FUNCTIONAL SERVICING AND STORMWATER MANAGEMENT REPORT

530 GUELPH STREET

TOWN OF HALTON HILLS
REGION OF HALTON

PREPARED FOR:

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CROZIER

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1.0 Introduction

C.F. Crozier & Associates Inc. (Crozier) was retained by Halton Management Inc. (Client) to prepare a Functional Servicing and Preliminary Stormwater Management Report in support of the Official Plan Amendment, and Zoning By-Law Amendment applications for the proposed development at 530 Guelph Street, in the Town of Halton Hills. The purpose of this report is to demonstrate that the proposed change in use is feasible from a functional servicing and stormwater management perspective while conforming with the requirements of the Town of Halton Hills, Halton Region, and Credit Valley Conservation (CVC).

The reports, drawings, and design standards referenced during the preparation of this report include:

- Proposed Site Plan (BJC Architects & Associates Inc. (July 18, 2025)
- Credit Valley Conservation Authority Regulation Mapping (Accessed July 8, 2025)
- Credit Valley Conservation Authority Flood Risk Mapping for Credit River – Norval to Orangeville (Obtained December 4, 2024)
- Town of Halton Hills Pre-Consultation Notes/Development Review Committee Meeting Notes (December 7, 2023)
- Halton Region Water Wastewater Linear Design Manual (November 2024)
- Town of Halton Hills Subdivision Manual (July 1999)

Currently the property located at 530 Guelph Street is zoned as Hamlet Commercial (HC), Environmental Protection One (EP1), and Hamlet Residential One (HR1), and the Town of Halton Hills will require an Official Plan Amendment and a Zoning By-law Amendment to support the proposed site use change.

1.1 Site Description

The subject lands currently consist of an old nightclub/restaurant that is out of service. The site is located within the Hamlet of Norval community and are bounded by Guelph Street (Highway 7) to the north, the Credit River to the east and south, and residential dwellings to the west. According to the Credit Valley Conservation Authority (CVC) regulation mapping, the Subject Lands are located within a CVC regulated area, therefore we have accounted for a submission to this agency.

According to the Proposed Site Plan prepared by BJC Architects inc. (July 18, 2025), the elements envisioned for the proposed development include:

- Repurposing the two existing buildings as a Conference Center.
- Resurfacing of the existing parking lot and internal laneways.
- 208 at-grade parking spaces, and four (4) bicycle parking spaces.
- Landscaped areas.

1.2 Phase One Environmental Site Assessment

A Phase One Environmental Site Assessment (ESA) was completed by Crozier to address compliance requirements associated with the site. The Phase One ESA has been submitted as a standalone report to Credit Valley Conservation and is currently under review. For further details, please refer to the Phase One ESA (July 2025) provided under separate cover.

2.0 Water Servicing

Halton Region is responsible for the operation and maintenance of the public watermain system in the Town of Halton Hills. Based on review of as-built drawings and observations made on site, it is understood that the existing building is serviced by a 38 mm copper water service connected to the existing 150 mm diameter watermain located within the Guelph Street and Winston Churchill Boulevard intersection. The size and exact location of this water service will be confirmed at the detailed design stage. This pipe will continue to service the site under post-development conditions and is outlined on the Site Servicing Plan (**Drawing C102**).

Based on the available as built drawings there is an existing 200 mm watermain adjacent to the site along the north side of Guelph Street.

2.1 Domestic Water Demand

The water demand for the site under both existing and proposed conditions was calculated with reference to the Halton Region Water and Wastewater Linear Design Manual (November 2024). Given that the size of the buildings will remain the same, and the proposed use will remain under the category of "Light Commercial" under Halton Region design criteria, the water demand for the site will also remain the same.

Through discussions with the planner and architect, it is understood that the repurposed building will be intended to have a maximum capacity of 750 persons. A water demand calculation was also completed given this population to estimate the domestic water demand for the site under proposed conditions.

The domestic water demand for the property under existing and proposed conditions is summarized in Table 1. Water demand calculations are provided in **Appendix A**.

Table 1: Estimated Domestic Water Demand

Municipality		Average Daily Water Demand (L/s)	Maximum Daily Demand (L/s)	Maximum Hourly Demand (L/s)
Region of Halton	Existing Conditions (Halton Region population equivalent)	0.63	1.41	1.41
	Proposed Conditions (Halton Region population equivalent)	0.63	1.41	1.41
	Proposed Conditions (per architect/planner population)	1.95	4.39	4.39

Based on the Halton Region design criteria for domestic water demand, the estimated average daily demand and peak hourly demand for the site under proposed conditions are 1.95 L/s and 4.39 L/s, respectively, based on the population estimate provided from the architect and planner.

2.2 Fire Flow Demand

As indicated by the Halton Region Water Wastewater Linear Design Manual (November 2024), the Fire Underwriters Survey (FUS) method (2020) was used to estimate the fire flow requirements for the site under existing and proposed conditions. Flow requirements were based on the building Gross Floor Areas (GFA) for the buildings from the site plan prepared by BJC Architects (July 18, 2025). These calculations have been prepared assuming wood frame construction with no sprinkler system.

Table 2 summarizes the estimate fire flow demand and duration necessary to provide fire protection for the buildings on site. **Appendix A** contains the Fire Underwriters Survey (FUS) calculations.

Table 2: Estimated Fire Flow

Method	Building	Total Effective Area (m^2)	Fire Flow (L/s)	Duration (hr)
Fire Underwriters Survey	Existing Conditions	960	200	2.5
	Proposed Conditions	960	200	2.5

Based on the fire flow calculations and the total effective area of 960 m^2, the estimated fire flow was calculated to be 200 L/s for a duration of 2.5 hours for the site under existing and proposed conditions. Therefore, the proposed repurposing will not require any additional fire flow requirements.

It should be noted that the fire flows from the FUS method is a conservative estimate for comparison purposes only. The fire protection engineer for the project will complete the analysis required for the fire protection system for the building and the architect will design fire separation methods per the determined fire flow rate. The current existing building does not have a sprinkler system, and it is our understanding that the renovated building will not be provided with a sprinkler system.

Currently, there is an existing hydrant located on north side of Guelph Street just west of the entrance driveway which will provide the necessary fire flow, when required.

To determine the available flow and pressure within existing municipal watermain located along the north side of Guelph Street a hydrant flow test can be completed, if required.

3.0 Sanitary Servicing

3.1 Existing Sanitary Servicing

Municipal sanitary services are not available in the vicinity of the site, therefore, the site is serviced privately under existing conditions. Based on observations made in the field, the existing buildings are currently serviced by three (3) private on-site sewage systems. A review of the Ministry of Environment, Conservation & Parks database reveals that Environmental Compliance Approval (ECA) Number 0811-762VH, was issued on August 17, 2007 (provided in **Appendix B**). This ECA describes three (3) sewage systems having a overall combined rated capacity of 40,000 L/day serving the existing buildings, which are described as the West Seven Entertainment Centre and are referred to as the Spa Building and the Dance Pavillion Building. The three sewage systems each consist of a 27,000 L two compartment septic tank discharging to an inground absorption style leaching bed. There is also a lift station and septic tank in what was described at the time as the Spa building, which discharges into the sewage system located on the north side of the dance hall building.

A site visit was undertaken on July 10, 2025 by Crozier staff to complete a preliminary review of the existing sewage systems. The locations of all three 27,000 septic tanks were confirmed, although only two were accessible for a visual inspection. The septic tanks appear to meet the size indicated on the ECA however they are showing signs of corrosion and spalling consistent with the age of the infrastructure. The locations of the leaching beds were generally confirmed, but a condition assessment could not be completed. Further investigation is required to determine whether any of the existing components can be maintained for future use. The location of the existing components are shown on the Site Servicing Plan (**Drawing C102**).

3.2 Design Sewage Flow

As previously noted, the site is proposed to be repurposed from a nightclub/restaurant to a Conference Center. The total daily design sewage flow for the proposed development was calculated in accordance with Table 8.2.1.3.B of the Ontario Building Code (OBC) as summarized in Table 3. For the purposes of this assessment a population of 750 persons (no fixed seats) has been assumed. It has also been assumed that food services will be provided in house.

Table 3: Estimated Total Daily Design Sanitary Sewage Flow

Occupancy	Unit	Unit Flow (L/day)	Number of Units	Total Flow (L/day)
Assembly Hall with Food Service	Per seat	36	750	27,000

As shown in Table 3, the total daily design sanitary sewage flow for the site under proposed conditions is 27,000 L/day. It should be noted that both the number of seats and the provision of food service is still being reviewed by the project team and the flows may be subject to change. If the capacity is reduced or food service is removed the daily design sanitary sewage flow would be lowered, therefore this is considered a conservative estimate at this time. As noted in the previous section, the existing sewage systems have a combined capacity of 40,000 L/day, suggesting there may be sufficient capacity within these systems. However, the condition or functionality of the existing sewage systems has not been confirmed at this time.

Should the existing sewage systems be insufficient for future use, a new on-site sewage system would be required. As the total daily design sanitary sewage flow currently exceeds 10,000 L/day, an amendment to the existing ECA would be required. Given the location adjacent to the Credit River it is expected that an advanced treatment system with subsurface disposal would be required, however the details would be subject to MECP requirements and policies. For preliminary sizing purposes a T-time of 5 min/cm has been assumed, consistent with the current ECA. To accommodate a flow of 27,000 L/day, an area of approximately 600 m^2 would be required. This area can easily be accommodated on the property (refer to C102). It is likely that a raised leaching bed will be required given the proximity to the Credit River. Existing soils and groundwater conditions should be investigated as soon as possible to confirm the above design assumptions. Sewage system design calculations are provided in **Appendix C**.

4.0 Drainage Conditions

The drainage conditions for the site in both pre-development and post-development conditions are outlined in the following sections.

4.1 Existing Drainage Conditions

According to the topographic survey (Van Harten, November 19, 2024), the site currently consists of three existing buildings, paved parking areas and internal driveway, and associated landscaping. Under existing conditions, the site generally slopes from east to west and drains towards the Credit River via overland flow.

Table 4 summarizes the pre-development drainage conditions and runoff coefficients. Figure 1 illustrates the Pre-Development Drainage Plan.

Table 4: Pre-Development Catchment Areas and Runoff Coefficients

Catchment ID	Description	Impervious Area (m^2)	Pervious Area (m^2)	Weighted Runoff Coefficient	Outlet
101	Existing buildings, paved parking lot, and landscaped areas	10,857	9,743	0.59	Credit River

4.2 Proposed Drainage Conditions

Based on the Site Plan prepared by BJC Architects Inc. (July 18, 2025), the proposed development will mimic existing conditions, as the existing buildings are proposed to remain, with some repaving of the existing parking lot, and addition of landscaped areas.

The proposed site grading will match existing conditions and will maintain drainage conditions and emergency overland flow routes which will drain towards the Credit River. Table 5 summarizes the post-development drainage conditions and runoff coefficients.

Table 5: Post-Development Catchment Areas and Runoff Coefficients

Catchment ID	Description	Impervious Area (m^2)	Pervious Area (m^2)	Weighted Runoff Coefficient	Outlet
201	Buildings, paved parking lot, and landscaped areas	9,324	11,276	0.54	Credit River

Refer to the Post-Development Drainage Plan (**Figure 2**) for the proposed drainage conditions and the Site Grading Plan (**Drawing C102**) which illustrates the proposed site drainage.

5.0 Stormwater Management

Based on the Pre-consultation Meeting Notes from the Town of Halton Hills (December 7, 2023), the stormwater management for the site should include maintaining pre-development conditions for stormwater quantity and quality control.

5.1 Stormwater Quantity Control

As discussed in Section 5.0, stormwater quantity control requirements for the site should include maintaining existing conditions. This means that post-development runoff should not exceed pre-development levels for all design storms up and including the 100-year storm event.

Using the Town of Halton Hills' intensity-duration-frequency (IDF) data, the Modified Rational Method was used to determine the pre-development and post-development peak flows for the site. The pre-development and post-development peak flow rates for the site, draining to the Credit River, are summarized below in Table 6.

Table 6: Peak Flow Summary (Outlet to the Credit River)

Storm Event	Pre-Development (L/s)	Post Development (L/s)	Difference (%)
2-yr	241.8	222.1	-8%
5-yr	344.5	316.4	-8%
10-yr	401.3	368.5	-8%
25-yr	474.9	436.2	-8%
50-yr	539.4	495.4	-8%
100-yr	632.3	580.7	-8%

The peak flows presented in Table 6 confirm an overall reduction in runoff potential under post-development conditions. This reduction is attributed to an increase in pervious area, which has resulted in lower peak flow rates discharging from the site to the Credit River.

Since the peak flows have decreased under post-development conditions, there have been no stormwater quantity controls proposed for the Site. Detailed stormwater management calculations are provided in **Appendix D**.

5.2 Stormwater Quality Control

Under existing conditions, there are currently no stormwater quality control measures. The proposed development introduces an increase in pervious area, resulting in improved stormwater quality through enhanced infiltration and a greater proportion of "clean" runoff from landscaped areas. Given that the proposed conditions for the site represent a net improvement in water quality, stormwater quality controls have not been provided for the site.

6.0 Erosion and Sediment Controls During Construction

Erosion and sediment controls will be installed prior to the commencement of any construction activities and will be maintained until the site is stabilized or as directed by the Site Engineer and/or the Town of Halton Hills. Controls will be inspected after each significant rainfall event and maintained in proper working condition. The proposed erosion and sediment controls for the development consist of:

Silt Fencing

Silt fencing will be installed on the perimeter of the site to intercept sheet flow. Additional silt fencing may be added based on field decisions by the Site Engineer and Owner, prior to, during, and following construction.

Rock Mud Mat

A rock mud mat will be installed at the entrance to the construction zone to prevent mud tracking from the site onto surrounding lands and the perimeter roadway network. All construction traffic will be restricted to this access only.

Temporary Catchbasin Siltation Control Device (Siltsack)

A Siltsack will be installed existing catchbasins surrounding the site to. The Siltsack will provide sediment control to prevent silt and sediment from entering the storm water system.

Refer to the Removals, Erosion and Sediment Control Plan (**Drawing C101**), outlining the proposed erosion and sediment controls.

7.0 Floodplain Review and Safe Access Evaluation

The Subject Property is located adjacent to the Credit River and is situated within the regulated area under the jurisdiction of the CVC. Accordingly, a floodplain review and safe access evaluation is required in support of the proposed repurposing of the site, while maintaining the existing "Light Commercial" land use designation.

7.1 Floodplain Review

The existing regulatory floodplain mapping confirms that the driveway access is inundated during the regulatory storm event, with flood depths typically ranging from 1.0 to 1.2 m. While this exceeds the thresholds that are generally accepted for safe pedestrian and vehicular access, other aspects of the redevelopment support a favourable evaluation.

Notwithstanding the above, the proposed redevelopment results in several beneficial changes to the hydrologic and hydraulic characteristics of the site. The following items have been considered.

- Reduction in Impervious Area: The post-development condition reduces the total impervious area from 10,847 m^2 to 9,234 m^2, resulting in decreased runoff volumes and reduced peak flow rates associated with the floodplain.

- Lower Runoff Coefficient: The composite runoff coefficient decreased from 0.59 to 0.54, indicating a meaningful reduction in runoff potential and improved site impermeability. This reduction is expected to promote infiltration and further reduce flood depth.

- Increase in Flood Storage: A net cut volume of 152.5 m^3 will result as part of the redevelopment, particularly near the Credit River channel corridor, providing a measurable increase in floodplain storage. The volumetric gain will offset flood encroachment to the access route and improve overall floodplain capacity.

These design changes result in a net positive impact on the site's contribution to flooding and are consistent with floodplain management objectives aimed at maintaining or enhancing existing conditions.

7.2 Safe Access Evaluation

While the driveway is inundated during the regulatory event, further evaluation indicates that the proposed repurposing does not intensify risk. The following items are considered:

- The land use remains light commercial, with no increase in development footprint or functional intensity.
- The transition from a nightclub to conference center represents repurposing rather than an intensification of occupancy or hazard vulnerability.
- The existing building remains structurally viable under flood conditions, and the proposed repurposing does not increase a risk to public safety.

Critically, the second floor of the existing building lies well above the regulatory flood elevation, providing a safe refuge area for occupants during rare flood events. In the event of a regulatory flood, pedestrians can safely shelter on the second flood until emergency assistance can be coordinated. This vertical refuge, while not a substitute for access, is a recognized and accepted component of flood risk mitigation when combined with emergency response planning and communication protocols and building occupancy remaining consistent with zoning and safety standards.

Overall, the approach is consistent with accepted floodplain mitigation principles and aligns with precedent where conservation authorities have supported redevelopment in regulated areas under the following conditions:

- There is no increase in risk to surrounding properties.
- Flood storage compensation is provided.
- Safe access limitations are addressed through operational risk mitigation measures.

8.0 Conclusions and Recommendations

As outlined in this report, based on the information available at this time it can concluded that the proposed development can be serviced for water, sanitary, and stormwater management in accordance with the Town of Halton Hills, Halton Region, and CVC requirements and standards. Our general conclusions and recommendations include:

1. The proposed water demand for the site is the sum of the maximum daily demand and fire flow. The water demands outlined in Table 1 and 2 of this report demonstrate that the proposed site repurposing will not result in significant impacts to the required water demand.
2. Water servicing to the buildings will be provided by the existing 38 mm copper water service connecting to the watermain located within intersection of Guelph Street and Winston Churchill Boulevard, similar to existing conditions.
3. The proposed sanitary design flow for the site is 27,000 L/day. The existing sewage systems have a combined rated capacity of 40,000 L/day, however the condition and functionality of the existing systems has not been confirmed.

4. If a new sewage system is required, there is adequate space on the property to accommodate a new leaching bed. MECP approval will be required if the total daily design sanitary sewage flow exceeds 10,000 L/day.

5. Stormwater runoff from the development will mimic the pre-development conditions and will drain from west to east towards the Credit River.

6. Since stormwater quantity and quality conditions are improving under post-development conditions, no control measures have been proposed.

7. Erosion and sediment controls will be implemented on-site prior to any construction activities.

8. While the development is subject to flooding during the regulatory event, the proposed redevelopment achieves several key floodplain management objectives. The redevelopment represents a responsible and risk-informed repurposing, offering reduced imperviousness and runoff, increase in floodplain storage, second-floor refuge for occupants, and no increase in use or vulnerability.

Based on the above conclusions, we support the proposed development application from the perspective of water and sanitary servicing and stormwater management.

Respectfully submitted,

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