutual intention that this Commercial Lease Agreement shall be a gross Lease Agreement for the Landlord, save where stated otherwise:

(a) and to effect the said intention of the parties the Tenants promise to pay the following expenses related to the Premises as Additional Rent;

i. services supplied, including cleaning services, to the Premises at the request of the Tenant;
ii. Insurance premiums regarding the tenant's contents of the rented Premises;
iii. any tax or duty relating to the provision of goods and/or services to the general public as performed by the tenant;
iv. Repairs and maintenance as a result of any damage caused by the tenants or other parties under the supervision of the tenants.

(b) In furtherance of the parties' intention that this be a gross Lease Agreement, it is the obligation of the Landlord to pay the following expenses related to the Premises:

i. all utilities (including but not limited to the heat and air conditioning, hydro, gas, water charges, internet, etc.);
ii. the maintenance for the exterior of the building (including snow removal, grounds maintenance, lawn cutting, etc.);
iii. cleaning services for Township-organized events and services;
iv. in the event that property taxes become eligible regarding the Commercial Lease Agreement Premises, any and all property taxes;
v. the insurance premiums relating to the fire insurance covering the Commercial Lease Agreement Premises;
vi. repairs and maintenance to the roof, exterior walls, and interior of the building.
vii. heating, air conditioning systems and any other mechanical, electrical devices, appliances currently installed in the Premises.

(c) The Tenants hereby agree to indemnify and protect the Landlord from any liability accruing to the Landlord in respect of the expenses payable by the Tenants as provided herein.

(d) The Party of the Second Part being the Cordova Mines Recreation Association shall provide an annual report in January of every year to Council in Open Session providing a summary of events and finances of the previous year.

(c) The Party of the Third Part being the Havelock-Belmont-Methuen Public Library shall provide an annual report in January of every year to Council in Open Session providing a summary of events and finances of the previous year.

3. Use

(1) The Tenants shall not permit or cause to permit anything done on the Premises which may:

(a) constitute a nuisance;

(b) cause damage to the Premises;

(c) cause injury or annoyance to occupants of neighbouring Premises;

(d) make void or voidable any insurance upon the Premises; or

(e) constitute a breach of any by-law, statute, order or regulation of any municipal, provincial or other competent authority relating to the Premises.

(2) The Landlord shall have full control of the Cordova Mines Recreation Hall building in its entirety.

(3) The Tenants shall have first preference, after the Landlord, to the dates and times they wish to occupy the Premises.

(4) The Landlord shall have access to all areas of the building.

(5) The Tenants shall have exclusive access to their respective usage areas.

(6) The Tenants shall both have access to common areas such as the vestibule and the washroom.

(7) The kitchen shall remain locked at all times and shall be accessible only to Township staff and any member of the Cordova Mines Recreation Association who is in possession of a valid Food Handler Certificate as recognized by Peterborough Public Health and the Province of Ontario. Entry will be gained via key access.

(8) Wifi access is to remain available to the entirety of the building at all times and is to be shut off only by the Landlord when required.

(9) Disputes between the Tenants pertaining to space usage and building access shall be resolved by mutual agreement of all parties at a meeting to be convened by the Landlord. Failure of the Tenants to reach a mutual agreement shall result in a binding decision of the Landlord. The decision of the Landlord shall be binding on all parties.

(10) There shall be a shared calendar for the usage of the Premises between the Landlord and the Tenants.

(11) The Landlord, through the shared calendar, will book events when required to occupy the Premises.

(12) Other community groups in the Township shall be permitted to rent the Premises and will be encouraged to do so providing that dates do not conflict with events previously booked by the Landlord or Tenants.

(13) The Tenant of the Second Part shall create a fee schedule pertaining to all rentals. This fee schedule shall be shared with the Landlord.

(14) The Tenant of the Second Part will be responsible for booking and managing events within the Premises and is entitled to any proceeds as a result of such events. This includes the supervision and control of all persons in attendance at the function and to restrict such persons to the Premises.

(15) The Tenants shall abide by the capacities for persons posted or made known for the Premises.

(16) The Tenant of the Second Part will manage the Liquor Licence and retain all funds from bar sales. For a licenced function, the Tenant shall obtain a proper licence from the Liquor Control Board of Ontario (LCBO), to provide and deliver all liquor and equipment necessary for the sale and consumption of liquor, to supervise the sale and consumption of liquor, and to enforce and abide by all regulations governing the sale and consumption of liquor. Following a licenced function, the Tenant shall lock all remaining liquor and equipment in suitable storage areas and bear all associated costs.

(17) The Tenant of the Second Part is solely responsible for obtaining a Catering Endorsement for any sale and service of alcohol at an event that is held in an unlicensed area as per the regulations from the Alcohol and Gaming Commission of Ontario (AGCO).

(18) The Landlord is required to clean the Premises following events held by the Landlord.

(19) The Tenants are required to clean the Premises following events held or organized by the Tenants within twenty-four (24) hours of the event taking place.

(20) The Tenants shall return the Premises back to the general conditions of cleanliness and repair in which it was found. Specifically, it is expected that all refuse will be placed in garbage bags or receptacles; that the kitchen countertops and sinks will be left clean and that the tables and chairs will be repositioned as found or as otherwise directed by the Landlord.

(21) If the Landlord wishes to install an additional security system a unique security access code or key fob will be provided to the Tenants.

4. Keys

(1) The Tenants shall be provided with restricted keys to the Premises. Keys will be assigned to individuals as identified by the Tenants. A list containing the names of all key holders will be provided by the Tenants to the Landlord. This list will be reviewed annually in the month of January.

(2) The keys provided to the Tenants shall under no circumstances be reproduced unless authorized by the Landlord.

(3) The Tenants shall not assign the keys to any third party without the knowledge and written consent of the Landlord.

5. Repairs and Maintenance

(1) The Tenants covenant that during the term of this Commercial Lease Agreement and any renewal thereof the Tenants shall keep in good condition the Premises. All alterations, additions or repairs to the premises (land or building) are to be completed by the Landlord. The Tenants may make alterations, additions or repairs only with the approval of the landlord.

6. Insurance

(1) The Tenants covenant to hold the Landlord harmless in the event of an incident and keep the Landlord indemnified against all claims and demands whatsoever by any person, whether in respect of damage to person or property, arising out of or occasioned by the maintenance, use or occupancy of the Premises or the subletting or assignment of same or any part thereof, and the Tenants further covenant to indemnify the Landlord with respect to any encumbrance on or damage to the Premises occasioned by or arising from the act, default, or negligence of the Tenants, its officers, agents, servants, employees, contractors, customers, invitees or licensees and the Tenants agree that the foregoing indemnity shall survive the termination of this Commercial Lease Agreement notwithstanding any provisions of this Commercial Lease Agreement to the contrary.

(2) The Tenants shall carry insurance in their own name insuring against the risk of damage to the Tenant’s property within the Premises caused by fire or other perils and the policy shall provide for coverage on a replacement cost basis to protect the Tenant's contents.

(3) The Tenants shall carry public liability and property damage insurance in which the Landlord shall be named as a co-insured, in the amount of Five Million ($5,000,000.00) exclusive and

cost against loss or damage resulting from bodily injury to death of one or more persons and loss of or damage to property arising in connection with the function as a result of any act or omission of the Tenant names herein, their members, officers, employees, agents or contractors. The policy shall include a cross-liability endorsement;

i. A Certificate of Insurance, naming the Township of Havelock-Belmont- Methuen as additional insured, shall be provided to the Township of Havelock-Belmont-Methuen annually.

7. Termination Upon Notice and at End of Term

(1) Should the Landlord desire to renovate the Premises for major repairs then the Landlord shall work with the Tenants in an attempt to minimize disruption of the Tenants' operations, with all parties acting reasonably.

(2) If the Premises are expropriated or condemned by any competent authority:

(a) the Landlord shall have the right to terminate this Commercial Lease Agreement by giving one hundred and eighty (180) clear days notice in writing to the Tenants.

(3) If the Tenants remain in possession of the Premises after termination of this Commercial Lease Agreement as aforesaid and if the Landlord then accepts rent for the Premises from the Tenants, it is agreed that such overholding by the Tenants and acceptance of Rent by the Landlord shall create a monthly tenancy only but the tenancy shall remain subject to all the terms and conditions of this Commercial Lease Agreement except those regarding the Term.

(4) At any time upon the dissolution of the Cordova Mines Recreation Association or the Cordova Branch of the Havelock Public Library, written notification shall be provided to the Landlord, and termination of this Commercial Lease Agreement and all responsibilities shall cease 3 months following such notice unless otherwise agreed by the parties.

(5) Notwithstanding subsections (1) to (4) as set out above, if any party wishes to terminate this Lease Agreement, then it shall have the right to terminate this Commercial Lease Agreement upon giving the other party at least six (6) months written notice of its desire to do so.

8. Notice

(1) Any notice required or permitted to be given by one party to the other pursuant to the terms of this Commercial Lease Agreement may be given

To the Landlord, to the Attention of the Clerk, at:

1 Ottawa Street East, P.O. Box 10

Havelock, Ontario
K0L 1Z0

To the Tenants at the Premises or at:

Cordova Mines Recreation Association
55 Alfred Street East
Havelock, ON
K0L 1Z0

The Township of Havelock-Belmont-Methuen Public Library (Cordova Branch)
55 Alfred Street East
Havelock, ON
K0L 1Z0

(2) The above addresses may be changed at any time by giving ten (10) days written notice.

(3) Any notice given by one party to the other in accordance with the provisions of this Commercial Lease Agreement shall be deemed conclusively to have been received on the date delivered if the notice is served personally or one hundred and twenty (120) hours after mailing, if the notice is mailed.

9. Health Protocols

The Tenants are expected to operate the Premises in accordance with all ongoing Public Health protocols and regulations as well as in accordance with all Township rules and regulations for the facility.

10. Interpretation

(1) The words importing the singular number only shall include the plural, and vice versa, and words importing the masculine gender shall include the feminine gender, and words importing persons shall include firms and corporations and vice versa.

(2) unless the context otherwise requires, the word "Landlord" and the word "Tenant" wherever used herein shall be construed to include the executors, administrators, successors and assigns of the Landlord and Tenant, respectively.

In Witness of the foregoing covenants the Landlord and the Tenant have executed this Facility Rental Agreement.

Landlord Per:

_____
Jim Martin, Mayor

_____
Robert V. Angione, CAO/Clerk

We have the authority to bind the Corporation

Dated: _____

Tenant(s) Per:

_____
For Cordova Mines Recreation Association

Name:
Title:

_____
For Cordova Mines Recreation Association

Name:
Title:

Dated: _____

_____
For Township of Havelock-Belmont-Methuen
Public Library (Cordova Branch)

Name:
Title:

_____
For Township of Havelock-Belmont-Methuen
Public Library (Cordova Branch)

Name:
Title:

Dated: _____

TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

To: Mayor Martin and Members of Council

From: Bob Angione, Chief Administrative Officer/Clerk

Meeting Date: October 15, 2024

Subject: Norwood Medical Centre

Purpose:

The purpose of this report is to present options pertaining to the Norwood Medical Centre proposal.

Recommendation:

That Council choose between one of the following options pertaining to the Norwood Medical Centre proposal:

Option 1

That the Township of Asphodel-Norwood be informed that HBM will not be paying to roster patients at the Norwood Medical Centre.

Option 2

Whereas 78% of respondents to the recent budget survey expressed that it is either “Important” or “Very Important” to use municipal taxation funds to support doctor recruitment; and

Whereas the Township of Havelock-Belmont-Methuen aims to establish a Medical Centre with full-time doctors stationed in HBM; and

Whereas the proceeds from the sale of the previous medical centre in the amount of $535,391.00 have been set aside to assist with doctor recruitment and the establishment of a medical centre in HBM; and

Whereas the Norwood Medical Centre proposal presents, as an interim step to establishing a medical centre in HBM, an opportunity to roster HBM residents who currently do not have a doctor; and

Whereas the most recent total of unrostered citizens in HBM is 721 as per the presentation of the Healthcare Advancement Coordinator received at the Open Session Council Meeting of August 15, 2024; and

Whereas the fee requested by Norwood is $150.00 per patient;

Be It Resolved That the a tax expenditure of $108,150.00 representing approximately a 1.39% tax increase be discussed during the 2025 budget deliberations.

Background:

During the Community Budget Survey earlier this year, 78% of respondents expressed that it is either “Important” or “Very Important” to use municipal taxation funds to support doctor recruitment.

At the Open Session Regular Council Meeting of June 4, 2024 Council received a delegation from the Mayor and CAO of the Township of Asphodel-Norwood pertaining to the Norwood Medical Centre. During the delegation, the proposal to roster HBM patients at the Norwood Medical Centre was presented. A fee of $150.00 per patient has been requested.

At the Open Session Regular Council Meeting held on August 15, 2024 the Healthcare Advancement Coordinator noted, during her presentation, that 721 HBM residents are currently not rostered with a doctor as per the County Your Health Matters statistics. Participating in the Norwood Medical Centre plan will result in a tax expenditure of $108,150.00 or a property tax rate increase of approximately 1.39% in 2025.

Financial Impact:

There is no financial impact to either referring the Norwood Medical Centre discussion to the 2025 budget deliberations or refusing to participate in the proposal.

In Consultation With:

Lionel Towns, Treasurer

Attachments:

None.

Respectfully Submitted:

Bob Angione

Bob Angione
Chief Administrative Officer/Clerk

From: [redacted]
To: Bob Angione
Subject: RE: Road Allowance Closure 367 FR 82D Lake Kasshabog
Date: September 23, 2024 11:45:49 AM
Attachments: report-7.pdf

This attached location report may help, thank you.

From: [redacted]
Sent: Monday, September 23, 2024 11:20 AM
To: 'bangione@hbmtwp.ca' <bangione@hbmtwp.ca>
Subject: Road Allowance Closure 367 FR 82D Lake Kasshabog

Dear Mr. Angione, I am writing on behalf of my wife, Carol Simard, who is the new owner of the 2 lots known as 367 and 369 FR 82D Northshore Rd as of Sept 13 2024.

It was suggested by Sonia Aaltonen, that we request a “stop up and closure” of the road allowance between the 2 properties, following which we would like to proceed with a purchase of the said land.

Sincerely, Ken & Carol Simard

571 FR 82, Havelock, ON K0L1Z0

[redacted]

Generated on July 21, 2024

Address Not Available

PIN 282500318

Basic Client Report

This report was prepared by:
Ken Pipher
Cell: 7059339191
ken@kenpipher.ca
TREB
Ontario, Canada

Property Details - PIN 282500318

PIN:	282500318
Land Registry Office:	PETERBOROUGH (45)
Land Registry Status:	Active
Registration Type:	Certified (Land Titles)
Ownership Type:	Freehold

Area:	23002.45 sq.ft (0.528
Perimeter:	836.61 ft.
Measurements:	29.54ft. x 338.37ft. x 23.92ft. x 20.63ft. x 37.61ft. x .94ft. x 343.19ft. x 2.31ft. x 40.53ft.
Legal Description:	RDAL BTN CON 7 & CON 8 METHUEN ABUTTING LT 15 CON 7; HAVELOCK-BELMONT-METHUEN EXCEPT FORFEITED MINING RIGHTS, IF ANY

Aerial View Of Property

Street View

Assessment Information

Sales History

Terms and Conditions

Currency of Information. Data contained in the Geowarehouse reports are not maintained real-time. Data contained in reports, other than the Parcel Register, may be out of date ten business days or more from data contained in POLARIS.
Completeness of the Sales History Report: Some Sales History Reports may be incomplete due to the amount of data collected during POLARIS title automation. Subject properties may also show nominal consideration or sales price (e.g. $2) in cases such as transfers between spouses or in tax exempt transfers.

The Property Information Services, reports and information are provided "as is" and your use is subject to the applicable Legal Terms and Conditions. Some information obtained from the Land Registry Information Services is not the official government record and will not reflect the current status of interests in land. Use of personal information contained herein shall relate directly to the purpose for which the data appears in land registry records and is subject to all applicable privacy legislation in respect of personal information. Such information shall not be used for marketing to a named individual.

From: Hart Webb
To: Bob Angione
Subject: Fw: STC Bus looking for somewhere to park in Havelock
Date: October 8, 2024 9:50:14 AM

Get Outlook for Android

From: Annette Trotman [redacted]
Sent: Thursday, October 3, 2024 11:00:45 PM
To: Hart Webb <HWebb@hbmtwp.ca>
Subject: STC Bus looking for somewhere to park in Havelock

Hello Council Members;

;

I'm not sure if you can help me or not. I drive a school bus for STC, in and around Havelock The location I was parking my bus at last year is no longer available. I am currently parking behind a local store. Once winter comes their parking will decrease and I will no longer be able to park there. I am currently looking for a new spot to park the bus in (or around Havelock). I was thinking of the parking lot at the end of County Rd 50 (almost at) Hwy 7. Or anywhere you could possibly think of.

Thanking you in advance for your time.

Annette Trotman
[redacted]

(http://www.peterboroughpublichealth.ca)

Search The Site

September 2024 – Board of Health Summary

(https://www.peterboroughpublichealth.ca/september-2024-board-of-health-summary/)

Written by Comms Team (), September 11, 2024

September 4, 2024

Welcome Samantha!

Samantha Roan was introduced as the new Manager, Indigenous Health. In this role, Samantha will help lead Peterborough's Indigenous engagement activities and contribute to the Indigenous reconciliation, decolonization and indigenization processes.

Q2 Report

Q2 financial and program reports were shared with the Board. Highlights from the quarter include:

- Staff participated in the Ontario Exercise on Extreme Heat in collaboration with the City of Peterborough. This included scenario planning for future extreme heat emergencies and allowed staff to identify opportunities for better collaboration with partners to ensure the safety of residents during such an event.
- Funding from the Public Health Agency of Canada was received to support efforts in youth substance use prevention.
- Guarding Minds @ Work committee surveyed all staff to assess psychological safety and well-being in the workplace and have begun developing an action plan to align with the survey results. These efforts support priorities identified in PPH's Strategic Plan.
- Merger Business Case was submitted to the Ministry of Health.
- PPH submitted feedback to the Ministry of Health on the Ontario Public Health Standards Review.

Support for "An Act to Develop a national Framework for a Guaranteed Livable Income"

The Board endorsed and communicated support for a correspondence from Middlesex London Health Unit (MLHU) that supports Bills S-233 and C-223, *"An Act to Develop a national Framework for a Guaranteed Livable Income."* Locally, 16.2% of Peterborough households were considered low income in 2022 and 1 in 5 considered food insecure. Guaranteed Basic Income could provide much needed financial assistance to over 20,000 members of the Peterborough community and has the potential to reduce health inequities by improving the social determinants of health.

NEWS ARCHIVES

August 2024 (/archives?yr=2024&mn=8)

July 2024 (/archives?yr=2024&mn=7)

June 2024 (/archives?yr=2024&mn=6)

May 2024 (/archives?yr=2024&mn=5)

April 2024 (/archives?yr=2024&mn=4)

March 2024 (/archives?yr=2024&mn=3)

February 2024 (/archives?yr=2024&mn=2)

January 2024 (/archives?yr=2024&mn=1)

December 2023 (/archives?yr=2023&mn=12)

November 2023 (/archives?yr=2023&mn=11)

October 2023 (/archives?yr=2023&mn=10)

August 2023 (/archives?yr=2023&mn=8)

July 2023 (/archives?yr=2023&mn=7)

June 2023 (/archives?yr=2023&mn=6)

May 2023 (/archives?yr=2023&mn=5)

County Official Plan Modifications

Meeting Minutes – September 12, 2024
Technical Advisory Committee
OP Modification Meeting No. 10

Location: Committee Room, County Court House

Attendees:	Sonia Aaltonen (HBM), Matt Wilkinson (CM), Karen Ellis (CM), Shannon Herman (AN), Christina Coulter (DD), Derek Bertram (TL), Per Lundberg (SEL), Arya Hejazi (County), Iain Mudd (County), Keziah Holden (County)
Regrets:	Emily Baker (OSM), Ed Whitmore (AN), Emily Fitzgerald (NK), Darryl Tighe (NK), Madhupreeta Muralidhar (DD Student), Tom Cowie (Hiawatha FN), Kaitlin Hill (Curve Lake FN), Adele Arbour (TL), Barb Waldron (TL), Bryan Weir (County)

NOTE: Modification Meetings are being held to draft modifications to the new Official Plan to be consistent with the draft Provincial Planning Statement and as directed by County Council through report PPW 2023-17, and to incorporate Official Plan Amendments approved since the time of adoption of the new Official Plan.

Meeting started at 2:00pm

Items and issues discussed at the meeting were as follows:

Update on New County Official Plan

- County received a letter from Minister Calandra (Ministry of Municipal Affairs and Housing) in relation to the new County Official Plan.
    - Requesting the County to repeal the adopting by-law pursuant to Section 21(1) of the Planning Act so that the OP is no longer before the Minister for a decision.
    - Letter is currently on the September 18th County Council agenda to be received with a recommendation to be referred back to staff for a report.
- TAC discussed options that could be available to Council. It is noted that the information provided in the letter was new to everyone, and that other alternatives may present themselves after staff have had time to consider the request further. Options discussed were as follows:
    - Repeal as requested and the OP exercise begins again in accordance with the Planning Act (non-appealable). Have the ability to make changes not only to reflect new PPS, but also any other changes Council wishes to see.
        - Could specifically limit changes to be made in accordance with PPS, 2024 only.

        - Time frame unclear, but would be significant given the requirement to go back out to public with legislated time frames associated with that process.
        - Requirements of Planning Act will be required to be adhered to (i.e. public meeting, open house, resolution from each Township and adoption by County Council etc.).
        - Uncertain whether the Minister would still need to be provided a copy of the draft OP in advance of the public meeting in accordance with Section 17(17.1) of the Planning Act. County Staff to discuss with MMAH.
    - Don't repeal By-law and request Minister to approve the OP in its current form as adopted and take the modification work that has been done to develop OPA #1 to the new County OP.
        - Allows a certain policy framework to be in place in a shorter amount of time but would be bound by OP policy (developed to conform to the Growth Plan) which is more restrictive than what will be in place with new PPS.
        - The OPA would be required to go through the regular amendment and public consultation process, and the OPA could be appealed.
        - Would allow lower-tier municipalities to move forward with comprehensive reviews to update their zoning by-laws.
        - Discussion over Settlement Area boundaries, agricultural land uses (i.e. Prime Agricultural lands), and environmental restrictions.
    - Repeal the adopting by-law but carry on with the use of the current in-effect OP.
        - Current OP policies are outdated in many aspects, though they are fairly consistent with the new PPS.
        - Can format the current OP without an Amendment (adding section numbers etc. for ease of reading) but would need an OPA to update the policies that are out of date (including any Township specific policies) and any that may conflict with the new PPS.
        - This option would be wasteful of time and effort spent developing the new OP.
- Discussion over the cost of these options. To utilize the new OP, repealing may be the more cost-effective route, but still requires further exploration.
- If a repeal moves forward, it will have to go through the lower-tier municipalities and support from the Townships will be required via resolutions.
- Pros/Cons of each approach will eventually need to be crafted and presented to County Council.
- Future TAC meetings are tentative, pending direction from County Council

Aird & Berlis Webinar – New Provincial Planning Statement

- TAC Members watched a live webinar hosted by Aird and Berlis, reviewing notable changes in the new Provincial Planning Statement (2024) which comes into effect on October 20th. Webinar started at 3:00pm.

Meeting adjourned at 4:00pm

From: Clarke, Donna Lynn (MTCS) <DonnaLynn.Clarke@ontario.ca>
Sent: October 8, 2024 1:59 PM
To: Clarke, Donna Lynn (MTCS) <DonnaLynn.Clarke@ontario.ca>
Subject: Ontario Volunteer Service Awards - Nominations Due November 15

Greetings to all!

The **Ontario Volunteer Service Award** nomination deadline is **November 15, 2024**.

The Ontario Volunteer Service Award is a provincial government program that helps local community organizations recognize the contributions of their volunteers. Each day thousands of Ontarians of all ages donate their time and talent to thousands of community organizations. By submitting a nomination, you can help ensure that volunteers receive the recognition they deserve.

For more information on the volunteer awards in Ontario please visit Ontario.ca or refer to the attached Honours and Awards calendar.

As always, I am happy to discuss further.

With regards,

Donna

Donna Lynn Clarke

Regional Development Advisor | Regional Services Branch

Ministry of Tourism, Culture and Gaming | Ontario Public Service

705-875-2031 | DonnaLynn.Clarke@ontario.ca

Ontario

Taking pride in strengthening Ontario, its places and its people

Somebody you know deserves an award.

Order of Ontario
The province's highest civilian honour for outstanding individual excellence in any field – for achievements that have shaped and continue to shape – the province's history and place in Canada.

Lincoln M. Alexander Award
Recognizes young people who have demonstrated strong leadership in eliminating racial discrimination.

James Bartleman Indigenous Youth Creative Writing Awards
Recognize Indigenous students for their creative writing talent.

David C. Onley Award for Leadership in Accessibility
Recognizes Ontarians who have gone above and beyond in improving accessibility for people with disabilities.

Hilary M. Weston Scholarship
A scholarship for graduate-level social work students in the area of mental health.

Ontario Senior of the Year Award
An outstanding senior who, after age 65, has enriched the social, cultural or civic life of the community and is recognized by the local municipality.

Ontario Senior Achievement Award
Seniors are recognized for their significant contributions to their communities after age 65.

Lieutenant Governor's Community Volunteer Award for Students
Exemplary volunteers are recognized among graduating students in Ontario's secondary schools.

Ontario Medal for Young Volunteers
The highest honour a young person between the ages of 15 and 24 years can achieve in recognition of their volunteer contributions to our province.

Ontario Volunteer Service Awards
Individuals are recognized for 5 to 65+ years of continuous service in a given organization and youth for at least 2 years of volunteer service.

June Callwood Outstanding Achievement Award for Voluntarism
Individuals and groups are recognized for superlative volunteer contributions to their communities and to the province.

Ontario Medal for Paramedic Bravery
Members of Ontario's paramedic services are honoured for individual acts of outstanding courage.

Ontario Medal for Firefighter Bravery
Members of Ontario's fire services are honoured for individual acts of outstanding courage.

Ontario Medal for Police Bravery
Members of Ontario's police services are honoured for individual acts of outstanding courage.

Ontario gives out thousands of honours and awards every year to Ontarians.

Nominating someone is easy.
Visit Ontario.ca/honoursandawards

Ontario

(Perkin)

THE CORPORATION of the
TOWNSHIP OF HAVELOCK-BELMONT-METHUEN
P.O. Box 10, 1 Ottawa Street East
Havelock, ON K0L 1Z0

FORM 1
THE PLANNING ACT, R.S.O., 1990, as amended

NOTICE OF PASSING OF A ZONING BY-LAW TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

TAKE NOTICE that the Council of the Corporation of the Township of Havelock-Belmont-Methuen passed By-law No. 2024-073 on the 15th day of October 2024 under Section 34 of the Planning Act, R.S.O., 1990.

AND TAKE NOTICE that any person or agency may appeal to the Ontario Land Tribunal in respect of the By-law by filing with the Municipal Clerk of the Township of Havelock-Belmont-Methuen not later than the 4th day of November, 2024 a notice of appeal setting out the reasons for the objection to the By-law and reasons in support of the objection to the By-law. The notice of appeal must be accompanied by a certified cheque or money order payable to the Minister of Finance in the amount of $1,100.00. The Tribunal may reduce the appeal fees to $400.00 for eligible private citizens and community groups. A request for a reduced fee must be made at the time of filing the appeal. For more information regarding fees, please visit the Ontario Land Tribunal website (olt.gov.on.ca).

Prior to the passing of the By-law, Council received no oral and/or written submissions which resulted in revisions to the By-law.

Only individuals, corporations and public bodies may appeal a Zoning By-law to the Ontario Land Tribunal. A notice of appeal may not be filed by an unincorporated association or group. However, a notice of appeal may be filed in the name of an individual who is a member of the association or the group on its behalf.

No person or public body shall be added as a party to the hearing of the appeal unless, before the by-law was passed, the person or public body made oral submissions at a public meeting or written submissions to the Council or, in the opinion of the Tribunal, there are reasonable grounds to add the person or public body as a party.

Our records, at this time, indicate that the land which is subject of this Application for the Zone Amendment is not the subject of any other application under The *Planning Act*.

An explanation of the purpose and effect of the By-law, describing the lands to which the By-law applies, and a Key Map showing the location of the lands to which the By-law applies are attached. The complete By-law is available for inspection in the municipal office during regular office hours.

Dated at the Township of Havelock-Belmont-Methuen this 15th day of October 2024.

Mr. Robert Angione, M.P.A., B.Admin
Municipal Clerk
Township of Havelock-Belmont-Methuen
P.O. Box 10, 1 Ottawa Street East
Havelock, ON K0L 1Z0
(705) 778-2308
(705) 778-5248 (fax)

EXPLANATORY NOTE

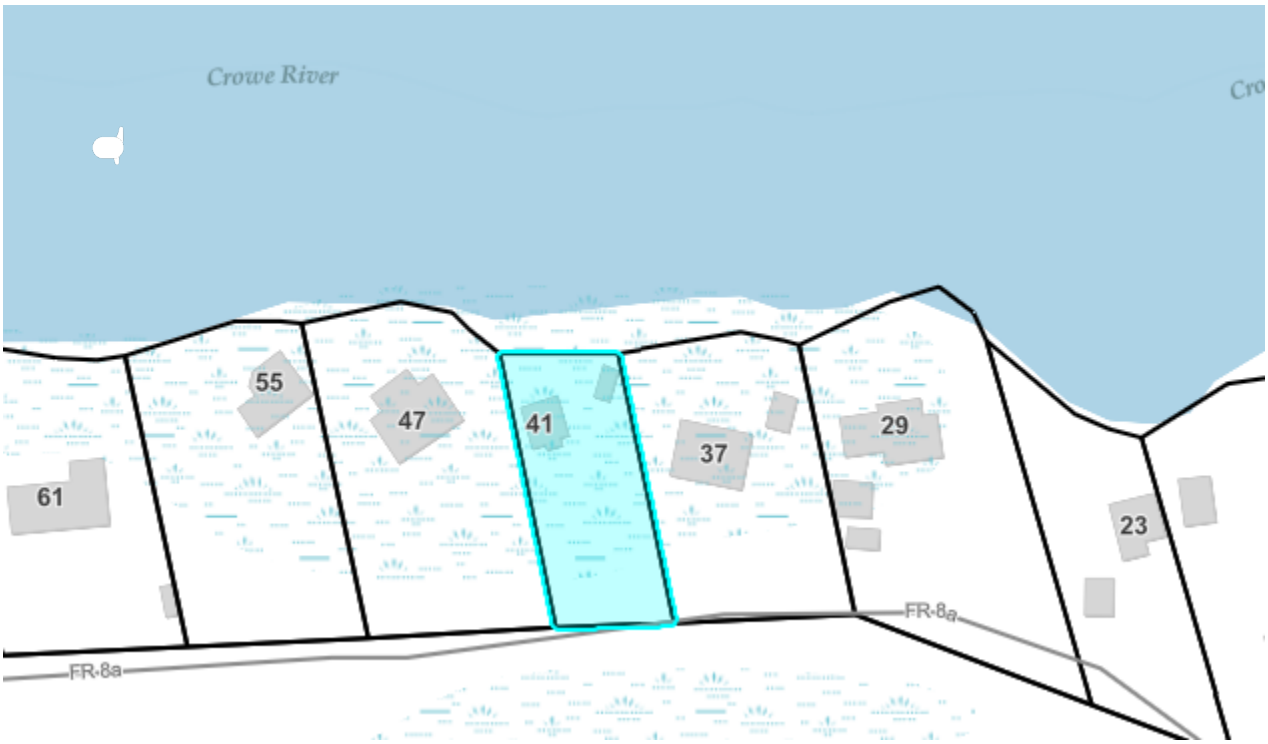
1. By-law No. 2024-073 has the following purpose and effect.

   The Township of Havelock-Belmont-Methuen is in receipt of an application for a Zoning By-law Amendment to change the zoning of certain lands being located in Lot 15, Concession 3, in the Belmont Ward. Assessment Roll No. 1531-010-003-16700.

   The subject lands are currently zoned “Seasonal Residential (SR) Zone”.

   The application proposes to rezone the subject lands to ‘Special District 286 (S.D. 286)’ in order to permit the redevelopment of a seasonal dwelling and a sleeping cabin.

2. A key map showing the location of the lands to which By-law No. 2024-073 applies is provided below.



THE CORPORATION OF THE
TOWNSHIP OF HAVELOCK-BELMONT-METHUEN

BY-LAW NO. 2024-073

BEING A BY-LAW TO AMEND BY-LAW NO. 1995-42, AS AMENDED, OTHERWISE KNOWN AS THE "THE TOWNSHIP OF HAVELOCK-BELMONT-METHUEN COMPREHENSIVE ZONING BY-LAW".

WHEREAS the Corporation of the Township of Havelock-Belmont-Methuen is in receipt of an application to amend By-law No. 1995-42, as amended.

AND WHEREAS the Council of the Corporation of the Township of Havelock-Belmont-Methuen reviewed the rezoning application and now deems it advisable to further amend By-law No. 1995-42, as amended.

NOW THEREFORE, the Council of the Corporation of the Township of Havelock-Belmont-Methuen hereby enacts as follows:

"1. That Schedule 'A2' of By-law No. 1995-42, as amended, is hereby further amended by changing the zone category of certain lands located in Lot 15, Concession 3, in the Belmont Ward in the Township of Havelock-Belmont-Methuen from 'Seasonal Residential (SR) Zone' to ''Special District 286 (S.D. 286) Zone' as illustrated on Schedule 'A' attached hereto and forming part of this by-law.

2. That Section 4.46 (Special Districts) of By-law No. 1995-42, as amended, is hereby further amended with the addition of a new sub-section, namely 4.46.285, which shall read as follows:

4.46.285 Special District 286 (S.D. 286)

No person shall within any Special District 286 (S.D. 286) Zone use any land, or erect, alter or use any building or structure except in accordance with the following provisions:

4.46.285.1 Permitted Uses

4.46.285.1.1 One (1) Single Detached Vacation Dwelling
4.46.285.1.2 One (1) Sleeping Cabin

4.46.285.2 Regulations for Uses Permitted in Section 4.46.285.1

All provisions and regulations of Section 10 of By-law No. 1995-42, as amended, as they apply to the 'Seasonal Residential (SR) Zone', shall also apply to any 'Special District 286 (S.D. 286) Zone'; save and except that any Single Detached Vacation Dwelling shall comply with the following:

4.46.285.3 Special Setback Provisions

Notwithstanding any other provisions of Section 4.37 of By-law No. 1995-42, to the contrary, the following High Water Mark setbacks

shall apply within the boundary of any Special District 286 (S.D. 286) Zone:

a) Minimum Setback
from High Water Mark to Dwelling Unit: 20.6 m (67.5 feet)

b) Minimum Setback
from High Water Mark to Deck attached
to Dwelling Unit: 18.2 m (59.7 feet)

Notwithstanding any other provisions of Section 10 of By-law No. 1995-42, to the contrary, the following front yard setbacks shall apply within the boundary of any Special District 286 (S.D. 286) Zone:

c) Minimum Setback
from Front Yard Lot Line to Dwelling Unit: 20.6 m (67.5 feet)

d) Minimum Setback
from Front Yard Lot Line to Deck attached
to Dwelling Unit: 18.2 m (59.7 feet)

4.46.285.4 Regulations for Uses Permitted in Section 4.46.285.1

All provisions and regulations of Section 4.40 of By-law No. 1995-42, as amended, as they apply to Sleeping Cabins, shall also apply to any 'Special District 286 (S.D. 286) Zone'; save and except that any Sleeping Cabin shall comply with the following:

a) Minimum Setback from a Side Lot Line
to a Sleeping Cabin: 3.3 m (10.8 feet)

If no notice of objection is filed with the Municipal Clerk within the time provided, this By-law shall become effective on the date of passing.

If a notice of objection is filed with the Municipal Clerk, this By-law shall become effective on the date of passing hereof subject to the disposition of any appeals.

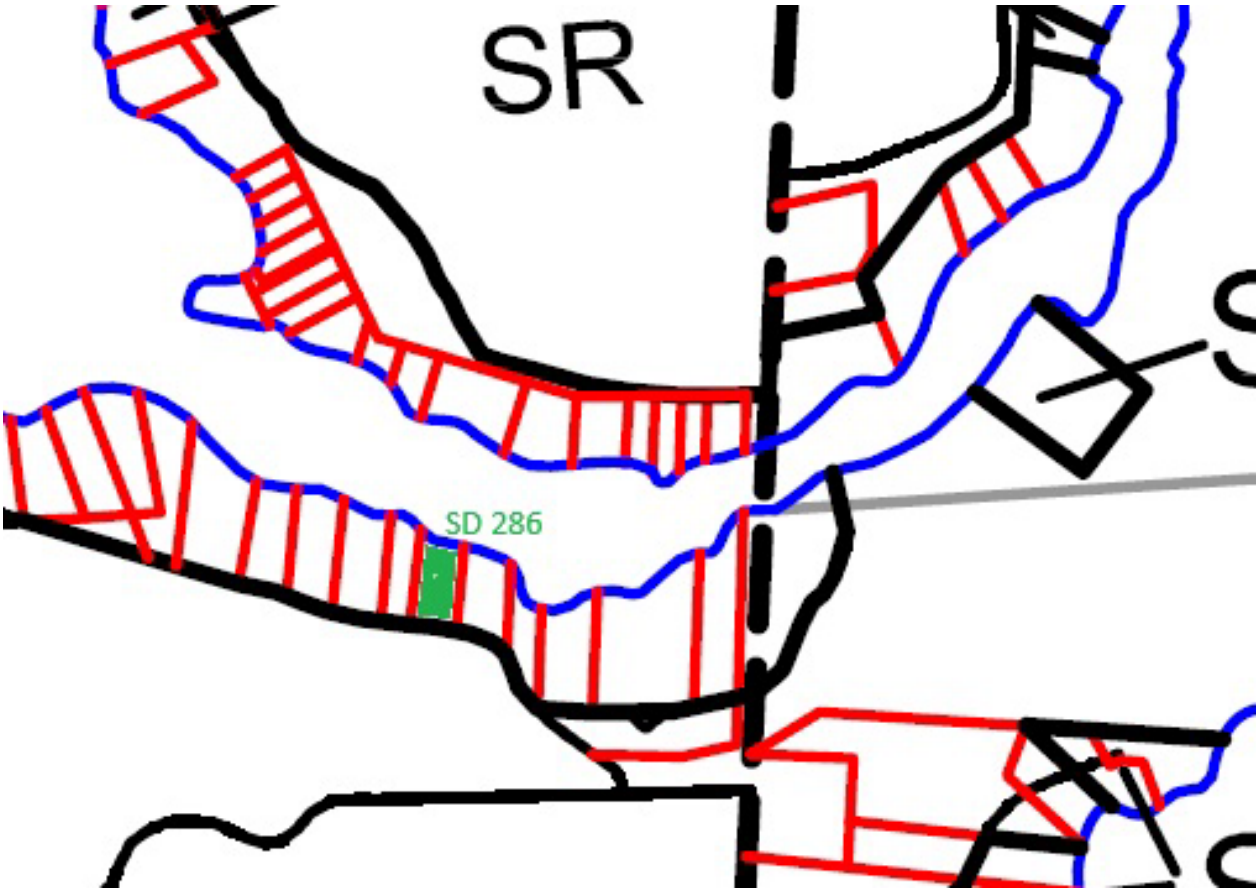
Read a **FIRST**, **SECOND**, and **THIRD TIME** and **FINALLY** passed this 15th day of October 2024 and given By-law No. 2024-073.

MAYOR **MUNICIPAL CLERK**

****

I, Robert Angione, Clerk of the Corporation of the Township of Havelock-Belmont-Methuen, do hereby certify that the foregoing is a true copy of By-law No. 2024-073 passed by Council of the said Corporation on the 15th day of October 2024.

MUNICIPAL CLERK



TOWNSHIP OF HAVELOCK · BELMONT · METHUEN INC. 1998	**THIS IS SCHEDULE "A" TO BY-LAW NO._____ PASSED THIS DAY OF_____, 2024.** **SIGNATURES OF SIGNED OFFICERS:** **_____MAYOR** **_____CLERK**	**TOWNSHIP OF** **Havelock-Belmont-Methuen (Methuen Ward)**

The Corporation of the
Township of Havelock-Belmont-Methuen

By-law Number 2024 – 074

Being a By-law to dissolve the Ward System of Electoral Representation for the Corporation of the Township of Havelock-Belmont-Methuen and Institute an At-Large System of Electoral Representation

Whereas *Section 222(1) the Municipal Act, S.O. 2001, c.25, as amended,* provides that a municipality may pass a by-law to dissolve existing wards*;* and

Whereas the issue of electoral reform was discussed by candidates during the 2022 municipal election campaign and Council is desirous of dissolving the existing wards; and

Whereas a public consultation process was conducted that included a survey and two public meetings; and

Whereas the results of that survey broke down as 446 (69%) in favour of a change and 203 (31%) opposed to a change; and

Whereas two Public Meetings were held on July 16, 2024 to receive verbal input from the residents of the Township; one in the morning and one in the evening; and

Whereas six (6) verbal presentations and one (1) written submission were received at the Public Meetings expressing support for abolishing the ward system and replacing it with an at-large system and three (3) verbal presentations were received in opposition to changing the current ward system; and

Whereas the principle of effective representation for the entire Township supports a change to the at-large system of electing all Members of Council whereby voters can be equally represented and the relative parity of voting power is achieved by having all eligible electors voting for all positions of Council; and

Whereas at the Open Session Council Meeting held on August 15, 2024, the Council of the Corporation of the Township of Havelock-Belmont-Methuen passed Resolution Number R-421-24 to eliminate the ward system and and create an at-large system whereby the roles of Mayor, Deputy Mayor, and three Councillor positions are all elected at-large;

Now therefore the Council of the Corporation of the Township of Havelock-Belmont-Methuen hereby enacts as follows:

1. That Electoral Ward 1 and Electoral Ward 2 are hereby dissolved in their entirety.

2. That the Ward System of Electoral Representation in the Township of Havelock-Belmont-Methuen is hereby replaced by an At-Large Electoral System for the entire municipality whereby the roles of Mayor, Deputy Mayor, and three Councillor positions are all elected at-large.

3. That the Clerk is hereby authorized and directed to proceed with all required actions in order to give effect to this By-law, including the providing of notice as per Section *222(3) the Municipal Act, S.O. 2001, c.25, as amended* allowing for an appeal to the Ontario Land Tribunal within 45 days of the passage of this by-law as per Section *222(4) the Municipal Act, S.O. 2001, c.25, as amended.*

4. That this by-law shall come into effect subject to and in accordance with Section *222(8) the Municipal Act, S.O. 2001, c.25, as amended* for the 2026 election and all subsequent elections.

5. That any By-law or parts of any By-law that are inconsistent with this By-law are hereby deemed repealed in their entirety.

Read a first, second, and third time and finally passed in open Council this 15th day of October, 2024.

_____
Jim Martin, Mayor

_____
Robert V. Angione, Clerk

Corporation of the
Township of Havelock-Belmont- Methuen

By-law Number 2024 – 075

Being a by-law to authorize the Mayor and Clerk to enter into a Commercial Lease Agreement with the Cordova Mines Recreation Association and the Township of Havelock-Belmont-Methuen Public Library Cordova Branch.

WHEREAS pursuant to Section 11 (1) of the *Municipal Act, 2001, S.O. 2001, c.25,* provides broad authority to a lower tier municipality to provide any service or thing that a municipality considers necessary or desirable for the public;

AND WHEREAS pursuant to Section 11 (2)(2) of the Municipal Act, *2001, S.O. 2001, c.25,* provides that a lower tier municipality may pass by-laws respecting the Accountability and transparency of the municipality and its operations and of its local boards and their operations;

AND WHEREAS the Council of the Township of Havelock-Belmont-Methuen deems it expedient to enter into an agreement with the Cordova Mines Recreation Association for their continued use of certain premises of the Havelock-Belmont-Methuen Public Library Cordova Branch;

NOW THEREFORE the Council of the Corporation of the Township of Havelock-Belmont-Methuen hereby enacts as follows:

1. That the Mayor and Clerk are authorized to an agreement Cordova Mines Recreation Association for their continued use of certain premises of the Havelock-Belmont-Methuen Public Library Cordova Branch effective the 15th day of October, 2024;

2. That the agreement is hereby attached as Schedule ‘A’ to this By-law and forms part of this By-law.

3. That By-law 2014-63 being a By-law to amend the previous lease agreement with the Cordova Recreation Association and any By-law or parts of any By-law that are inconsistent with this By-law are hereby deemed repealed in their entirety.

4. That this by-law shall take effect upon third reading thereof.

Read a first, second and third time and finally passed in open Council this 15th day of October, 2024.

_____
Jim Martin, Mayor

_____
Robert V. Angione, Clerk

Schedule ‘A’ to By-law 2024-0075

Being a by-law to authorize the Mayor and Clerk to enter into a Commercial Lease Agreement with the Cordova Mines Recreation Association and the Township of Havelock-Belmont-Methuen Public Library Cordova Branch.

This Commercial Lease Agreement made the 15th day of October, 2024

Between

The Corporation of the Township of Havelock-Belmont-Methuen
(the "Landlord")

OF THE FIRST PART

And

Cordova Mines Recreation Association (the "Tenant")

OF THE SECOND PART

And

The Township of Havelock-Belmont-Methuen Public Library (the “Tenant”)

OF THE THIRD PART

in consideration of the rents, covenants and obligations stipulated herein the Landlord and the Tenant have agreed to enter into a Non-Exclusive Commercial Lease Agreement of the space known as the Cordova Mines Recreation Hall located at 55 Alfred Street East, Havelock, Ontario, K0L 1Z0 (the "Premises").

1. Term and Possession

(1) The Tenants shall have possession of the Premises for the purpose of this agreement for a period of three (3) years, commencing on October 15, 2024 and ending on September 30, 2027.

(2) This agreement may be subject to a review in six (6) months, at the request of any party, after the initial signing of this agreement.

(3) This agreement and all its provisions may be extended for an additional three (3) years commencing October 1, 2027 by mutual agreement of the Landlord and Tenants.

2. Rent

(1) The monthly rental fee for the Cordova Mines Recreation Association due at the first of each month shall be $150.00 (Canadian Funds).

(2) The monthly rental fee for the Havelock-Belmont-Methuen Public Library shall be included in the annual budgetary allocation as approved by Council.

(3) The Landlord and the Tenants agree that it is their mutual intention that this Commercial Lease Agreement shall be a gross Lease Agreement for the Landlord, save where stated otherwise:

(a) and to effect the said intention of the parties the Tenants promise to pay the following expenses related to the Premises as Additional Rent;

i. services supplied, including cleaning services, to the Premises at the request of the Tenant;
ii. Insurance premiums regarding the tenant's contents of the rented Premises;
iii. any tax or duty relating to the provision of goods and/or services to the general public as performed by the tenant;
iv. Repairs and maintenance as a result of any damage caused by the tenants or other parties under the supervision of the tenants.

(b) In furtherance of the parties' intention that this be a gross Lease Agreement, it is the obligation of the Landlord to pay the following expenses related to the Premises:

i. all utilities (including but not limited to the heat and air conditioning, hydro, gas, water charges, internet, etc.);
ii. the maintenance for the exterior of the building (including snow removal, grounds maintenance, lawn cutting, etc.);
iii. cleaning services for Township-organized events and services;
iv. in the event that property taxes become eligible regarding the Commercial Lease Agreement Premises, any and all property taxes;
v. the insurance premiums relating to the fire insurance covering the Commercial Lease Agreement Premises;
vi. repairs and maintenance to the roof, exterior walls, and interior of the building.
vii. heating, air conditioning systems and any other mechanical, electrical devices, appliances currently installed in the Premises.

(c) The Tenants hereby agree to indemnify and protect the Landlord from any liability accruing to the Landlord in respect of the expenses payable by the Tenants as provided herein.

(d) The Party of the Second Part being the Cordova Mines Recreation Association shall provide an annual report in January of every year to Council in Open Session providing a summary of events and finances of the previous year.

(c) The Party of the Third Part being the Havelock-Belmont-Methuen Public Library shall provide an annual report in January of every year to Council in Open Session providing a summary of events and finances of the previous year.

3. Use

(1) The Tenants shall not permit or cause to permit anything done on the Premises which may:

(a) constitute a nuisance;

(b) cause damage to the Premises;

(c) cause injury or annoyance to occupants of neighbouring Premises;

(d) make void or voidable any insurance upon the Premises; or

(e) constitute a breach of any by-law, statute, order or regulation of any municipal, provincial or other competent authority relating to the Premises.

(2) The Landlord shall have full control of the Cordova Mines Recreation Hall building in its entirety.

(3) The Tenants shall have first preference, after the Landlord, to the dates and times they wish to occupy the Premises.

(4) The Landlord shall have access to all areas of the building.

(5) The Tenants shall have exclusive access to their respective usage areas.

(6) The Tenants shall both have access to common areas such as the vestibule and the washroom.

(7) The kitchen shall remain locked at all times and shall be accessible only to Township staff and any member of the Cordova Mines Recreation Association who is in possession of a valid Food Handler Certificate as recognized by Peterborough Public Health and the Province of Ontario. Entry will be gained via key access.

(8) Wifi access is to remain available to the entirety of the building at all times and is to be shut off only by the Landlord when required.

(9) Disputes between the Tenants pertaining to space usage and building access shall be resolved by mutual agreement of all parties at a meeting to be convened by the Landlord. Failure of the Tenants to reach a mutual agreement shall result in a binding decision of the Landlord. The decision of the Landlord shall be binding on all parties.

(10) There shall be a shared calendar for the usage of the Premises between the Landlord and the Tenants.

(11) The Landlord, through the shared calendar, will book events when required to occupy the Premises.

(12) Other community groups in the Township shall be permitted to rent the Premises and will be encouraged to do so providing that dates do not conflict with events previously booked by the Landlord or Tenants.

(13) The Tenant of the Second Part shall create a fee schedule pertaining to all rentals. This fee schedule shall be shared with the Landlord.

(14) The Tenant of the Second Part will be responsible for booking and managing events within the Premises and is entitled to any proceeds as a result of such events. This includes the supervision and control of all persons in attendance at the function and to restrict such persons to the Premises.

(15) The Tenants shall abide by the capacities for persons posted or made known for the Premises.

(16) The Tenant of the Second Part will manage the Liquor Licence and retain all funds from bar sales. For a licenced function, the Tenant shall obtain a proper licence from the Liquor Control Board of Ontario (LCBO), to provide and deliver all liquor and equipment necessary for the sale and consumption of liquor, to supervise the sale and consumption of liquor, and to enforce and abide by all regulations governing the sale and consumption of liquor. Following a licenced function, the Tenant shall lock all remaining liquor and equipment in suitable storage areas and bear all associated costs.

(17) The Tenant of the Second Part is solely responsible for obtaining a Catering Endorsement for any sale and service of alcohol at an event that is held in an unlicensed area as per the regulations from the Alcohol and Gaming Commission of Ontario (AGCO).

(18) The Landlord is required to clean the Premises following events held by the Landlord.

(19) The Tenants are required to clean the Premises following events held or organized by the Tenants within twenty-four (24) hours of the event taking place.

(20) The Tenants shall return the Premises back to the general conditions of cleanliness and repair in which it was found. Specifically, it is expected that all refuse will be placed in garbage bags or receptacles; that the kitchen countertops and sinks will be left clean and that the tables and chairs will be repositioned as found or as otherwise directed by the Landlord.

(21) If the Landlord wishes to install an additional security system a unique security access code or key fob will be provided to the Tenants.

4. Keys

(1) The Tenants shall be provided with restricted keys to the Premises. Keys will be assigned to individuals as identified by the Tenants. A list containing the names of all key holders will be provided by the Tenants to the Landlord. This list will be reviewed annually in the month of January.

(2) The keys provided to the Tenants shall under no circumstances be reproduced unless authorized by the Landlord.

(3) The Tenants shall not assign the keys to any third party without the knowledge and written consent of the Landlord.

5. Repairs and Maintenance

(1) The Tenants covenant that during the term of this Commercial Lease Agreement and any renewal thereof the Tenants shall keep in good condition the Premises. All alterations, additions or repairs to the premises (land or building) are to be completed by the Landlord. The Tenants may make alterations, additions or repairs only with the approval of the landlord.

6. Insurance

(1) The Tenants covenant to hold the Landlord harmless in the event of an incident and keep the Landlord indemnified against all claims and demands whatsoever by any person, whether in respect of damage to person or property, arising out of or occasioned by the maintenance, use or occupancy of the Premises or the subletting or assignment of same or any part thereof, and the Tenants further covenant to indemnify the Landlord with respect to any encumbrance on or damage to the Premises occasioned by or arising from the act, default, or negligence of the Tenants, its officers, agents, servants, employees, contractors, customers, invitees or licensees and the Tenants agree that the foregoing indemnity shall survive the termination of this Commercial Lease Agreement notwithstanding any provisions of this Commercial Lease Agreement to the contrary.

(2) The Tenants shall carry insurance in their own name insuring against the risk of damage to the Tenant’s property within the Premises caused by fire or other perils and the policy shall provide for coverage on a replacement cost basis to protect the Tenant's contents.

(3) The Tenants shall carry public liability and property damage insurance in which the Landlord shall be named as a co-insured, in the amount of Five Million ($5,000,000.00) exclusive and

cost against loss or damage resulting from bodily injury to death of one or more persons and loss of or damage to property arising in connection with the function as a result of any act or omission of the Tenant names herein, their members, officers, employees, agents or contractors. The policy shall include a cross-liability endorsement;

i. A Certificate of Insurance, naming the Township of Havelock-Belmont- Methuen as additional insured, shall be provided to the Township of Havelock-Belmont-Methuen annually.

7. Termination Upon Notice and at End of Term

(1) Should the Landlord desire to renovate the Premises for major repairs then the Landlord shall work with the Tenants in an attempt to minimize disruption of the Tenants' operations, with all parties acting reasonably.

(2) If the Premises are expropriated or condemned by any competent authority:

(a) the Landlord shall have the right to terminate this Commercial Lease Agreement by giving one hundred and eighty (180) clear days notice in writing to the Tenants.

(3) If the Tenants remain in possession of the Premises after termination of this Commercial Lease Agreement as aforesaid and if the Landlord then accepts rent for the Premises from the Tenants, it is agreed that such overholding by the Tenants and acceptance of Rent by the Landlord shall create a monthly tenancy only but the tenancy shall remain subject to all the terms and conditions of this Commercial Lease Agreement except those regarding the Term.

(4) At any time upon the dissolution of the Cordova Mines Recreation Association or the Cordova Branch of the Havelock Public Library, written notification shall be provided to the Landlord, and termination of this Commercial Lease Agreement and all responsibilities shall cease 3 months following such notice unless otherwise agreed by the parties.

(5) Notwithstanding subsections (1) to (4) as set out above, if any party wishes to terminate this Lease Agreement, then it shall have the right to terminate this Commercial Lease Agreement upon giving the other party at least six (6) months written notice of its desire to do so.

8. Notice

(1) Any notice required or permitted to be given by one party to the other pursuant to the terms of this Commercial Lease Agreement may be given

To the Landlord, to the Attention of the Clerk, at:

1 Ottawa Street East, P.O. Box 10

Havelock, Ontario
K0L 1Z0

To the Tenants at the Premises or at:

Cordova Mines Recreation Association
55 Alfred Street East
Havelock, ON
K0L 1Z0

The Township of Havelock-Belmont-Methuen Public Library (Cordova Branch)
55 Alfred Street East
Havelock, ON
K0L 1Z0

(2) The above addresses may be changed at any time by giving ten (10) days written notice.

(3) Any notice given by one party to the other in accordance with the provisions of this Commercial Lease Agreement shall be deemed conclusively to have been received on the date delivered if the notice is served personally or one hundred and twenty (120) hours after mailing, if the notice is mailed.

9. Health Protocols

The Tenants are expected to operate the Premises in accordance with all ongoing Public Health protocols and regulations as well as in accordance with all Township rules and regulations for the facility.

10. Interpretation

(1) The words importing the singular number only shall include the plural, and vice versa, and words importing the masculine gender shall include the feminine gender, and words importing persons shall include firms and corporations and vice versa.

(2) unless the context otherwise requires, the word "Landlord" and the word "Tenant" wherever used herein shall be construed to include the executors, administrators, successors and assigns of the Landlord and Tenant, respectively.

In Witness of the foregoing covenants the Landlord and the Tenant have executed this Facility Rental Agreement.

Landlord Per:

_____
Jim Martin, Mayor

_____
Robert V. Angione, CAO/Clerk

We have the authority to bind the Corporation

Dated: _____

Tenant(s) Per:

_____
For Cordova Mines Recreation Association

Name:
Title:

_____
For Cordova Mines Recreation Association

Name:
Title:

Dated: _____

_____
For Township of Havelock-Belmont-Methuen
Public Library (Cordova Branch)

Name:
Title:

_____
For Township of Havelock-Belmont-Methuen
Public Library (Cordova Branch)

Name:
Title:

Dated: _____

Corporation of the
Township of Havelock-Belmont- Methuen

By-law Number 2024 – 076

Being a by-law to confirm the proceedings of the Regular Meeting of the Council of the Township of Havelock-Belmont-Methuen held on October 1, 2024.

WHEREAS the Municipal Act 2001, S.O. 2001, Chapter 25 as amended, Section 238 (2), provides that every municipality and local board shall pass a procedure by-law for governing the calling, place and proceedings of meetings.

NOW THEREFORE, the Council of the Corporation of the Township of Havelock-Belmont-Methuen hereby enacts as follows:

1. That the actions of the Council at its meeting held on the fifteenth day of October, 2024 A.D. in respect to each recommendation and action by the Council at its said meeting, except where prior approval of the Ontario Municipal Board or other statutory authority is required, is hereby adopted, ratified and confirmed.

2. That the Mayor and the Clerk of the Township of Havelock-Belmont-Methuen are hereby authorized and directed to do all things necessary to give effect to the said action or to obtain approvals where required, and to execute all documents as may be necessary in that behalf and the Clerk is hereby authorized and directed to affix the Corporate Seal to all such documents.

Read a first, second, and third time and finally passed in Open Council this 15th day of October, 2024.

_____
Jim Martin, Mayor

_____
Robert V. Angione, Clerk