HOUNSLOW HOLDINGS INC. REPORT NUMBER:CA0003234.0568

FUNCTIONAL SERVICING REPORT 26-38 HOUNSLOW AVENUE

MARCH 28, 2024

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CONFIDENTIAL





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HOUNSLOW HOLDINGS INC.

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO.: CA0003234.0568 CLIENT REF:CA0003234.0568 DATE: MARCH 28, 2024

WSP 100 COMMERCE VALLEY DRIVE WEST THORNHILL, ON, CANADA L3T 0A1

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1 INTRODUCTION

WSP Canada Inc. (WSP) has been retained by Hounslow Holdings Inc., to prepare a Functional Servicing Report to assess the servicing requirements relating to the proposed development at 26-38 Hounslow Avenue, North York, Toronto, ON.

A Stormwater Management Report outlining the proposed stormwater quality and quantity controls on this site has been prepared under a separate cover, also by WSP Canada Inc.

The site will be serviced by existing local municipal sewers and watermains within adjoining municipal rights-ofway. Service connections will be extended to the proposed site and coordinated with the building design team.

In preparing this report, WSP staff secured and reviewed available City of Toronto PUCC drawings, and Plan and Profile Drawings.

1.1 SITE DESCRIPTION

The site is a 0.22ha parcel and is proposed to be a 26-storey residential development. The site currently consists of four multi-storey detached houses. The site is located on the northern side of Hounslow Avenue which is east of Beecroft Road and west of Yonge Street. There is a public walkway which connects Hounslow Avenue with Kempford Boulevard, the path runs along the northern and eastern property boundaries. There are two existing detached houses at the west of the site. A row of existing houses is located opposite the site on the southern side of Hounslow Avenue. At the east of the site and east of the public walkway are existing condominium buildings. At the north of the public pathway is an existing condominium site with amenities. The internal site topography is generally flat.

The proposed development is a 26-storey residential condo with two levels of underground parking. The objective of the development proposal is to provide attainable/affordable, sustainable, and livable options for the community. Refer to Figure 1 for the Pre-Development Plan and to Figure 2 for an illustration of the proposed development plan.



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2 WATERMAIN SUPPLY

2.1 EXISTING CONDITIONS

Underneath the eastern sidewalk of Beecroft Road there is an existing 400mm diameter PVC watermain which runs in a north-south direction. There is a 150mm diameter PVC watermain within the northern R.O.W. of Hounslow Avenue. This 150mm diameter watermain continues east along Horsham Avenue and connects to an existing 300mm watermain located within the western sidewalk of Yonge Street. According to available data, the 150mm watermain on Hounslow Avenue and the 400mm on Beecroft Road do not interconnect.

2.2 PROPOSED WATER SERVICING

The watermain connection is proposed to be from the existing 150mm diameter watermain in Hounslow Avenue, in front of the site. The proposed watermain connection will provide both domestic water supply as well as flow for fire suppression. The on-site watermains within the proposed parking structure will be designed by the site mechanical consultant.

The design of the new water services within the existing municipal road allowances will conform to the City of Toronto standards and specifications for watermain construction. When constructing new water service(s), all existing water services are to be disconnected and removed or capped as necessary to the satisfaction of Toronto Water.

There is an existing fire hydrant at the northeast corner of Hounslow Avenue and Beecroft Rd. and another one at Hounslow Avenue and Horsham Avenue. Due to lack of hydrants adjacent to the proposed development, a new hydrant is proposed in front of the proposed site in order to comply with maximum 45m distance to Siamese connections required by the City of Toronto.

Refer to Appendix H for the proposed watermain servicing design.

2.3 WATER DEMAND

The water demand for the proposed building is based on the Design Criteria for Sewers and Watermains by the City of Toronto dated January 2021.

Building statistics are based on site plan produced by Architect - Studio JCI dated March 25, 2024. The site plan proposes 15 studio units, 92 1-bedroom units, 107 1-bedroom plus den units, 61 2-bedroom units and 30 3-bedroom units. This equates to a total gross floor area of 19,400.00m².

Using the population per unit criteria given by the City of Toronto in their design guide, the equivalent total residential population for the proposed building is 521 persons.

The water demands for the proposed site are based on the following municipal design criteria taken from the City of Toronto Design Criteria for Sewer and Watermains – January 2021:

- Multi-unit per capita demand is 191 litres/capita/day.
- Population densities of 1.4 ppu for studio units
- Population densities of 1.4 ppu for one-bedroom units
- Population densities of 2.1 ppu for two-bedroom units
- Population densities of 3.1 ppu for three-bedroom units
- Residential peaking hour factor 2.5
- Maximum day peaking factor 1.3

Using the above criteria, the peak water demand for the proposed development has been calculated to be 2.88 L/s.

The maximum day demand has been calculated to be 1.50 L/s while the residential average water demand has been calculated to be 1.15 L/s.

2.4 HYDRANT FLOW TEST

The required fire flow rate of the proposed development was calculated to be 5,000 L/min (83.3 L/s) as defined by the Fire Underwriters Survey (FUS) of 2020. The FUS calculations are based on the proposed buildings being fire-resistive with vertical openings and exterior vertical communications being adequately protected (one-hour fire rating), complete automatic sprinkler protection (meeting NFPA 13 and other NFPA sprinkler standards), building separation distances, and having low contents fire hazard material (non-combustible). The calculations consider the area of the proposed buildings largest floor (floor 4) plus 25 percent of each of the two immediately adjoining floors (floors 3 and 5). The total water demand for the development is maximum day demand plus fire demand as it is greater than peak hour demand. The total water demand for the development is 5,091.20L/min (84.82 L/s).

A hydrant flow test was conduced on 24th October 2019. The results indicated that a minimum fire flow of 12,480 L/min (208 L/s or 3,300 USGPM) is available at 20 psi. As such, the existing watermain network is sufficient to supply the proposed development. Refer to Appendix A for the detailed calculations of the estimated domestic water demands and Appendix B for and FUS fire flow calculations and hydrant flow test results respectively.

2.5 WATERMAIN APPURTENANCES

The proposed underground parking structure covers most of the footprint of the site. As noted, the on-site water distribution system within the proposed parking structure will be designed by the site mechanical consultants. In accordance with city standards, a water meter and a backflow preventer valve will be installed on the domestic line within the mechanical room. A detector assembly will be installed on the fire service line in compliance with the OBC. The meter room will need to be accessible to the city and provide remote read-out locations for the city's use in reading the meters. Details of the room's layout will be provided by the mechanical engineer at the detailed design stage.

Building code requirements stipulate that each building be serviced by a fire hydrant which is located no more than 45m away from the building's siamese connection. As noted, a new fire hydrant is proposed on Hounslow Avenue. The hydrant will be located within 45m from the siamese connection.

3 SANITARY SERVICING

3.1 EXISTING CONDITIONS

The site currently consists of four multi-storey detached houses that connects an existing 250mm diameter sanitary. The upstream end of the sewer system is a sewer which runs south along the eastern boundary of the footpath. It then connects to a 250mm diameter sanitary sewer which runs westward within Hounslow Avenue.

Using population equivalent, average residential flow, peaking factor and infiltration criteria stipulated within the city of Toronto Design Criteria for Sewers and Watermains (Jan. 2021), the total peak sanitary flows from the existing structures on site were calculated to be 0.50 L/s.

3.2 PROPOSED SANITARY SERVICING

Sanitary connection from the proposed building is proposed to be connected to the existing sanitary sewer on Hounslow Avenue directly opposite the site. The sanitary pipe is proposed to be a 200mm diameter at 2% slope. As the connection is greater than half the existing pipe diameter, a manhole is proposed at the connection. A sanitary control manhole will be provided on private property close to the property line and will be accessible by the City. Proposed sanitary sewers within the proposed parking structure will be designed by the site mechanical consultant to meet Ontario Plumbing Code Standards. Refer to the Site Servicing Plan in Appendix H for the proposed sanitary servicing design.

The theoretical future sanitary flow for the proposed site was calculated using criteria from the City of Toronto. The total estimated peak sanitary flow for the proposed structure is based on the below formula:

Total Peak Flow = Average Flow * Peaking Factor + Infiltration Allowance

The sanitary demands for the proposed site are based on the following municipal design criteria taken from the City of Toronto Design Criteria for Sewer and Watermains – January 2021:

- Sanitary demand rate of 240 L/person/day for residential flows
- Population densities of 1.4 ppu for one-bedroom units
- Population densities of 2.1 ppu for two-bedroom units
- Population densities of 3.1 ppu for three-bedroom units
- Peaking Factor of Residential = $1+14/(4+p^{0.5})$, where p = population in thousands
- Infiltration allowance of 0.26 L/s/ha (all areas)

According to the architectural plan dated March 25, 2024, the future development is proposed to have:

- 15 studio units
- 199 one-bedroom/ 1-bedroom + den units
- 61 two-bedroom/ 2-bedroom + den units
- 30 three-bedroom units

The future population was calculated to be 521 persons. Using the criteria stipulated by the City of Toronto and the details provided by the architect it was found that the average flow for the future structure is 1.45 L/s with a residential peaking factor of 3.97. This results in the total peak flow for the future proposed structure being 6.37 L/s, including a groundwater pumping rate of 0.63 L/s.

Refer to Appendix C for the theoretical sanitary sewage flow design sheet.

3.3 EXISTING SANITARY SEWER CAPACITY

The existing sanitary sewer within Hounslow Avenue is a 250mm sewer which drains towards the sanitary sewer in Tamworth Road.

An analysis of the downstream sanitary sewer has been conducted. The analysis confirms that the downstream sewers have sufficient capacity to accommodate an increase in flows resulting from the proposed development, including contributions from the interception of groundwater flows. The downstream sewer capacity analysis has been included in Appendix D.

3.4 EXISTING SANITARY SYSTEM INVESTIGATION

As described, the upstream end of the existing sanitary sewer system on Hounslow Avenue is a sewer which runs south along the eastern boundary of the footpath. It then connects to a 250mm diameter sanitary sewer which runs westward within Hounslow Avenue. Project team has investigated the status of the existing north south sewer. The investigations were completed by Aquaflow, dated January 29 and March 16, 2020. A copy of the investigations has been included in Appendix E. The north south sewer includes only service laterals from the 26 Hounslow Avenue. There are no other service connections to the sewer section.

4 STORMWATER SERVICING

4.1 EXISTING CONDITION

Within the northern lane of Hounslow Avenue, there is a 675mm diameter concrete stormwater sewer which runs westward. This sewer connects with a stormwater sewer in Beecroft Road and continues west in a 600mm diameter pipe along Hounslow Avenue. It is assumed that the 675mm diameter sewer directly in front of the proposed site is being used as a form of flow control along the storm sewer. This is assumed based on the change in sewer diameter from a 675mm to a 600mm further up Hounslow Avenue.

4.2 DISCHARGE CRITERIA

The Wet Weather Flow Management Guidelines stipulates that the allowable discharge rate of storm water into a municipal storm sewer system from the proposed development during a 2-year design storm event must not exceed the peak runoff rate from the pre-developed site conditions during the same rainfall event. The discharge should also not exceed available capacity within the receiving municipal sewer, whichever is less.

If there are any storm waters which exceed the allowable discharge rate, it must comply with requirements of erosion control, flood flow, water balance and water quality. This additional stormwater can be allowed to discharge via overland flow routes if there is sufficient capacity. If there is insufficient capacity or there are no approved overland flow routes, all flows which are between the 2-year and 100-year return period events shall be attenuated on-site and be restricted to discharge at the allowable release rate.

A stormwater management (SWM) report has been prepared by WSP under a separate cover.

4.3 PROPOSED STORMWATER DISCHARGE

In order to match the existing drainage pattern, the drainage from the proposed development will discharge into the existing 675mm stormwater sewer in Hounslow Avenue.

In order to comply with discharge requirements of the City, a retention tank is proposed to attenuate flows as the discharge from the site is restricted. The proposed tank is located under the ground floor at the south east corner. A storm control manhole will be provided on private property close to the property line and will be accessible by the City. Discharge from the site will be provided via a 300mm storm service connection. The storm service connection within the existing municipal road allowance will be designed to the City of Toronto Standards. Proposed storm sewers within the proposed parking structure will be designed by the site mechanical consultant to meet Ontario Plumbing Code Standards.

The proposed development incorporates a green roof and landscaped areas. Furthermore, the on-site quantity control measures will be provided in accordance with the WWFMG, and will improve the current condition by reducing the contributing peak flow to the storm sewer. The site allowable release rate is 24.0 L/s, which corresponds to a 2-year storm at 0.5 run-off coefficient. The storm flows that will discharge from this site will be reduced to a flow rate of 21.3 L/s (refer to SWM report for details). A stormwater storage cistern will be sized to retain all site runoff in excess of the designed discharged flow.

For the development of the site, the grading design will be prepared such that the surface (i.e. roads, walkways and landscaped areas) grades will direct surface drainage away from the building to drainage inlets. The proposed grading of the subject site will ensure that existing grade elevations will be met along the property limits.

For major storm events exceeding the 100-year storm and the capacity of the cistern, the site will be graded to direct overland flow away from the building to the public roads.

The proposed storm service connection and existing storm municipal infrastructure adjacent to the site is shown on the Site Servicing Plan in Appendix H.

5 SITE DEWATERING SYSTEM

Hydrogeological Investigation Report for the site has been prepared by B.I.G. Consulting dated March 25, 2024, revision #5. Based on the groundwater quality analysis, the groundwater meets sanitary and combined sewer standards. The anticipated discharge during the construction phase is 87,000 L/day. For permanent dewatering, a below grade drainage system is proposed to be installed for the development. In the event of an extreme storm event, the water table may rise to the foundation elevation. If this occurs, a flow rate of 39,000 L/day (27.08 L/min) could be possible.

To align with development's sustainability objectives and reduce the environmental impact of the development, the project team is actively seeking ways to minimize the use of concrete, which is the largest contributor to embodied carbon. As part of this effort, the plan includes the installation of an underslab drainage system to manage groundwater in order to reduce the quantity of concrete required for the construction. Bathtubbing the proposed underground parking structure would increase the amount of concrete significantly.

The Owner acknowledge the City prohibits any private water discharge to the City's sewage works unless authorized through the issuance of a Private Water discharge approval by the General Manager of Toronto Water under City of Toronto Municipal Code Chapter 681, Sewers (the "Sewers By-Law"). The Owner will be submitting the Private Water Discharge Permit Application to Toronto Water under separate cover.

The permanent groundwater will be collected on-site within a sump and discharged to the existing 250 mm sanitary sewer on Hounslow Avenue. The groundwater pumping rate has been determined by the mechanical engineer. See letter from site's mechanical engineer in Appendix G. The groundwater pumping rate of 0.63 L/s (10 US GPM) has been included in the sewer capacity analysis. As per City requirements, a flow meter and sampling port will be installed on the groundwater discharge line before it connects to the sanitary control manhole located at the property line. The downstream sewer capacity analysis in Appendix D includes the groundwater pumping rate in the post-development flows.

The sewer capacity analysis included in this report includes the post-development flow rate from the site. For construction dewatering, a provision will be made to discharge 87,000 L of storm water per day. The maximum construction pumping rate will be kept below the post-development total sanitary sewage rate of 6.37 L/s (includes peak sanitary sewage of 5.74 L/s and permanent groundwater pumping of 0.63 L/s). As noted, details of the short-and long-term private water discharge systems will be provided in the Private Water Discharge Permit Application that will be submitted to Toronto Water under separate cover.

6 CONCLUSION

6.1 WATER SERVICING

The water servicing for the proposed development can be summarized as follows:

- A 200mm diameter 'h'-type water service is proposed to provide domestic and fire connections for the proposed development. This will provide the development with the required watermain supply/flow.
- Connection will be made from the existing 150mm diameter watermain within Hounslow Avenue.
- A new hydrant is proposed in front of the proposed site in order to comply with required maximum distance requirements to the proposed Siamese connection.
- Results of the hydrant flow test show that the existing watermain has sufficient pressure to provide the required minimum pressure for fire suppression for the structure.

6.2 SANITARY SERVICING

The sanitary servicing for the proposed development can be summarized as follows:

- The wastewater from the proposed development will be drained to the existing 250mm diameter sanitary sewer within Hounslow Avenue via a 200mm diameter sewer which is to be laid at 2%.
- The sanitary connection will be made to a new sanitary manhole within Hounslow Avenue directly in front of the proposed development.
- The wastewater system will be a gravity system.
- Flows produced due to groundwater pumping will outfall to the sanitary sewer system.
- The downstream sanitary system has sufficient capacity to accommodate the additional flow from the proposed development.
- The proposed grading plan will allow for the sanitary services to be installed with required minimum/maximum depths and any connections will not conflict with other existing/proposed services.

6.3 STORM SERVICING

The storm servicing for the proposed development can be summarized as follows:

- Stormwater to discharge to the existing 675mm diameter storm sewer within Hounslow Avenue.
- The on-site quantity control measures will be provided in accordance with the WWFMG and will improve the current condition by reducing the contributing peak flow to the storm sewer.
- The stormwater discharge from the site will comply with requirements for erosion, water quality and quantity control.
- Stormwater management details provided within a separate report provided by WSP.





APPENDIX A THEORETICAL DOMESTIC WATER DEMAND CALCULATIONS

Project: 26 Hounslow Avenue Job No.: CA0003234.0568

Proposed Development

Reside	ential Unit Type	Population per Unit	Total Res. Units	Total Residential Population ¹				
S	uite/Studio	1.4	15	21				
	1B/1B+D	1.4	199	279				
	2B/2B+D	2.1	61	128				
	3B	3.1	30	93				
	Totals		305	521				
Unit Type	Gross Floor Area	Population ¹	Average Wa (191 L/	ter Demand cap/d)²	Peaking Factor ³	Peak Water Demand	Max Day Factor ³	Max Day Water Demand
	(m ²)		(L/s)	(m ³ /day)		(L/s)		(L/s)
Residential	19,400	521	1.151	99.45	2.50	2.88	1.30	1.50
	Total	521	1.15	99.45		2.88		1.50

Note 1: Population per unit according to City of Toronto Design Criteria for Sewers and Watermain, January 2021;

Note 2: Water Demand for Multi-Unit Buildings, per City of Toronto Design Criteria for Sewers and Watermain, January 2021;

Note 3: Peaking Factor for residential uses = 2.50 per City of Toronto Design Criteria for Sewers and Watermain, January 2021;



B FUS FIRE FLOW CALCULATIONS AND HYDRANT FLOW TEST RESULTS

APPENDIX B

FIRE FLOW CALCULATIONS

Proj26 Hounslow Avenue Job CA0003234.0568

Fire flow required for a given area based on Fire Underwriters Survey (FUS) Water Supply for Public Fire Protection (2020)

$$F = 220 \ C \sqrt{A}$$

where

- F = Fire flow in Litres per minute (Lpm)
- C = coefficient related to the type of construction
- A = total floor area in square metres

Calculations per FUS

Estimate of Fire Flow
C = 0.6 for fire resistive construction
A = 1737 m² (largest GFA plus 25% of GFA for two immediately adjoining floors)

F = 6,000 Lpm (rounded to nearest 1000 L/min)

2. Occupancy Reduction

25% reduction based on low hazard occupancy ('hotel, gym, apartment')

25% reduction of 6000 Lpm =	1,500	Lpm
F = 6000 - 1500 =	4,500.00	Lpm

3. Sprinkler Reduction 30% reduction for NFPA Sprinkler System

30% reduction	on of 4500 Lpm =	1,350	Lpm
F =	4500 - 1350 =	3,150	Lpm

4. Separation Charge

,	0					
Face	Distance (m)	Charge				
West Side	1	25%				
East Side	19	15%				
North Side	35	0%				
South Side	25	10%				
	Total	50%	of	4,500	=	2,250 Lpm
F = F = F =	3150 + 2250 5,000 Lpm 1,319 US GPM		(2,00	0 Lpm < F <	< 45,	000 Lpm; OK)

Notes

- 1. GFA based on Building Statistics provided by Architect Studio JCI on March 22, 2024
- 2. Assumes that the vertical openings and exterior vertical communications are properly protected (one hour rating)
- 3. Building construction type to be fire-resistive based on the Fire Resistive Construction Letter provided by Architect Studio JCI on March 25, 2024, attached in this Appendix.
- 4. Fully automatic sprinkler protection, monitored, standard water supply as noted in FUS Part II No. 3
- 5. The areas used in the calculation is the fourth floor, plus 25% of the third and fifth floors

STUDIO JCI

March 25th, 2024

Toronto Building Department 100 Queen Street West, Toronto, ON M5H 2N2



RE: Fire Resistive Construction Letter 26-38 Hounslow Ave., North York, ON M2N 2A8

Dear Chief Building Official,

Please be advised that the above-referenced proposed development will be constructed in compliance with the 2015 Ontario Building Code (OBC), and equipped with a Fire Protection System conforming the NFPA 13 Standards for Installation of Sprinkler Systems and specifically:

- 1. All structural members and floors will be of fire resistive construction per the Fire Underwriters Survey (FUS) 2000 with 2-hour ratings per the OBC, and
- 2. All vertical openings and exterior vertical communications will be constructed with a 1-hour fire rating.

Should you have any questions or concerns, please contact Sudipto Sengupta (<u>ssengupta@studiojci.com</u>).

Kind regards,

Jaegap Chung, OAA, MRAIC Principal

CC. Billy Caden, Mattamy Homes Canada David Morse, Bousfields

STUDIO JCI

Item	Description	Compliance (Yes/No)
1.0	Site Plan	
1.1	Sidewalks minimum 1500mm wide (DOPS)	Yes
1.2	Curb Ramps minimum 1500mm wide and flared sides (TAIs)	Yes
1.3	Overhead Clearance minimum 2100mm above finished floor (DOPS)	Yes
1.4	Path - Stable, firm, slip-resistant	Yes
1.5	Path of Travel minimum 1100mm with minimum 1800mm x 1800mm layby space every 30m if the Path of Travel is less than 1600mm	Yes
2.0	Parking Level	
2.1	Overhead Clearance from parking entrance to accessible parking minimum 2100mm above finished floor	Yes
2.2	Accessible Parking Spaces	Yes
2.3	Signage at Accessible Parking Spaces (ISA)	Yes
2.4	Access Aisles	Yes
2.5	Curb ramps where level change is 200mm (maximum) or less	Yes
2.6	Accessible entrance into building	Yes
2.7	Vestibule minimum 1500mm for doors in series, minimum 1500mm turning circle for un-aligned doors (2400mm recommended)	Yes
2.8	Served by a passenger elevator	Yes
3.0	Building Entrance	
3.1	Barrier-free entrances to satisfy the OBC	Yes
3.2	Door clear width minimum 860mm	Yes
3.3	Designated barrier-free leaf (where multiple doors)	Yes
3.4	Accessible door hardware (lever style handles, D or U-shaped handles)	Yes
3.5	Power door operator minimum 900mm - maximum 1100mm above finished floor; minimum 600 mm - maximum 1500 mm from door swing where door swings towards control of Proximity scanning devices	Yes
3.6	Vestibule minimum 1500mm for doors in series, minimum 1500mm turning circle for un-aligned doors (2400mm recommended)	Yes
3.7	Accessible door threshold (maximum 13mm)	Yes
3.8	Signage incorporating the international Symbol of Access (ISA)	Yes
3.9	Minimum 1100mm path of travel (Recommended 1800mm)	Yes
4.0	General Requirements for All Spaces and Common Circulation	
4.1	Door clear width minimum 860mm	Yes
4.2	Latch-side clearance minimum 600mm (pull side), minimum 300mm (push side)	Yes

STUDIO JCI

4.3	Level floor area at door (Door width + LSC) x (1100mm - 1500mm)	Yes
4.4	Power door operator where latch-side clearance is not met	Yes
4.5	Minimum 1100mm path of travel (recommended 1800mm)	Yes
4.6	Minimum 1800mm x 1800mm every 30m if the Path of Travel is less than 1600mm	Yes
4.7	Ramp maximum slope 1 in 12 (8.3%), 1670mm landings, demarcation of edge	Yes
4.8	Vestibule minimum 1500mm for doors in series, minimum 1500mm turning circle for un-aligned doors (2400mm recommended)	Yes
4.9	Tactile Indicators at the top of all stairs and landings served by a door	Yes
4.10	Finishes with no glare, minimum 70% tonal contrast between wall and door	Yes
5.0	Amenity	
5.1	Power door operator (minimum 900mm - maximum 1100mm above finished floor), minimum 600mm - maximum 1500mm from door swing where door opens towards control	Yes
5.2	Accessible washroom (multi-stall, with barrier-free stall)	Yes
5.3	Universal washroom	Yes
5.4	Wall reinforcement for grab rails in all washrooms	Yes





THEORETICAL SANITARY SEWAGE FLOWS

Project: 26 Hounslow Avenue Job No.: CA0003234.0568

Estimated CURRENT Sanitary Flow from Site

Current Site	Site Area	Equivalent Population	Average Residential Flow (assume 240 L/p/d)		Peaking Factor	Infiltration over site	Total Peak Flow
	(ha)		(L/s)	(m³/day)		(L/s)	(L/s)
Detached Homes	0.216	37	0.10	8.8	4.3	0.06	0.50

Estimated FUTURE Sanitary Flow from Site

Proposed Site	Population per Unit ¹	Total Units	Total Equivalent Population
Suite/Studio	1.4	15	21
1B/1B+D	1.4	199	279
2B/2B+D	2.1	61	128
3B	3.1	30	93
Totals		305	521

1 - Population per unit as per City of Toronto Design Criteria for Sewers and Watermains, June 2019

Theoretical FUTURE Sanitary Flow from Site

Proposed Site	Site Area Equival Populat		Average Residential Flow (assume 240 L/p/d)		Average Residential Flow (assume 240 L/p/d)		Average Residential Flow (assume 240 L/p/d)		Equivalent Average Residential F Population (assume 240 L/p/d)		Residential Peaking Factor	Groundwater Pumping rate	Total Peak Flow
	(ha)		(L/s)	(m³/day)		(L/s)	(L/s)						
Residential - Apartment	0.216	521	1.45	125.0	3.97	0.63	6.37						
						Totals	6.37						

Existing Equivalent Population based on 170 persons/ha for townhouse type developments

Residential is based on 240 L/cap/d, per City of Toronto Design Criteria for Sewers and Watermain, January 2021

Residential Peaking Factor = Harmon Formula

Commercial Peaking Factor included in average flow

Infiltration = 0.26 L/ha/s as per City of Toronto Design Criteria for Sewers and Watermain, January 2021. No infiltration allowance

for new development as pipes are installed within u/g parking.

Units counts and Floor Areas as per Architectural drawing from March 2024

APPENDIX

DOWNSTREAM SANITARY SEWER ANALYSIS (INCLUDED SEPARATELY)

APPENDIX

Е

SANITARY SEWER INVESTIGATION BY AQUAFLOW





226 WILKINSON ROAD, BRAMPTON, ONTARIO L6T 4N7 (905) 792-8169

SANITARY SEWER VIDEO INSPECTION REPORT

250 MM DIAMETER SANITARY SEWERS

FOR

26 HOUNSLOW AVENUE

CITY OF TORONTO

DVD # 20012

CONSULTANT: WSP CONSULTANT'S REPRESENTATIVE: DA-SHARA QUANT DEVELOPER: MATTAMY HOMES DEVELOPER'S REPRESENTATIVE: ADAM TARAPACKY

WEDNESDAY, JANUARY 29TH, 2020

INDEX:

- 1. TITLE PAGE AND INDEX
- 2. SUMMARY REPORT AND CONCLUSIONS
- 3. SKETCH OF SEWERS INSPECTED
- 4. SEWER INSPECTION REPORTS

SEWER CLEANING, VIDEO INSPECTION, INSITU REPAIRS & MUNICIPAL ENGINEERING SERVICES

2. SUMMARY REPORT AND CONCLUSIONS:

The video inspection of the sanitary sewers for 26 Hounslow Avenue was carried out by Steven Lostracco, P.Eng. of Aquaflow Technology, and was authorized by Da-Shara Quant of WSP. The sanitary sewers were power flushed immediately prior to video inspection. The video inspections were carried out on Wednesday, January 29th, 2020.

SANITARY SEWERS VIDEO INSPECTED:

DVD # 20012:	250 mm diameter	
	Sanitary sewers inspected	<u>57.1 m</u>

TOTAL LENGTH OF SEWERS VIDEO INSPECTED:57.1 M

The video inspection confirmed that all of the sewer lines inspected are in satisfactory condition, with the following summary comments. For detailed comments on each sewer run, please refer to the attached sewer video Inspection report.

- 1. 26 Hounslow Avenue, EX-SAN-2 to EX-SAN-1, 250mm PVC, sanitary: Camera observed multiple connections located at 7.3m, 11.0m, 11.9m and 23.0m, (survey #1)
- 2. 26 Hounslow Avenue, EX-SAN-2 to EX-SAN-3, 250mm PVC, sanitary: Camera observed single connection located at 28.0m, (survey #1).

Report Prepared by:

Steven Lostracco, P. Eng.



MATTAMY Sewer TV Inspection Report Summary Page: 1 of 1

No.	Date	Street	Start MH	Finish MH	Surv'd Len	Video
1	2020-01-29	26 HOUNSLOW AVENUE - SANITARY	EX-SAN-2	EX-SAN-1	28.0 m	20012
2	2020-01-29	26 HOUNSLOW AVENUE - SANITARY	EX-SAN-2	EX-SAN-3	29.1 m	20012

			MA Sewer TV In:	TTAMY spection Report	:		I	Page: 1	of 1
Survey No: PipeLenRef: Contractor: Catchment: Street:	1 EX-SAN-2 AQUAFLOW 26 HOUNSI	X LOW	Date: Status: Contract No: Division: AVENUE - SANIT	2020-01-29 Completed S 1-SAN - ARY	Surveyed	T Len Job Distr C	dime: gth: No: ict: lity:	12:46 028.0 1 - TORONT	m 'O
Start MH: Depth: Finish MH: Depth:	EX-SAN-2 00.00 m EX-SAN-1 00.00 m		Location: Cover: Location: Cover:	SIDEWALK S-EAS 000.00 m HONSLOW AVE AT 000.00 m	ST HSE ‡ S HSE #	‡ 26 Inv 36 / Inv	ert: 38 ert:	000.00	m m
PipeLength: Use: Lining: Weather:	4.00 m Sanitary Dry		Size (Dia): Material: Purpose: Location Code:	0250 mm Polyvinyl Chlc Assessment Urban Street	Total pride Di Pre-c	Len Sh Categ Irect	gth: ape: ory: ion:	028.0 Circul Not Kn Downst	m ar .own ream
Year Laid: Video Tape:	20012		Location: Comments:		110 0	21 Cull	.1119 -	100	
Structural Operational	Grade: 1 Grade: 1		Total Score: Total Score:	0 Peak Sc 0 Peak Sc	core: core:	0 0	Mean Mean	Score: Score:	0 0
Index Pho I 0:00:12 0:00:16 0:00:23 0:01:11 0:01:42 0:01:53 0:02:45 0:03:23 0:03:27	Dist CD (000.0 000.0 007.3 011.0 011.9 023.0 028.0	Code ST MH WL CN CN CN CN CN MH FH	e Description/Re Start of Sur Downstream (w Manhole EX-SAN-2 Water Level Connection Connection Connection Connection Manhole EX-SAN-1 Finish of Su:	emarks vey with flow) rvey	1 1 1 1 1 1	Dim L00mm L00mm L00mm L00mm	Cloc 10 10 10 10 2	ck Int 00%	Score

			MA Sewer TV In:	TTAMY	n Repc	ort]	Page: 1 of 1
Survey No: PipeLenRef: Contractor: Catchment: Street:	2 EX-SAN-3 AQUAFLOW 26 HOUNSL	X JOW	Date: Status: Contract No: Division: AVENUE - SANIT	2020-0 Comple 1-SAN - ARY	1-29 ted	Survey	T yed Len Job Distr C	ime: gth: No: ict: ity:	12:59 029.1 m 1 - TORONTO
Start MH: Depth: Finish MH: Depth:	EX-SAN-2 00.00 m EX-SAN-3 00.00 m		Location: Cover: Location: Cover:	SIDEWA 000.00 SIDEWA 000.00	LK S-E m LK EAS m	CAST HSE	E # 26 Inv SE # 26 Inv	ert: ert:	000.00 m 000.00 m
PipeLength: Use: Lining: Weather:	4.00 m Sanitary Dry		Size (Dia): Material: Purpose: Location Code:	0250 m Polyvi Assess Urban	m nyl Ch ment Street	Tot loride	cal Len Sh Categ Direct	gth: ape: ory: ion: ing:	029.1 m Circular Not Known Upstream
Year Laid: Video Tape:	20012		Location: Comments:			FIG	e crean	·······································	165
Structural Operational	Grade: 1 Grade: 1		Total Score: Total Score:	0 0	Peak Peak	Score: Score:	0 0	Mean Mean	Score: 0 Score: 0
Index Pho I 0:00:10 0:00:14	Dist CD C 000.0 000.0	ode ST MH	e Description/Re Start of Surv Upstream (aga Manhole EX-SAN-2	emarks vey ainst f	low)		Dim	Clo	ck Int Score
0:00:17 0:02:07 0:02:28 0:02:34	000.0 028.0 029.1	WL CN MH FH	Water Level Connection Manhole EX-SAN-3 Finish of Sur	rvey			100mm	10	00%



226 WILKINSON ROAD, BRAMPTON, ONTARIO L6T 4N7 (905) 792-8169

SANITARY SEWER LATERAL VIDEO INSPECTION REPORT

100 MM DIAMETER SANITARY HOUSE LATERAL

FOR

26 HOUNSLOW AVENUE

CITY OF TORONTO

DVD # 20068

CONSULTANT: WSP CONSULTANT'S REPRESENTATIVE: RISTO YLIPAHKALA DEVELOPER: MATTAMY HOMES DEVELOPER'S REPRESENTATIVE: ADAM TARAPACKY

MONDAY, MARCH 16TH, 2020

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SEWER CLEANING, VIDEO INSPECTION, INSITU REPAIRS & MUNICIPAL ENGINEERING SERVICES

2. SUMMARY REPORT AND CONCLUSIONS:

The video inspection of the sanitary house lateral for 26 Hounslow Avenue was carried out by Steven Lostracco, P.Eng. of Aquaflow Technology, and was authorized by Risto Ylipahkala of WSP. The video inspection was carried out on Monday, March 16th, 2020.

SANITARY SEWER VIDEO INSPECTED:

DVD # 20068:	100 mm diameter	
	Sanitary house lateral inspected	<u>3.0 m</u>

TOTAL LENGTH OF SEWERS VIDEO INSPECTED: <u>3.0 M</u>

The video inspection confirmed that all of the sewer lines inspected are in satisfactory condition, with the following summary comments. For detailed comments on each sewer run, please refer to the attached sewer video Inspection report.

1. 26 Hounslow Avenue, SEWER TEE to PLUG, 100mm PVC, sanitary: CCTV inspection carried out from main sewer tee towards building, the sewer lateral is capped at 3.0m West of main sewer (survey #1).

Report Prepared by:

Steven Lostracco, P. Eng.



		MATTAM Sewer TV Inspection	Y Report Summary	Page: 1 of 1
No.	Date	Street	Start MH Finish MH	Surv'd Len Video
1	2020-03-16	26 HOUNSLOW AVENUE - SANITARY	TEE PLUG	3.0 m 20068

		Sewer TV In	spection Repo	rt]	Page: 1 of 1	1
Survey No: PipeLenRef: Contractor: Catchment: Street:	1 PLUG 2 AQUAFLOW - 26 HOUNSLOU	Date: Status: Contract No: Division: N AVENUE - SANIT	2020-03-16 Completed 1-SAN - ARY	Surveyed Di	Time: Length: Job No: .strict: City:	20:40 003.0 m - TORONTO	
Start MH: Depth: Finish MH: Depth:	TEE 00.00 m PLUG 00.00 m	Location: Cover: Location: Cover:	EASEMENT N-E 000.00 m EAST SIDE OF 000.00 m	HSE #26 H #26 HOUNS	HOUNSLOW Invert: SLOW AVE Invert:	000.00 m 000.00 m	
PipeLength: Use: Lining: Weather:	4.00 m Sanitary Dry	Size (Dia): Material: Purpose: Location Code:	0100 mm Polyvinyl Ch Assessment Urban Street	Total loride Ca Dir	Length: Shape: ategory: cection:	003.0 m Circular Not Known Upstream	
Year Laid: Video Tape:	20068	Location: Comments:		pre-ci	eaning.	NO	
Structural Operational	Grade: 1 Grade: 1	Total Score: Total Score:	0 Peak 0 Peak	Score: Score:	0 Mean 0 Mean	Score: (Score: () 0
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0:01:53	003.0 G) General Obse	rvation				
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0:03:21	003.0 FI	I Finish of Su	rvey				

MATTAMY



CITY OF TORONTO ARCHIVE DRAWINGS



APPENDIX G LETTER- MAXIMUM GROUNDWATER

PUMPING RATE BY TRACE ENGINEERING



TRACE ENGINEERING LTD.

505 Consumers Road, Unit 904 Toronto, Ontario M2J 4V8 Tel: 416 391 2633 www.trace-engineering.com

Date: September 28, 2023

Attention: Executive Director, Engineering and Construction Services c/o Manager, Development Engineering 55 John Street, 16th Floor Toronto, Ontario M5V 3C6

Cc: General Manager, Toronto Water c/o Manager, Environmental Monitoring and Protection Unit 30 Dee Ave, Toronto ON M9N 1S9

Our project no. Hounslow (19-028)

Dear Sir or Madam,

This letter is to confirm that groundwater from the Private Water Drainage System will be collected and discharged into the SANITARY control manhole of the site located at 26-38 Hounslow Ave, Toronto, Ontario, at a maximum peak flow rate of 0.63L/sec.

The groundwater sump pumps will be sized at 0.63L/sec and are expected to run approximately 17.2 hours per day.

This peak flow rate will be used for assessing capacity for the peak discharge flow into the City's SANITARY sewer system.

Once the proposed groundwater peak flow rate of 0.63 L/sec is approved by Engineering Construction Services (ECS), City of Toronto at the Re-Zoning stage, the property owner will not be allowed to amend this flow rate in the future. Should there be any amendment to the peak flow rate of 0.63L/sec in future, the property owner shall re-submit either the updated pump schedule or a revised letter to ECS. In addition, the sewer capacity will need to be re-assessed.

Hery /m

Harley L. Yamson, P. Eng

Name (printed)



APENDIX H SITE SERVICING AND SITE GRADING PLANS (INCLUDED SEPARATELY)