November 4, 2024

Pratt Hansen Group Inc.
35 Worsley Street
Barrie, ON
L4M 1L7

Project No.: 5222

SCHAEFFERS
CONSULTING ENGINEERS

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Attention: Mr. Duncan Richardson, P.Eng.
Partner

RE: Water Supply Modelling Analysis Memorandum
Watermain Servicing for Hewitt's South Development
City of Barrie

1. Introduction

Schaeffer & Associates Ltd. has been retained by Pratt Hansen Group Inc. to provide a water supply analysis for the Hewitt's South development located north of Lockhart Road between Yonge Street and 20th Sideroad in the City of Barrie, thereafter referred to as the subject site. Schaeffers Consulting Engineers (SCE) have previously analyzed potential servicing solutions for the Hewitt's Gate East-South subdivision development encompassing the subject site under a separate cover. SCE has also completed another analysis for phasing alternatives for the Hewitt's Central subdivision, north of the subject site. The objective of this water supply analysis will be to build upon the previous analyses and assess various servicing scenarios for the subject site.

2. Scope of Work

The purpose of the memorandum is to analyze the watermain network system when the subject site and the surrounding developments are built, as well as two interim scenarios prior to the construction of the future surrounding developments. The proposed watermain network system will be analyzed with regards to available pressure, head loss, pipe velocity, and water turnover rates during domestic and fire flow demand situations while conforming to applicable guidelines.

Based on the timeline of construction for the Hewitt's South development alongside the Hewitt's Central subdivision and the development at 960 Lockhart Road, three servicing scenarios have been devised as follows:

1) **Interim Scenario 1:** Development of Hewitt's South and Central subdivisions with no connections to the Bulut subdivision (north) or along the future Terry Fox extension

(north-east). The subject site is only serviced with connections made at Prince William Way (PWW) and Lally Terrace;

2) **Interim Scenario 2:** Development of Hewitt's South and Central subdivisions with connections made to Bulut subdivision and the future Terry Fox extension; and,

3) **Ultimate Scenario:** Development of Hewitt's South and Central subdivisions, and the 960 Lockhart Road site, with complete construction of Lockhart Road and Yonge Street to provide watermain looping to the subject site.

The servicing scenarios will be analyzed using the latest City of Barrie's InfoWater model to ensure domestic and fire demands are adequately supplied. The model will also determine the water age within the proposed network to ensure water quality is not compromised.

The Draft Plan of Subdivision (refer to **Attachment 1**) has been provided by Jones Consulting Group Ltd. which has been used to establish population and water demands for the subject site and external developments.

3. Water Supply Design Criteria

The City of Barrie and Ministry of Environment, Conservation and Parks (MECP) design criteria were referenced to determine the required flows and confirm the required pressures are achieved throughout the water supply system.

- Per City of Barrie Water Transmission and Distribution Policies and Design Standard (June 2022) and MECP Design Guidelines for Drinking Water Systems (2008), pressure throughout the system shall not be less than 20 psi during the Maximum Day Demand plus Fire Flow scenario. During domestic Average Day, Maximum Day, and Peak Hour Demand scenarios, a minimum pressure of 40 psi and maximum pressure of 100 psi shall be maintained throughout the system.

- Water demand was calculated using an average daily demand of 225 L/cap/day.

- A Maximum Day Demand peaking factor established based on the MECP Design Guidelines for Drinking Water Systems (2008). The MECP peaking factors were achieved in conjunction with the City of Barrie's diurnal demand patterns PAT2S-CAL-

RES and PAT2S-CAL-NON_RES which were used for residential and non-residential demands, respectively.

- The minimum required fire flow demands based on the City of Barrie design standards is as follows:

Residential:	100 L/s
Townhouse:	155 L/s
Apartment:	200 L/s
Commercial:	283 L/s
Institutional:	200 L/s

The fire flow demands can be revised during the detailed design stage in accordance with the Fire Underwriters Survey (FUS) criteria.

- Per City of Barrie design standards, a maximum velocity of 1.5 m/s is permitted during Average Day Demand and Maximum Day Demand scenarios, and a maximum velocity of 5 m/s is permitted during the Maximum Day plus Fire Flow scenario.

- Maximum head loss gradient under normal operating pressures is 2.5 m/km.

- The Hazen-Williams formula was applied for computing the size of watermain pipes. The Hazen-Williams "C" values used in the model are listed below.

Table 1: Hazen-Williams Coefficients

Pipe Diameter(mm)	Hazen-Williams Coefficient
150	100
200 – 250	110
300 – 450	120
600 and larger	130

4. Boundary Conditions

The boundary conditions for the InfoWater model were adopted from the City of Barrie's Water Supply model that was refined for the Hewitt's Gate South-East subdivision. The model is simulated for an extended duration of 240 hours (10 days) for the domestic demand scenarios.

The previous analysis validated the water supply model by conducting a fire hydrant test for the existing watermain along Mapleview Drive East, north of the subject site. The results of the field test yielded a static pressure of 72 psi. This result was validated after modelled pressures for the closest junction (node 2S518) yielded a range of pressures between 70.86 psi and 78.77 psi, thus encompassing the field test results.

Additionally, elevations of the watermain network system have been assumed to be maintained from the previous study. Once detailed grading plans are made available, the model is to be revised and analyzed.

5. Water Supply Analysis and Results

The subject site will consist of single-residential homes, medium-density residential blocks, and a commercial block resulting in a total estimated population of 3122. The domestic demands have been calculated for the subject site based on a consumption rate of 225 L/cap/day as per the City's guidelines. The MECP peaking factors of 2.00 and 3.00 were used for the Maximum Day Demand (MDD) and Peak Hour Demand (PHD) scenarios, respectively. **Table 2** below summarizes the latest domestic demands for Hewitt's South and Central developments, and the 960 Lockhart Road development. For detailed calculations of population and water demands, please refer to **Attachment 2** appended to this memo.

Table 2: Water Supply Demands for Subject Site and Surrounding Developments

Site	Population	Average Day Demand (L/s)	Maximum Day Demand (L/s)	Peak Hour Demand (L/s)
Hewitt's South (Subject Site)	3122	8.24	16.49	24.73
Hewitt's Central	997	2.77	7.62	11.44
960 Lockhart Road	1253	3.26	8.16	12.24

It is important to note that the City of Barrie's model utilizes a diurnal demand pattern to simulate demand variations throughout a single day. The peak demands modelled with these diurnal patterns should be equivalent to the demands established above in **Table 2** for each demand scenario, which are based on the MECP peaking factors. As a result, the average demands inputted into the model for each demand scenario are reduced when the City's diurnal

patterns are applied. Please note that this adjustment applies solely to the subject site and the developments listed in **Table 2**. The demands of existing subdivisions remain unchanged in the model. For further details regarding the calculation of the demands used in the model, refer to **Attachment 2**.

Fire flow demands for the subject site were calculated by Jones Consulting Group Ltd. in accordance with the FUS criteria (refer to **Attachment 1**). The medium-density blocks in the subject site require the greatest fire flow demands ranging from 217 L/s to 300 L/s. The fire flow demands for the proposed external developments at Hewitt's Central and 960 Lockhart Road were determined using the City of Barrie's recommended minimum required fire flows based on tenure type. The fire flow demands for the Hewitt's Central development ranged from 100 L/s to 155 L/s based on single-residential and townhome units. The 960 Lockhart Road development has been modelled with a fire flow demand of 200 L/s based on apartment housing. During detailed design, the fire flows may be refined if necessary to provide further fire-preventative measures such as using fire-resistive construction or the addition of fire walls.

Normal Operational Conditions

The three servicing scenarios have been analyzed for normal operating conditions. The Average Day Demand (ADD), Maximum Day Demand (MDD), and Peak Hour Demand (PHD) scenarios were modelled to assess the watermain network system for pressure, pipe velocity, and head loss. The modelling results for Interim Scenario 2 under MDD show three nodes located in the southeast corner of the subject site experiencing pressures below 40 psi. Nodes B19, J283, and J285 experience low pressures ranging from 37.65 psi to 38.43 psi. There were no other pressure deficiencies observed for the proposed developments in the remaining scenarios. The model results for all three servicing scenarios are summarized in **Tables 4 – 6** below.

The low pressures observed at these nodes in the model are represented as sudden pressure drops that last for less than 10 minutes and are familiar throughout pressure zone 2S. After consultation with City staff however, it is understood that these pressure drops are exclusive to the water supply model and are contrary to results obtained from field work. Therefore, since the pressure deficiencies observed in the model are minor, and based on the fact that the behaviour of the pressure drops seen across the pressure zone in the model are not supported by field observations, it is not expected that the development of the subject site will cause any adverse impacts to the water supply network for all three servicing scenarios under normal operating

conditions. A graphical depiction of the pressure drops has been included in **Attachment 3**, and the consultation with City staff can be referenced in **Attachment 1**.

Table 4: Interim Scenario 1 – Water Supply Model Pressure Results

Average Pressure (psi)	Average Pressure Range (psi)	Minimum Pressure (psi)	Maximum Pressure (psi)
Average Day Demand			
68.34	59.09 – 73.32	52.68	77.50
Maximum Day Demand			
68.03	58.77 – 73.00	41.53	77.74
Peak Hour Demand			
67.88	58.62 – 72.86	45.53	77.64

Table 5: Interim Scenario 2 – Water Supply Model Pressure Results

Average Pressure (psi)	Average Pressure Range (psi)	Minimum Pressure (psi)	Maximum Pressure (psi)
Average Day Demand			
68.33	59.07 – 73.30	51.85	77.68
Maximum Day Demand			
67.77	58.51 – 72.74	37.65	77.87
Peak Hour Demand			
67.66	58.40 – 72.65	44.22	78.06

Table 6: Ultimate Scenario – Water Supply Model Pressure Results

Average Pressure (psi)	Average Pressure Range (psi)	Minimum Pressure (psi)	Maximum Pressure (psi)
Average Day Demand			
68.10	58.18 – 73.26	50.49	77.23
Maximum Day Demand			
67.66	57.74 – 72.83	43.73	78.14
Peak Hour Demand			
67.52	57.58 – 72.69	42.32	77.99

It is also noteworthy that these results may be changed once detailed grading information is made available for the subject site as well as for the 960 Lockhart Road development.

Furthermore, pipe velocities under all demand scenarios were below 1.5 m/s (as specified by the City of Barrie guidelines) for the three servicing scenarios. Similarly, head loss has been maintained below 2.5 m/km as per the City's guidelines.

Fire Flow Conditions

The subject site has been analyzed for interim and ultimate conditions to ensure sufficient fire protection is provided under safe operating conditions. Fire demands have been calculated based on the FUS criteria as discussed above.

The fire flow model simulation results, shown below in **Table 7**, illustrate that there are two nodes (J874 and J285) located on the southeast corner of the subject site that are incapable of providing sufficient fire flow under Interim Scenario 1 prior to the construction of the Terry Fox watermain extension. Modelling results for Interim Scenario 2 demonstrate these deficiencies are resolved with the construction of the Terry Fox watermain, and its connection to the source.

Although these nodes are able to supply fire flows between 281 L/s to 293 L/s, the required fire flow for the medium-density block located in this area is 300 L/s based on the FUS calculations, and 283 L/s for the commercial block based on the City of Barrie guidelines. As a result, the commercial block and Buildings F and J cannot be serviced prior to the Terry Fox watermain extension is in service unless additional fire-preventative measures are in place. Further fire-preventative measures may include altering the building construction design to become fire-resistive, or adding more fire walls.

Under Interim Scenario 2 and Ultimate scenario, all nodes within the subject site exceed a residual pressure of 20 psi under fire flow simulations.

Table 7: Fire Flow Scenario Model Results

Scenario	Fire Flow Demand Range (L/s)	Hydrant Available Flow Range (L/s)	Residual Pressure Range (psi)
Interim 1	100 – 300	275.24 – 348.70	17.55 – 48.87
Interim 2	100 – 300	290.57 – 433.23	27.12 – 50.35
Ultimate	100 – 300	280.20 – 531.52	33.70 – 53.84

6. Water Age Analysis

Watermain and junction water age were modelled in InfoWater to ensure sufficient renewal of the potable water in the proposed infrastructure for the subject site and the surrounding proposed developments under each servicing scenario. The model was simulated for an extended duration period of 240 hours. The required water age is 3 to 5 days per the City of Barrie's guidelines.

The water age analysis was first modelled for Interim Scenario 1, which demonstrated a maximum water age of 52.83 hours (2.20 days) for all nodes within the proposed developments. The maximum pipe water age was 56.59 hours (2.36 days). Therefore, the water age for all nodes and pipes under this scenario is below 3 days.

Under Interim Scenario 2, the maximum water age modelled for nodes was 58.90 hours (2.45 days), and 98.13 hours (4.09 days) for pipe P4936 located in the Hewitt's Central development. All other pipes modelled water ages of less than 3 days.

Furthermore, it is recommended to propose a twin-pipe solution for the watermain going through the medium-density block to reduce the water age. A 150mm watermain is proposed to service the local domestic demands, and a 300mm parallel watermain will be in place to provide fire protection. Please note, the watermain within the medium-density block is privately-owned and will be controlled with a check valve on each end. The water supply analysis for the subject site has been completed assuming two separate pipes for the domestic water demand and fire flow scenarios.

Under the Ultimate scenario, there were three nodes exceeding a water age of 5 days with the maximum occurring at node J299 with 125.02 hours (5.21 days). Also, two pipes exceed a water age of 5 days at P4958 and P4800, which are both connected to node J299. The maximum pipe water age is 123.63 hours (5.15 days) occurring at P4958.

The water age in the water supply network is exceedingly larger closer to the Lockhart Road watermain. Since the subject site is the only future development modelled in the southeast corner of the City of Barrie watermain network, the large pipes proposed along Lockhart Road and Yonge Street will consequently convey large volumes of water for low demands. Therefore, it is expected that once more future developments are modelled nearby the subject site, water will be circulated more efficiently and will be renewed adequately.

7. Conclusion

The Hewitt's South development located in the Hewitt's Secondary Plan Area, was analyzed to be serviced under three servicing scenarios based on timeline of developments. The summary of the modelling analysis is summarized below.

Interim Scenario 1

It is assumed under this scenario that the subject site is constructed alongside the Hewitt's Central development located immediately north of the subject site. The proposed developments will be serviced by the Prince William Way (PWW) and Lally Terrace watermains.

Water modelling results for this servicing scenario demonstrate insufficient fire flow supply to the eastern portion of the medium-density block located in the southeast corner of the subject site. Fire flow demands were calculated by Jones Consulting Group Ltd. in accordance with the FUS criteria. Based on this assessment, the medium-density block in this region (Buildings F and J) and the commercial block cannot be developed until the Terry Fox watermain is extended to Mapleview Drive, or additional fire-preventative measures are proposed. Additional fire-preventative measures may include using fire-resistive building material or increasing fire-separating walls in these residential blocks.

Interim Scenario 2

This servicing scenario considers the subject site being serviced by watermains along PWW, Lally Terrace, Bulut Avenue, and Terry Fox. The northern subdivisions are also assumed to be constructed.

Although there are minor pressure deficiencies observed in the model under Maximum Day Demand, these pressure deficiencies are not supported by field observations as confirmed through coordination with the City of Barrie engineering staff. Therefore, the proposal of the subject site development is not expected to cause adverse impacts to the City's water supply network.

Furthermore, fire flow can be supplied sufficiently to all areas within the subject site without any deficiencies.

Ultimate Scenario

The Ultimate buildout scenario assumes the subject site is constructed alongside the Hewitt's

South and 960 Lockhart Road developments. Service is provided by watermains along PWW, Lally Terrace, Bulut Avenue, and Terry Fox. The ultimate City of Barrie water servicing along Lockhart Road and Yonge Street is assumed to have also been completed and in service.

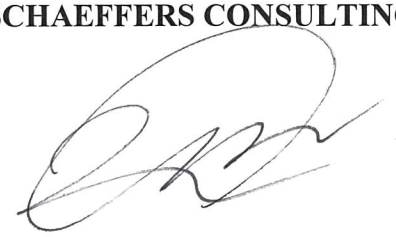
There are no pressure deficiencies observed during the modelling of this servicing scenario under Average Day Demand, Maximum Day Demand, and Peak Hour Demand conditions. All nodes in the proposed watermain network also provide sufficient pressure and flows under fire flow conditions complying with municipal guidelines.

Water age of the watermain network system under the full buildout stage was analyzed, and it was determined that the maximum water age is 5.21 days. This is expected, however, as the stagnant water found near Lockhart Road is due to insufficient demand. Once more future developments are added to the model nearby the subject site and along Lockhart Road and Yonge Street, it's expected that the water will be sufficiently renewed. This is supported by the water age analysis that has been conducted for both Interim Scenarios which shows maximum water ages of less than 5 days.

Should you have questions or comments, please do not hesitate to contact the undersigned.

Respectfully Submitted,

SCHAEFFERS CONSULTING ENGINEERS



Abdulrahman Mahfouz, EIT
Water Resources Analyst

Ming Gao, P.Eng.
Water Resources Engineer

Enclosed

Attachment 1: Background Information and Excerpts

Attachment 2: Water Supply Calculations

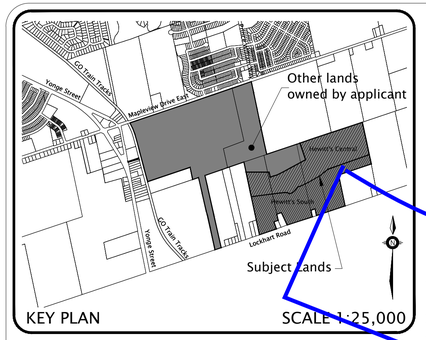
Attachment 3: InfoWater Model Results

ATTACHMENT 1

BACKGROUND INFORMATION & EXCERPTS

Composite Draft Plan of Subdivision

Part of Lot 19, and Part of Lot 20, Concession 12
Former Township of Innisfil,
Now in the
City of Barrie
2024



Block 161 Environmental Protection (4.41 ha.)
Block 84 Environmental Protection (4.61 ha.)
Block 162 Environmental Protection (1.41 ha.)
Block 85 Environmental Protection (1.40 ha.)
Block 87 Environmental Protection (0.07 ha.)
Block 163 Environmental Protection (4.53 ha.)
Block 86 Environmental Protection (3.00 ha.)
Block 157 Pedestrian Connection (0.02 ha.)
Block 158 Open Space (0.90 ha.)
Block 159 Stormwater Management (2.48 ha.)
Block 160 Stormwater Management (0.16 ha.)
Block 80 Parkland (0.50 ha.)
Block 82 Stormwater Management (1.61 ha.)
Block 77 Medium Density (58 units) (0.52 ha.)
Block 78 Medium Density (4.16 ha.)
Block 79 Medium Density (1.59 ha.)
Block 76 6 Storey Building (60 units) (0.60 ha.)
Block 94 Private Road (Access to 960 Lockhart Road) (0.06 ha.)
Block 81 Commercial (0.14 ha.)
Block 165 0.3m Reserve
Block 166 0.3m Reserve
Block 167 0.3m Reserve
Block 168 0.3m Reserve
Block 169 0.3m Reserve
Block 88 Road Widening
Block 89 Road Widening
Block 90 0.3m Reserve
Block 91 0.3m Reserve
Block 92 0.3m Reserve
Block 93 0.3m Reserve
Block 164 Future Development (0.09 ha.)
Proposed Watermain
Check valve chamber
960 LOCKHART ROAD ANTICIPATED UNIT COUNT = 750 RESIDENTIAL CONDOMINIUM UNITS
LOCKHART ROAD
ORIGINAL ROAD ALLOWANCE BETWEEN CONCESSIONS 10 AND 11

Hewitt's Central Statistics

STATISTICS	Area (ha.)	Units
★ 13.7m Singles (LOTS 19, 35, 45, 57 & 58, 62 - 80, 117 & 119)	1.38 ha.	26 units
■ 11.0m Singles (LOTS 12, 52, 91, 115 & 118)	0.21 ha.	5 units
☼ 10.4m Singles (LOTS 1 - 11, 13 - 16, 20 - 34, 36 - 44, 46 - 49, 53 - 56, 59 - 61, 81 - 90, & 92 - 114)	3.08 ha.	83 units
▼ 9.0m Singles (LOTS 17 & 18, 50 & 51, & 116)	0.19 ha.	5 units
Street Townhomes (6.0m/unit) (BLOCKS 120 - 156)	4.33 ha.	217 units
Open Space and Pedestrian Connection (BLOCKS 157 & 158	0.92 ha.	
Stormwater Management (BLOCKS 159 & 160)	2.64 ha.	
Environmental Protection (BLOCKS 161 - 163)	10.35 ha.	
Future Development (BLOCK 164)	0.09 ha.	2 units
Roads & Reserves 0.3m Reserves Blocks 165 - 167 Major Collector - Street 'A' (Prince William Way) - Street 'B' (Terry Fox Drive) Minor Collector - Street 'C' (Lally Terrace) Local Roads - Streets 'D' - 'I'	4.85 ha.	
TOTAL	28.04 ha.	338 units

Hewitt's Central Statistics

STATISTICS	Area (ha.)	Units
■ 11.0m Singles (LOT 1)	0.05 ha.	1 unit
☼ 10.4m Singles (LOTS 2 & 3, 22 - 25, & 35 - 45)	0.54 ha.	17 units
▼ 9.0m Singles (LOTS 4 - 21, 26 - 34, & 46 - 52)	0.95 ha.	34 units
Street Townhomes (6.0m/unit) (BLOCKS 64, 74 & 75)	0.24 ha.	14 units
Street Townhomes (4.5m/unit) (BLOCKS 53 - 63)	1.03 ha.	81 units
Back to Back Townhomes (7.0m/unit) (BLOCKS 65 - 73)	1.00 ha.	90 units
Medium Density (BLOCKS 76 - 79)	6.87 ha.	950 units
Open Space (BLOCKS 80)	0.50 ha.	
Commercial (BLOCKS 81)	0.14 ha.	
Stormwater Management & Drainage (BLOCKS 82 & 83)	1.62 ha.	
Environmental Protection (BLOCKS 84 - 87)	9.08 ha.	
0.3m Reserves, Private Road, and Widenings (BLOCKS 88 - 94)	0.98 ha.	
Roads 27.0m Major Collector - Street 'A' - Future 'Prince William Way' - Street 'B' - Future 'Terry Fox Drive' 18.0m Local Road - Streets 'C' & 'D' 12.0m Laneway - Laneway 'E' - 'I'	3.49 ha.	
TOTAL	26.49 ha.	1187 units

SCALE 1 : 1500 (A1)

Hewitt's Central & Hewitt's South
Composite Draft Plan of Subdivision

Date Issued:	SEPT. 25, 2024
Checked By:	RD
Project No.:	PRA-23040 & PRA-23041
Drawn By:	m.c.r.
Drawing Name:	PRA-23041-23040-DP_Sept2024.dwg

Raymond J. Duhaime REGISTERED PROFESSIONAL PLANNER R.P.P.

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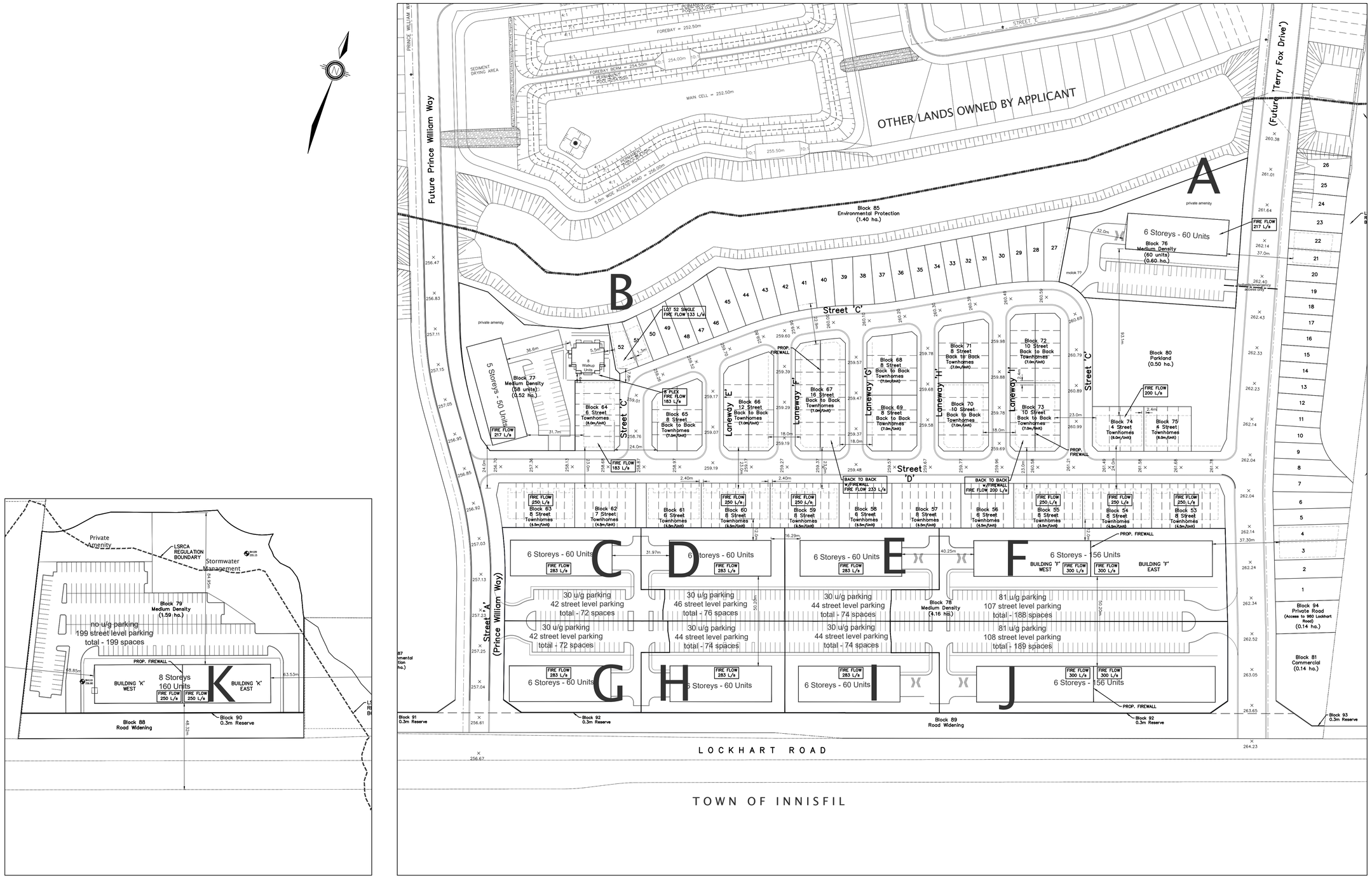
HEWITT'S CENTRAL & HEWITT'S SOUTH
CITY OF BARRIE



BENCHMARK:

NO.	REVISIONS	DATE	INITIAL

PRATT CONSTRUCTION INC.
HEWITT'S SOUTH SUBDIVISION
894 LOCKHART ROAD, BARRIE ONT

FIRE UNDERWRITER SURVEY
CALCULATIONS

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229 Mapleview Dr. E, Unit 1
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P. 705.734.2538
F. 705.734.1056

DESIGN	SCALE: 1:1000	DATE SEP 2024
DRAWN CG	PROJECT PRA-23040	DWG. Nº FUS-1
CHECKED DR		

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	Block 60 - Unit 1 to 8 Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be greater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
Block 60 8 Units	1107.40	1.5	11,000	183	-15	9,350	0	0	57.50	5,376	**15,000**	**250**

Note: GFA taken from minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 2 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building

b) Same or greater height than the fire building

c) Contains unprotected exposed openings

d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 183 L/s

(2) Building Occupancy Contents = -15 % Reduction

(3) Sprinkler System Credit = 0 % No Charge

(4) Exposure to building = 57.50 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	23.00	8.50	8.50	Conditions a), b), c) and d) are True; Assign 4/4 of Max Charge
South	12.00	14.00	7.00	Conditions b), c) are True; Assign 2/4 of Max Charge
East	2.4	21.00	21.00	Conditions a), b), c) and d) are True; Assign 4/4 of Max Charge
West	2.4	21.00	21.00	Conditions a), b), c) and d) are True; Assign 4/4 of Max Charge
		Total:	57.50	

Final Adjusted Fire Flow = **Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)**

= **15000 L/min** or **250 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	Block 64 - Unit 1 to 6 Fire Flow Calculations	Checked:	DR	
Revisions:				

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An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
Block 64 6 Units	1133.90	1.5	11,000	183	-15	9,350	0	0	37.01	3,460	**13,000**	**217**

Note: GFA taken from The Jones Consulting Group Draft plan 5A and minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 2 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building

b) Same or greater height than the fire building

c) Contains unprotected exposed openings

d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 183 L/s

(2) Building Occupancy Contents = -15 % Reduction

(3) Sprinkler System Credit = 0 % No Charge

(4) Exposure to building = 37.01 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	5.40	18.29	18.29	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
South	23.00	8.50	8.50	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
East	24.00	8.00	8.00	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
West	31.70	4.43	2.22	Conditions b), c) are True; Assign 2/4 of Max Charge
		Total:	37.01	

Final Adjusted Fire Flow = Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)

= **13000 L/min** or **217 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	Block 67 - Back to Back (Firewall Separation) Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)
C = coefficient related to the type of construction
= 1.5 for wood frame construction (structure essentially all combustible).
= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)
= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)
= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
Block 67 B2B	1279.18	1.5	12,000	200	-15	10,200	0	0	38.05	3,881	**14,000**	**233**

Note: GFA taken from The Jones Consulting Group Draft plan 5A and minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 2 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:
a) Same or poorer type of construction than fire building
b) Same or greater height than the fire building
c) Contains unprotected exposed openings
d) Unsprinklered
(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 200 L/s
(2) Building Occupancy Contents = -15 % Reduction
(3) Sprinkler System Credit = 0 % No Charge
(4) Exposure to building = 38.05 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	22.90	8.55	8.55	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
South	23.00	8.50	8.50	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
East	18.00	11.00	11.00	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
West	0.00	25.00	10.00	Fire wall seperation floors; Assign 10% Charge
		Total:	38.05	

Final Adjusted Fire Flow = **Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)**
= **14000 L/min** or **233 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	Block 73 - Back to Back (Firewall Separation) Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
Block 73 B2B	764.97	1.5	9,000	150	-15	7,650	0	0	50.50	3,863	**12,000**	**200**

Note: GFA taken from The Jones Consulting Group Draft plan 5A and minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 2 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building
b) Same or greater height than the fire building
c) Contains unprotected exposed openings
d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 150 L/s
(2) Building Occupancy Contents = -15 % Reduction
(3) Sprinkler System Credit = 0 % No Charge
(4) Exposure to building = 50.50 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	2.40	21.00	21.00	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
South	23.00	8.50	8.50	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
East	0.00	25.00	10.00	Fire wall seperation floors; Assign 10% Charge
West	18.00	11.00	11.00	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
		Total:	50.50	

Final Adjusted Fire Flow = Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)

= **12000 L/min** or **200 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	Block 74 - Unit 1 to 4 Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be greater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
Block 74 4 Units	863.67	1.5	10,000	167	-15	8,500	0	0	37.50	3,188	**12,000**	**200**

Note: GFA taken from minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 2 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building

b) Same or greater height than the fire building

c) Contains unprotected exposed openings

d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 167 L/s

(2) Building Occupancy Contents = -15 % Reduction

(3) Sprinkler System Credit = 0 % No Charge

(4) Exposure to building = 37.50 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
South	24.00	8.00	8.00	Conditions a), b), c) and d) are True; Assign 4/4 of Max Charge
East	2.4	21.00	21.00	Conditions a), b), c) and d) are True; Assign 4/4 of Max Charge
West	23.0	8.50	8.50	Conditions a), b), c) and d) are True; Assign 4/4 of Max Charge
		Total:	37.50	

Final Adjusted Fire Flow = **Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)**

= **12000 L/min** or **200 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	Block 76 MDB Building - Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
Block 76 MDB	6811.50	1.5	27,000	450	-15	22,950	-50	-11,475	5.25	1,205	**13,000**	**217**

Note: GFA taken from The Jones Consulting Group Draft plan 5A and minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 6 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building

b) Same or greater height than the fire building

c) Contains unprotected exposed openings

d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 450 L/s

(2) Building Occupancy Contents = -15 % Reduction

(3) Sprinkler System Credit = -50 % Reduction

(4) Exposure to building = 5.25 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
South	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
East	37.00	2.67	2.00	Conditions a), c), d) are True; Assign 3/4 of Max Charge
West	32.00	4.33	3.25	Conditions a), c), d) are True; Assign 3/4 of Max Charge
		Total:	5.25	

Final Adjusted Fire Flow = Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)

= **13000 L/min** or **217 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	MDB Block 77 - Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
MDB Block 77	5676.20	1.5	25,000	417	-15	21,250	-50	-10,625	9.32	1,981	**13,000**	**217**

Note: GFA taken from The Jones Consulting Group Draft plan 5A and minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 5 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building

b) Same or greater height than the fire building

c) Contains unprotected exposed openings

d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 417 L/s

(2) Building Occupancy Contents = -15 % Reduction

(3) Sprinkler System Credit = -50 % Reduction

(4) Exposure to building = 9.32 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
South	24.00	8.00	6.00	Conditions a), c), d) are True; Assign 3/4 of Max Charge
East	31.70	4.43	3.32	Conditions a), c), d) are True; Assign 3/4 of Max Charge
West	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
		Total:	9.32	

Final Adjusted Fire Flow = Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)

= **13000 L/min** or **217 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	MDB Building F West (Separated by Firewall) - Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
MDB BLD F West	7604.49	1.5	29,000	483	-15	24,650	-50	-12,325	21.69	5,345	**18,000**	**300**

Note: GFA taken from Bistro 6 Building B with similar unit and floor count

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building

b) Same or greater height than the fire building

c) Contains unprotected exposed openings

d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 483 L/s

(2) Building Occupancy Contents = -15 % Reduction

(3) Sprinkler System Credit = -50 % Reduction

(4) Exposure to building = 21.69 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	12.00	14.00	10.50	Conditions a), c) and d) are True; Assign 3/4 of Max Charge
South	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
East	0	25.00	10.00	Fire wall seperating floors; Assign 10% Charge
West	40.25	1.58	1.19	Conditions a), b), c) are True; Assign 3/4 of Max Charge
		Total:	21.69	

Final Adjusted Fire Flow = Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)

= **18000 L/min** or **300 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	MDB Building F East (Separated by Firewall) - Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
MDB BLD F East	8106.49	1.5	30,000	500	-15	25,500	-50	-12,750	22.43	5,719	**18,000**	**300**

Note: GFA taken from Bistro 6 Building B with similar unit and floor count

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building

b) Same or greater height than the fire building

c) Contains unprotected exposed openings

d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 500 L/s

(2) Building Occupancy Contents = -15 % Reduction

(3) Sprinkler System Credit = -50 % Reduction

(4) Exposure to building = 22.43 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	12.00	14.00	10.50	Conditions a), c) and d) are True; Assign 3/4 of Max Charge
South	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
East	37.30	2.57	1.93	Conditions a), c) and d) are True; Assign 3/4 of Max Charge
West	0	25.00	10.00	Fire wall seperating floors; Assign 10% Charge
		Total:	22.43	

Final Adjusted Fire Flow = Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)

= **18000 L/min** or **300 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	MDB Building D - Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
MDB BLD D	6811.50	1.5	27,000	450	-15	22,950	-50	-11,475	22.65	5,198	**17,000**	**283**

Note: GFA taken from The Jones Consulting Group Draft plan 5A and minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 6 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building

b) Same or greater height than the fire building

c) Contains unprotected exposed openings

d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 450 L/s

(2) Building Occupancy Contents = -15 % Reduction

(3) Sprinkler System Credit = -50 % Reduction

(4) Exposure to building = 22.65 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	12.00	14.00	10.50	Conditions a), c) and d) are True; Assign 3/4 of Max Charge
South	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
East	16.29	11.86	8.90	Conditions a), b), c) are True; Assign 3/4 of Max Charge
West	31.97	4.34	3.26	Conditions a), b), c) are True; Assign 3/4 of Max Charge
		Total:	22.65	

Final Adjusted Fire Flow = Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)

= **17000 L/min** or **283 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	Lot 52 Single - Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)
C = coefficient related to the type of construction
= 1.5 for wood frame construction (structure essentially all combustible).
= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)
= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)
= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
Lot 52 Single	336.70	1.5	6,000	100	-15	5,100	0	0	48.51	2,474	**8,000**	**133**

Note: GFA taken from The Jones Consulting Group Draft plan 5A and minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 2 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:
a) Same or poorer type of construction than fire building
b) Same or greater height than the fire building
c) Contains unprotected exposed openings
d) Unsprinklered
(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 100 L/s
(2) Building Occupancy Contents = -15 % Reduction
(3) Sprinkler System Credit = 0 % No Charge
(4) Exposure to building = 48.51 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
South	7.80	16.57	16.57	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
East	1.30	22.83	22.83	Conditions a), b), c), d) are True; Assign 4/4 of Max Charge
West	5.50	18.21	9.11	Conditions b), c), are True; Assign 2/4 of Max Charge
		Total:	48.51	

Final Adjusted Fire Flow = **Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)**
= **8000 L/min** or **133 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	MDB Building K West (Separated by Firewall) - Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
MDB BLD K West	8471.92	1.5	30,000	500	-15	25,500	-50	-12,750	10.00	2,550	**15,000**	**250**

Note: GFA taken from The Jones Consulting Group Draft plan 5A and minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 6 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building

b) Same or greater height than the fire building

c) Contains unprotected exposed openings

d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 500 L/s

(2) Building Occupancy Contents = -15 % Reduction

(3) Sprinkler System Credit = -50 % Reduction

(4) Exposure to building = 10.00 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
South	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
East	0.00	25.00	10.00	Fire wall seperating floors; Assign 10% Charge
West	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
		Total:	10.00	

Final Adjusted Fire Flow = Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)

= **15000 L/min** or **250 L/s**

Project:	Pratt Homes Hewitt's South	Date:	Sep 2024	
File No.:	PRA-23040(50)	Designed:	CG	
Subject:	MDB Building K East (Separated by Firewall) - Fire Flow Calculations	Checked:	DR	
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible).

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be grrater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
MDB BLD K East	8471.92	1.5	30,000	500	-15	25,500	-50	-12,750	10.00	2,550	**15,000**	**250**

Note: GFA taken from The Jones Consulting Group Draft plan 5A and minimum setbacks stipulated in the City of Barrie zoning setbacks and assumed 6 storey building.

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:

a) Same or poorer type of construction than fire building

b) Same or greater height than the fire building

c) Contains unprotected exposed openings

d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 500 L/s

(2) Building Occupancy Contents = -15 % Reduction

(3) Sprinkler System Credit = -50 % Reduction

(4) Exposure to building = 10.00 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
South	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
East	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
West	0.00	25.00	10.00	Fire wall seperating floors; Assign 10% Charge
		Total:	10.00	

Final Adjusted Fire Flow = **Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)**

= **15000 L/min** or **250 L/s**

Project:	Pratt Homes Hewitt's South		Date:	Sep 2024
File No.:	PRA-23040(50)		Designed:	CG
Subject:	8 Plex Fire Flow Calculations		Checked:	DR
Revisions:				

Fire flow demands for the FUS method is based on information and guidance provided in Part 2 of the "Water Supply for Public Protection" (Fire Underwriters Survey, 1999)

An estimate of the fire flow required is given by the following formula:

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

where:

F = the required fire flow in litres per minute (Rounded to nearest 1000 L/min)

C = coefficient related to the type of construction
- = 1.5 for wood frame construction (structure essentially all combustible).
- = 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)
- = 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)
- = 0.6 for fire-resistive construction (fully protected frame, floors, roof)

Note: For types of construction that do not fall within the categories given, coefficients shall not be greater than 1.5 nor less than 0.6 and may be determined by interpolation between consecutive construction types as listed above

A = Total floor area in square meters (including all storeys, but excluding basements at least 50% below grade) in the building being considered.

Adjustments to the calculated fire flow can be made based on occupancy, sprinkler protection and exposure to other structures. The table below summarizes the adjustments made to the basic fire flow demand.

			(1)		(2)		(3)		(4)		**Final Adjustment**	
Building	GFA	C	Fire Flow "F"		Occupancy Contents		Sprinkler		Exposure		**Fire Flow**	
	(m^2)		(L/min)	(L/s)	(%)	Adjusted Fire Flow (L/min)	%	Adjustment (L/min)	%	Adjustment (L/min)	**(L/min)**	**(L/s)**
8 Plex	949.48	1.5	10,000	167	-15	8,500	0	0	29.48	2,505	**11,000**	**183**

Note: GFA taken from Pratt Homes Architectural Rendings .

(2) Occupancy Contents

Non-Combustible	-25%
Limited Combustible	-15%
Combustible	No Charge
Free Burning	15%
Rapid Burning	25%

(3) Sprinkler

30% credit for adequately designed system per NFPA 13. Additional 10% if water supply standard for both the system and fire department hose lines required. Additional credit of up to 10% given for a fully supervised system.

(4) Exposure

0 to 3m	25% to 20%	Max exposure determined by
3 to 10m	20% to 15%	Linear Interpolation of distance
10 to 20m	15% to 10%	and is calculated for all sides.
20 to 30m	10% to 5%	Max total charge shall not
30 to 45m	5% to 0%	exceed 75%.

Note: No Exposure charge applied to adjacent floor area separated by a min. 2 hour rated fire wall.

Max charge percentage is outlined above. Max should only be used if exposed building meets all of the following conditions:
- a) Same or poorer type of construction than fire building
- b) Same or greater height than the fire building
- c) Contains unprotected exposed openings
- d) Unsprinklered

(each true condition accounts for 1/4 of the max charge percentage)

Calculations :

(1) Basic Required Fire Flow (F) = 167 L/s
(2) Building Occupancy Contents = -15 % Reduction
(3) Sprinkler System Credit = 0 % No Charge
(4) Exposure to building = 29.48 % Increase [See Calculation Below]

	Dist. (m)	Max Charge %	Adjusted Charge %	Notes:
North	>45	0.00	0.00	Exposure greater than 45m; No Charge Assigned
South	5.40	18.29	13.72	Conditions a), c), d) are True; Assign 3/4 of Max Charge
East	5.50	18.21	13.66	Conditions a), c) and d) are True; Assign 3/4 of Max Charge
West	36.6	2.80	2.10	Conditions a), b), c) are True; Assign 3/4 of Max Charge
		Total:	29.48	

Final Adjusted Fire Flow = Adjustment Flow from (2) + Sprinkler Adjustment (3) + Exposure Adjusment (4)
= **11000 L/min** or **183 L/s**

Abdulrahman Mahfouz

From: Tom Reeve <Tom.Reeve@barrie.ca>
Sent: September 27, 2024 12:31 PM
To: Ming Gao
Cc: Abdulrahman Mahfouz; Koryun Shahbikian; Lingling He; Olu Awogboro
Subject: RE: City of Barrie InfoWater Model Meeting

Hi Ming,

Just a quick note:

- We don't see a similar drop in the model when we run extended simulation.
- Water operations also does not report that this is happening in the field

Regards,

Tom Reeve, P.Eng.
Senior Project Manager - Water/Wastewater Planning

Corporate Asset Management

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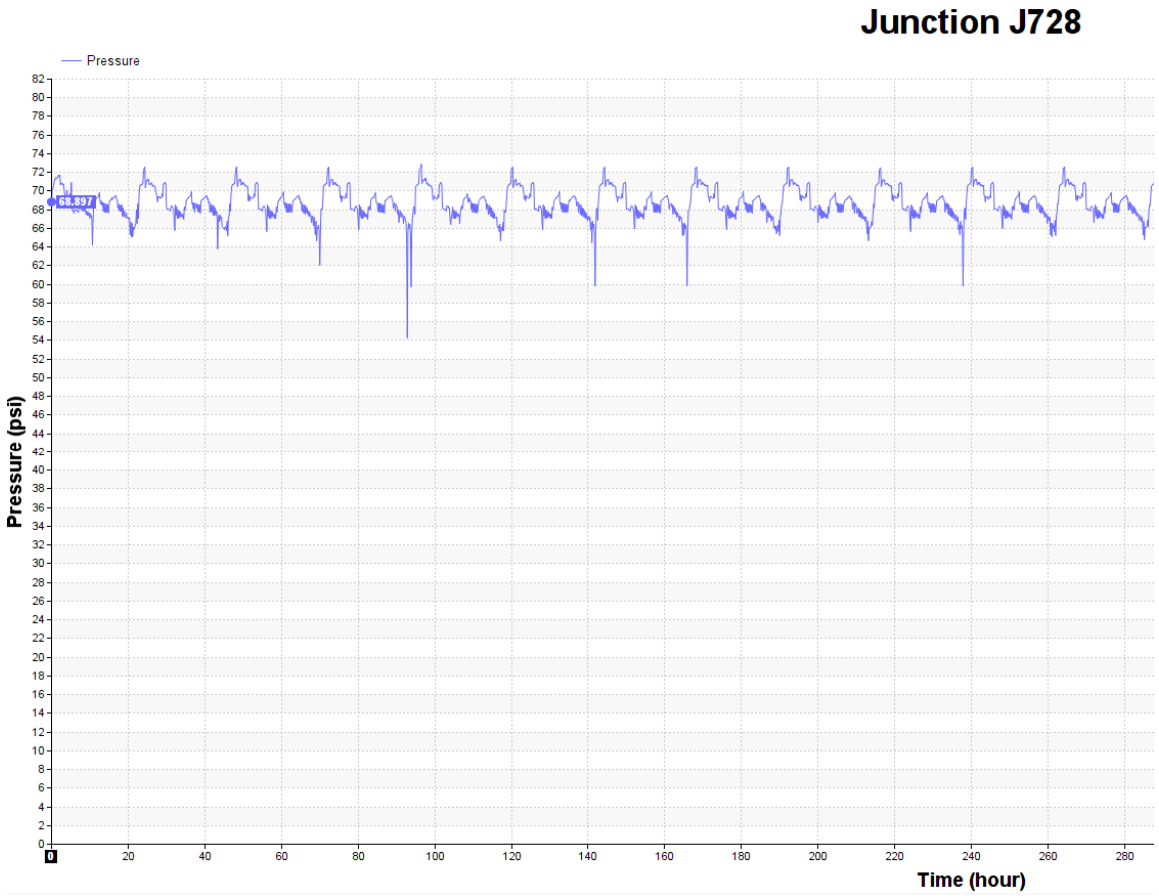
From: Ming Gao <mgao@schaeffers.com>
Sent: Tuesday, September 24, 2024 2:45 PM
To: Tom Reeve <Tom.Reeve@barrie.ca>
Cc: Abdulrahman Mahfouz <AMahfouz@schaeffers.com>; Koryun Shahbikian <kshahbikian@schaeffers.com>; Lingling He <Lingling.He@barrie.ca>; Olu Awogboro <Olu.Awogboro@barrie.ca>
Subject: RE: City of Barrie InfoWater Model Meeting

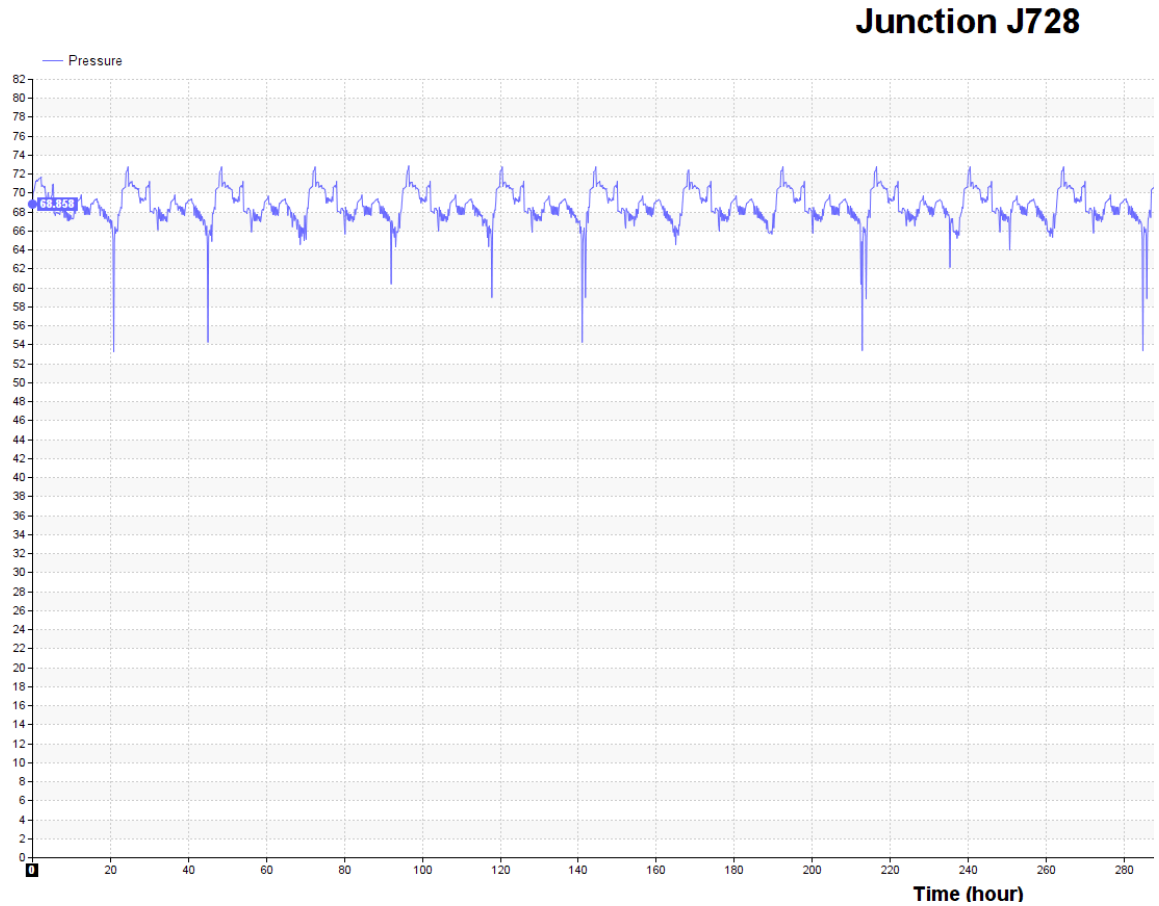
Hi Tom,

Thank you for your investigation.

1. I followed your instructions from bullet #3 by removing the demands at nodes J-393 and J-728. I also adjusted the 'Duration' setting for the extended period simulation (EPS_OTB) to 480 hours, as all previous models provided to Schaeffers used this simulation period. (call it **Scenario 1)** Here are my findings:
    - **Scenario 1**: Over the first 48 hours, the pressure drop disappeared. However, looking at the entire 480 hours, the pressure drop reappeared around the 93rd hour.



- **Scenario 2**: I then added the 6.03 L/s back to node J-728, considering the development is expected to occur before our site. In this scenario, the pressure drop occurred earlier, at the 21st hour.



- In both scenarios, the pressure drop magnitude was similar, around 10 psi. However, in **Scenario 2**, the drop occurred earlier and more frequently.
- Could you confirm if you observed similar pressure drops when running a longer simulation period?

At this point, it might be helpful to schedule another meeting to discuss potential solutions for these pressure drops or determine if they can be disregarded if they aren't occurring in real life, which could be validated through system monitoring data.

2. Regarding the peaking factor mentioned in bullet #2, we intended to convey in the last meeting that when running the MDD scenario with the diurnal pattern, a composite factor of 5.24 (i.e., 2.57 x 2.04) is effectively applied to the ADD to represent the worst-hour demand. Since the MOE design guidelines specify a PHD factor of 3, we believe the current approach for new developments may be overly conservative. Therefore, we recommend adjusting the composite factor for new developments to align with the MOE factor of 3.

We can further discuss the approach we adopted to adjust the composite factors during our upcoming meeting. Please share several time slots that work for you, and I'll send out a meeting invite.

Thank you!

Ming Gao, P.Eng.

Water Supply and Water Resource Engineer

SCHAEFFERS
CONSULTING ENGINEERS

6 Ronrose Drive, Concord, Ontario, L4K4R3

(905) 738-6100 – Ext. 201

www.schaeffers.com

From: Tom Reeve <Tom.Reeve@barrie.ca>
Sent: September 19, 2024 15:39 PM
To: Abdulrahman Mahfouz <AMahfouz@schaeffers.com>; Olu Awogboro <Olu.Awogboro@barrie.ca>
Cc: Koryun Shahbikian <kshahbikian@schaeffers.com>; Ming Gao <mgao@schaeffers.com>; Lingling He <Lingling.He@barrie.ca>
Subject: RE: City of Barrie InfoWater Model Meeting

Hello,

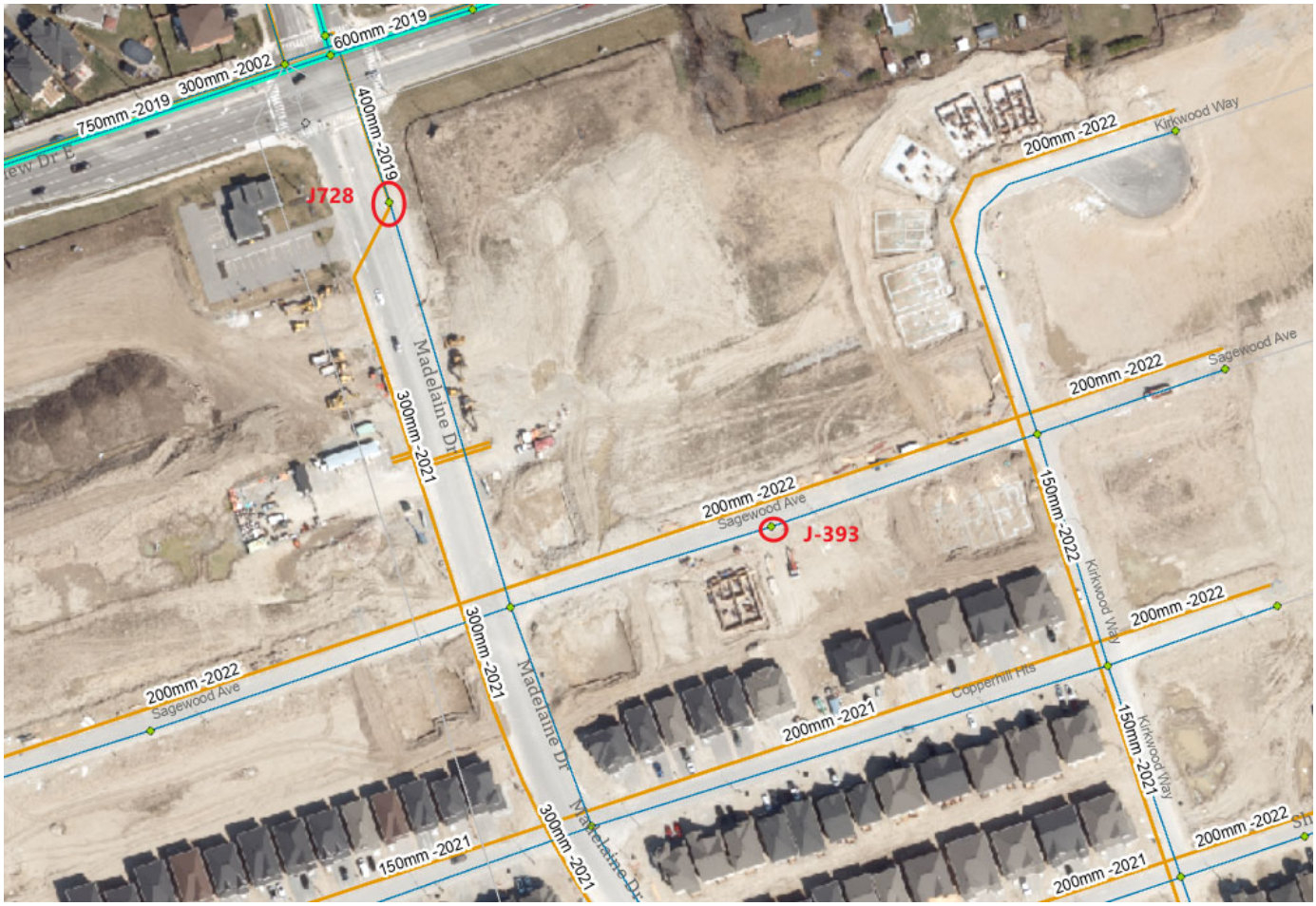
Sorry for the delay in response.

Olu will be sending the model via file sharing shortly.

We did some further investigation of the spike in the modeling results that we wanted to share with you:

- ADD scenario showed no spike or fluctuation.
- Olu did random nodes check at Zone 2S, when the scenario was changed from ADD to MDD, the demands in ADD changed with a multiplication factor varying from 2.06 to 2.57. This is slightly higher than the presumed 2.04 (the highest peak in the diurnal pattern). Based on this finding, it will more make sense that the diurnal pattern or the combination of residential and ICI diurnal patterns.
- For the spike shown in the downstream pressure pump curve, this is related to allocation of demands in the new areas. Two nodes, J-393 (200 lps) and J728 (6 lps), has high demand values for an area that is not built. Please see screenshot below. We changed the demand at Node J728 to 0 lps and the downward spike cleared, though it showed a steady fluctuation with 10 psi. Likewise, we updated the Node J-393, we changed Demand 3 (lps) to 0 (deleted the 200 lps value).

We are hoping this helps explain the strange results we were seeing and we are happy to discuss further.



With regards to our discussion on MDD and Peak Hour calculations we acknowledge if we aren't careful we could double count peaks. As we update our model during the ongoing Master Plan we will be careful to review and document the approach to peaking so it is clear to everyone. In the meantime for development applications, the City is open to alternative methods of incorporating MDD and Peak Hour demand for development applications. However, the approach should be reasonable when estimating future demands and assumptions are clearly documented.

Regards,

Tom Reeve, P.Eng.

Senior Project Manager - Water/Wastewater Planning

Corporate Asset Management

Barrie

City Hall, 70 Collier Street, P.O. Box 400, Barrie ON, L4M 4T5
Office: 705-739-4220 x4465 | Fax: 705-739-4247
www.barrie.ca

CELL #: 705-817-0599

From: Abdulrahman Mahfouz <AMahfouz@schaeffers.com>
Sent: Friday, September 13, 2024 3:06 PM
To: Olu Awogboro <Olu.Awogboro@barrie.ca>; Tom Reeve <Tom.Reeve@barrie.ca>; Lingling He <Lingling.He@barrie.ca>
Cc: Koryun Shahbikian <kshahbikian@schaeffers.com>; Ming Gao <mgao@schaeffers.com>; Sheyda Dorraj <Sheyda.Dorraj@barrie.ca>
Subject: RE: City of Barrie InfoWater Model Meeting

Hello,

I'm following up on the below.

We're waiting on receiving the latest model but we haven't heard back from the City.

Kind Regards,

Abdulrahman Mahfouz, EIT

Water Resources Analyst

SCHAEFFERS
CONSULTING ENGINEERS

6 Ronrose Drive, Concord, Ontario L4K4R3

(905) 738-6100

From: Abdulrahman Mahfouz
Sent: July 25, 2024 3:25 PM
To: Olu Awogboro <Olu.Awogboro@barrie.ca>; Tom Reeve <Tom.Reeve@barrie.ca>; Lingling He <Lingling.He@barrie.ca>
Cc: Koryun Shahbikian <kshahbikian@schaeffers.com>; Ming Gao <mgao@schaeffers.com>; Sheyda Dorraj <Sheyda.Dorraj@barrie.ca>
Subject: City of Barrie InfoWater Model Meeting

Hi All,

Firstly, I would like to thank everyone for attending yesterday's meeting regarding the City's water supply model.

To recap, we discussed the modification of the model peaking factors in order to match the MECP peak demands with the use of the fluctuating daily demand patterns. We also briefly discussed the pressure drops observed in the model for the Pressure Zone 2S, and the need for verification in order to confirm the model is operating as intended.

It was mentioned in the meeting that the latest water supply model was circulated in May of this year, so we kindly request you to provide us with the latest InfoWater model to ensure we are using the most recent calibrated version. As expecting the pressure drops in Zone 2S may not be removed in the latest model though, we ask that coordination continue in order to resolve these issues. Since yesterday's meeting ended a bit short, perhaps we can reschedule for another meeting as we would like to know your thoughts and suggestions for moving forward.

Kind Regards,

Abdulrahman Mahfouz, EIT

Water Resources Analyst

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ATTACHMENT 2

WATER SUPPLY CALCULATIONS

Population Calculations

Project Title: Hewitt's South
Project Number: 5222
Last Edited: 2024-10-30

Municipality City of Barrie

Design Parameters

Low Density	Single detached, duplexes, semi-detached dwellings	3.25	ppu	City of Barrie's Drinking Water Infrastructure Design Standard (2024)
Medium Density	Triplexes/fourplexes, cluster/block townhouses, street townhouses, walk-up apartments	2.57	ppu	City of Barrie's Drinking Water Infrastructure Design Standard (2024)
High Density	Apartment dwellings	1.67	ppu	City of Barrie's Drinking Water Infrastructure Design Standard (2024)
Parkland Density		50	ppha	City of Vaughan's Engineering Design Criteria (December 2020)
Commercial		75	ppha	City of Vaughan's Engineering Design Criteria (December 2020)

Equivalent Population Calculation

Hewitt's South Subdivision

Land Use	Land Use Category	Density Classification	Density (ppu)	Density (ppha)	Total Units	Land Area (ha)	Population
Single Detached	Residential	Low Density	3.25	-	52	-	169
Townhouses	Residential	Medium Density	2.57	-	1135	-	2917
Parkland*	-	-	-	50	-	0.5	25
Commercial*	Commercial	-	-	75	-	0.14	11
				Total	**1187**		**3122**

Hewitt's Central Subdivision

Land Use	Land Use Category	Density Classification	Density (ppu)	Density (ppha)	Total Units	Land Area (ha)	Population
Single Detached	Residential	Low Density	3.25	-	119	-	387
Townhouses	Residential	Medium Density	2.57	-	217	-	558
Future Development	Residential	Low Density	3.25		2	-	7
Parkland*	-	-	-	50	-	0.9	45
				Total	**338**		**997**

960 Lockhart Road

Land Use	Land Use Category	Density Classification	Density (ppu)	Density (ppha)	Total Units	Land Area (ha)	Population
Condominium Units	Residential	High Density	1.67	-	750	-	1253
				Total	**750**		**1253**

Total

Land Use	Land Use Category	Density Classification	Density (ppu)	Density (ppha)	Total Units	Land Area (ha)	Population
Single/Semi Detached	Residential	Low Density	3.25	-	173	-	563
Townhouses	Residential	Medium Density	2.57	-	1352	-	3475
Apartment	Residential	High Density	1.67	-	750	-	1253
Parkland*	-	-	-	50	-	1.4	70
Commercial*	Commercial	-	-	75	-	0.14	11
				Total	**2275**		**5372**

Land use information retrieved from Draft Plan of Subdivision by Jones Consulting Group LTD. (September 25, 2024)
*Parkland and commercial population density based on City of Vaughan's Engineering Design Criteria (December 2020) as City of Barrie's design guidelines do not provide equivalent population density

Water Supply Calculations

Project Title: Hewitt's Central
Project Number:
Last Edited: 2024-10-30

Municipality City of Barrie

Water Supply Parameters

Water Demand

Residential	225	L/cap./d	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)
Commercial/Institutional	28	m^3/ha./d	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)
Industrial	35	m^3/ha./d	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)

Peaking Factors

Hewitt's South

Max Day Factor	2.00	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)
Peak Hour Factor	3.00	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)

Hewitt's Central

Max Day Factor	2.75	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)
Peak Hour Factor	4.13	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)

960 Lockhart Road

Max Day Factor	2.50	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)
Peak Hour Factor	3.75	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)

All Lands

Max Day Factor	2.00	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)
Peak Hour Factor	3.00	City of Barrie's Water Transmission and Distribution Policies and Design Standard (June 2022)

Design Water Demand Calculation

Hewitt's South

Land Use	Population	Land Area (ha)	Water Demand (L/s)		
			Average Day Demand	*Max Day Demand*	*Peak Hour Demand*
Residential	3086		8.04	16.07	24.11
Commercial/Park	36	0.64	0.21	0.41	0.62
Total	**3122**		**8.24**	**16.49**	**24.73**

Hewitt's Central

Land Use	Population	Land Area (ha)	Water Demand (L/s)		
			Average Day Demand	*Max Day Demand*	*Peak Hour Demand*
Residential	952		2.48	6.82	10.24
Commercial/Park	45	0.90	0.29	0.80	1.20
Total	**997**		**2.77**	**7.62**	**11.44**

Water Supply Calculations

Project Title: Hewitt's Central
Project Number:
Last Edited: 2024-10-30

Municipality City of Barrie

---

960 Lockhart Road

Land Use	Population	Land Area (ha)	Water Demand (L/s)		
			Average Day Demand	*Max Day Demand*	*Peak Hour Demand*
Residential	1253		3.26	8.16	12.24
Total	**1253**		**3.26**	**8.16**	**12.24**

Total

Land Use	Population	Land Area (ha)	Water Demand (L/s)		
			Average Day Demand	*Max Day Demand*	*Peak Hour Demand*
Residential	5291		13.78	27.56	41.34
Commercial/Park	81	1.54	0.50	1.00	1.50
Future Institutional (External)		2.47	0.80	1.60	2.41
Future Open Space (External)		2.03	0.66	1.31	1.97
Total	**5372**		**15.74**	**31.47**	**47.21**

Average Model Demands ***(peak demands achieved in conjunction with City of Barrie diurnal consumption pattern curves)***

Site	*Average Day Demand*	Peak Model Demands with Diurnal Pattern [L/s]		*Average Model Demands with Diurnal Pattern [L/s]	
		Max Day Demand	*Peak Hour Demand*	*Max Day Demand*	*Peak Hour Demand*
Hewitt's South	8.24	16.49	24.73	8.08	12.12
Hewitt's Central	2.77	7.62	11.44	3.74	5.61
960 Lockhart Road	3.26	8.16	12.24	4.00	6.00

** Divided by 2.04 (maximum multiplier in the City of Barrie diurnal curves PAT2S-CAL-RES and PAT2S-CAL-NON_RES)*

ATTACHMENT 3

INFOWATER MODEL RESULTS


BL-6
ANNEX_12118B
ANNEX_12120
J988
P2482
P4692
J986
P2480
P2472
P4514
P2490
J984
P2478
J982
P2476
J980
P2474
P2488
P4694
P2486
P2484
J990
P4884
BL-5
J1310
P4938
P4940
P4942
P4932
J1312
P4954
P4926
J1322
J1302
P4928
J293
P4922
P4936
P4934
J490
P4824
P4830
J1300
P4930
P4826
J574
P4924
J594
P4882
P4832
P4944
J408
P4880
P4822
J291
P4828
J1314
J1294
P4820
P4838
P4912
P4878
J289
P4918
P4874
P4842
J328
P4848
P4840
J287
J1288
P4844
J670
P4810
P4792
P4846
J281
J295
P4812
P4794
J279
J1292
J1954
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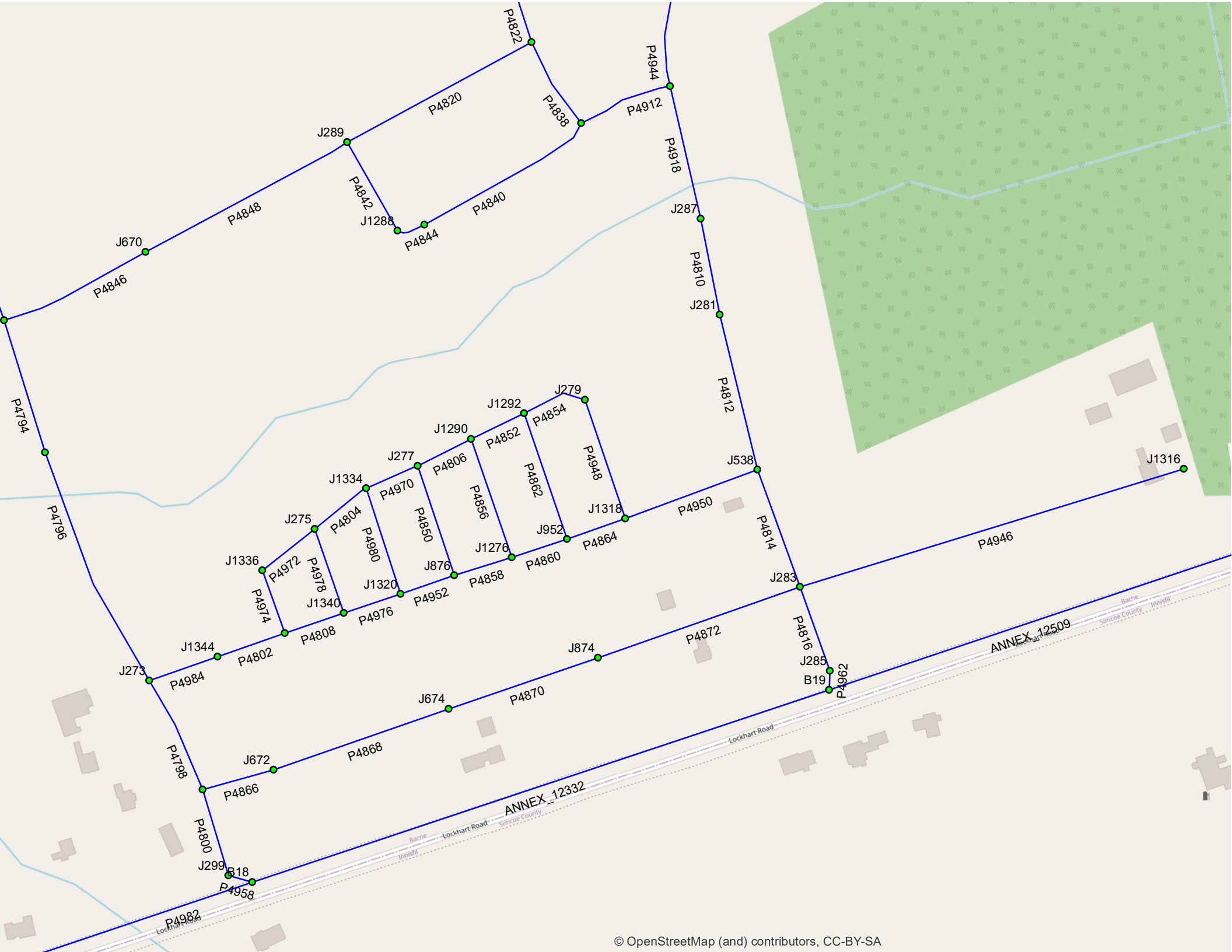
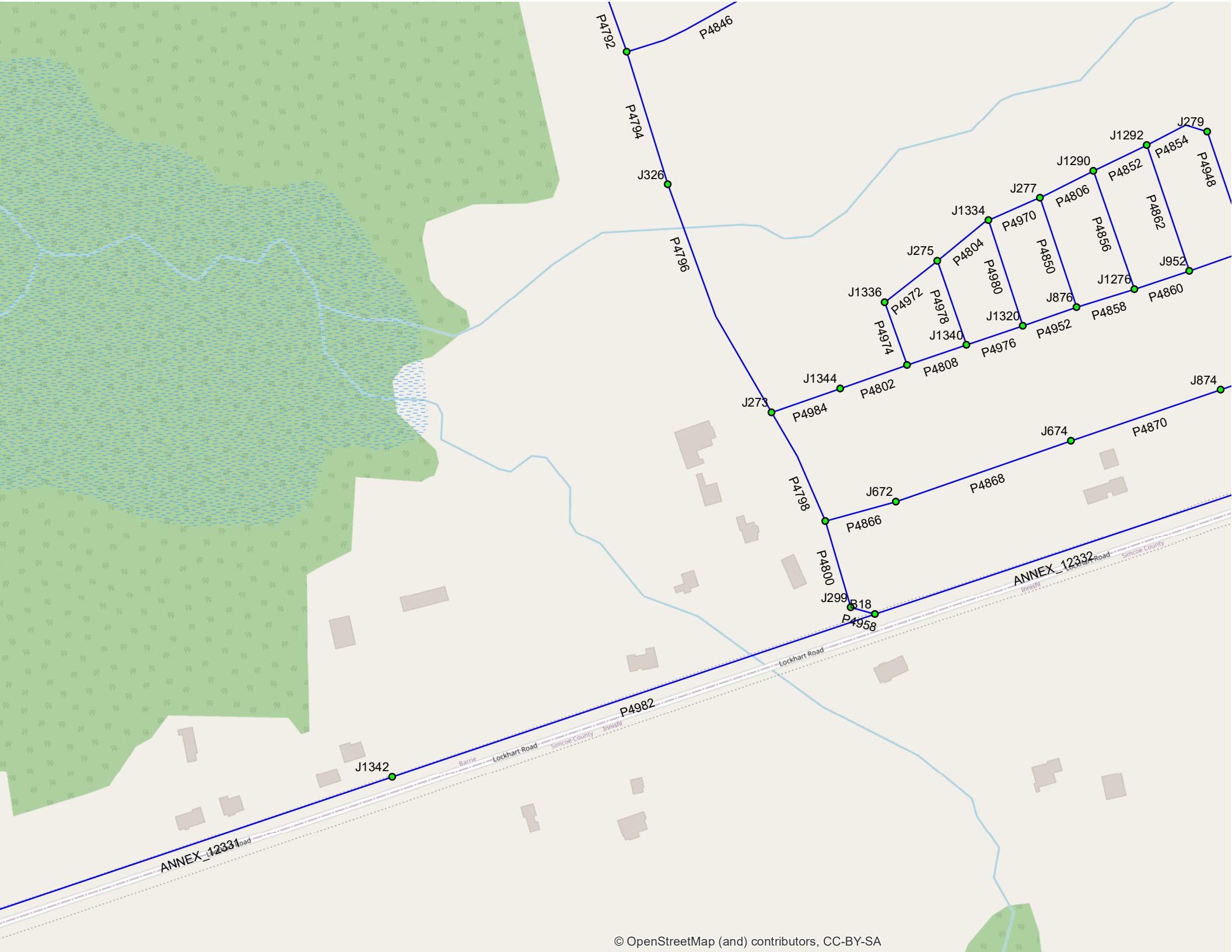
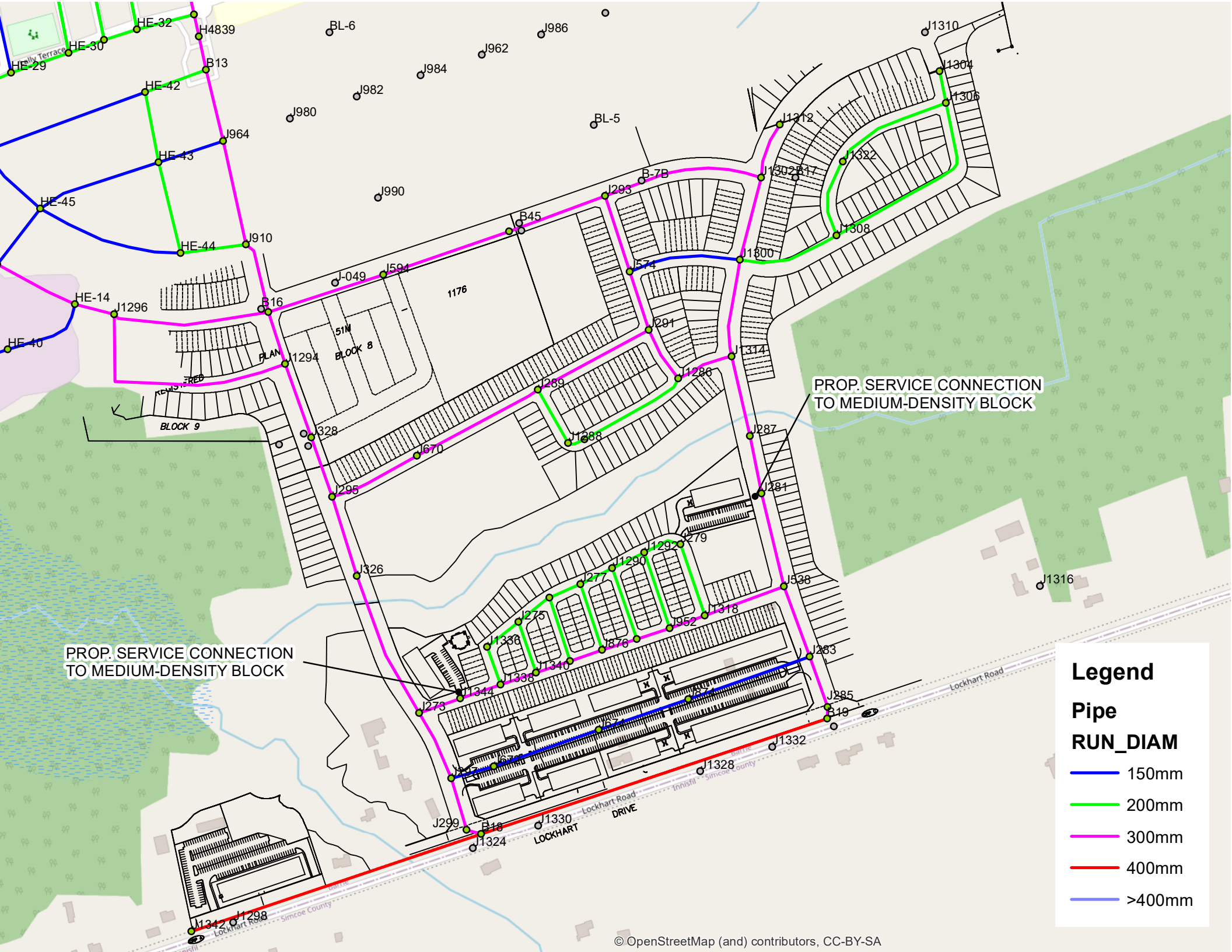




INTERIM SCENARIO 1


PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
Legend
Pipe
RUN_DIAM
150mm
200mm
300mm
400mm
>400mm
Lockhart Road
DRIVE
LOCKHART
BLOCK 8
BLOCK 9
PLAN
1176
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Hydraulic Model Results: Average Day Demand - Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range

	DEMAND			HEAD			PRESSURE		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m)	Min.Value (m)	Average (m)	Max.Value (psi)	Min.Value (psi)	Average (psi)
B18	0	0	0	310.92	303.46	307.96	74.51	63.91	70.32
B19	0	0	0	310.92	303.46	307.96	63.28	52.68	59.09
J273	0	0	0	310.92	303.46	307.97	75.5	64.9	71.3
J275	0.07	0.01	0.03	310.92	303.46	307.96	74.93	64.33	70.73
J277	0.11	0.01	0.05	310.92	303.46	307.96	74.06	63.46	69.86
J279	0.07	0.01	0.03	310.92	303.46	307.96	73.22	62.62	69.02
J281	0.97	0.07	0.48	310.92	303.46	307.97	72.64	62.04	68.44
J283	0.08	0.01	0.04	310.92	303.46	307.96	64.07	53.46	59.87
J285	0.1	0.01	0.05	310.92	303.46	307.96	63.57	52.96	59.37
J287	0.05	0	0.03	310.92	303.47	307.97	72.2	61.61	68.01
J297	0	0	0	310.92	303.46	307.96	75	64.39	70.8
J299	0	0	0	310.92	303.46	307.96	74.8	64.19	70.6
J538	0.65	0.05	0.32	310.92	303.46	307.96	67.96	57.36	63.76
J672	1.63	0.12	0.81	310.91	303.4	307.95	73.87	63.19	69.65
J674	3.28	0.24	1.63	310.91	303.33	307.92	70.44	59.67	66.19
J874	4.26	0.31	2.11	310.91	303.33	307.92	67.51	56.74	63.27
J876	0.25	0.02	0.12	310.92	303.46	307.96	70.99	60.39	66.79
J952	0.22	0.02	0.11	310.92	303.46	307.96	69.7	59.09	65.5
J1276	0.23	0.02	0.12	310.92	303.46	307.96	70.15	59.55	65.95
J1290	0.16	0.01	0.08	310.92	303.46	307.96	73.78	63.17	69.58
J1292	0.23	0.02	0.11	310.92	303.46	307.96	73.49	62.89	69.29
J1318	0.34	0.03	0.17	310.92	303.46	307.96	69.84	59.24	65.64
J1320	0.3	0.02	0.15	310.92	303.46	307.96	71.79	61.18	67.59
J1334	0.1	0.01	0.05	310.92	303.46	307.96	74.46	63.86	70.26
J1336	0.07	0.01	0.03	310.92	303.46	307.96	75.28	64.68	71.09
J1338	0.31	0.02	0.16	310.92	303.46	307.96	73.49	62.89	69.29
J1340	0.25	0.02	0.12	310.92	303.46	307.96	72.62	62.02	68.43
J1342	2.18	0.16	1.08	310.92	303.46	307.96	71.07	60.47	66.88
J1344	0.9	0.07	0.44	310.92	303.46	307.96	74.48	63.88	70.28
J289	0.43	0.03	0.21	310.92	303.48	307.97	75.6	65.02	71.41
J291	0.33	0.02	0.16	310.92	303.48	307.97	74.59	64.01	70.4
J293	0.27	0.02	0.13	310.92	303.48	307.97	71.35	60.77	67.16
J295	0.31	0.02	0.15	310.92	303.48	307.97	77.5	66.93	73.32
J326	0	0	0	310.92	303.48	307.97	74.23	63.65	70.04
J328	0	0	0	310.92	303.5	307.98	75.3	64.75	71.12
J408	0	0	0	310.92	303.52	307.98	74.23	63.71	70.06
J490	1.35	0.1	0.67	310.92	303.49	307.97	72.11	61.55	67.93
J574	0.86	0.06	0.42	310.92	303.48	307.97	74.08	63.5	69.89
J594	1.63	0.12	0.81	310.92	303.5	307.98	73.2	62.65	69.02
J670	0.2	0.02	0.1	310.92	303.48	307.97	76.66	66.09	72.48
J1284	0.35	0.03	0.17	310.92	303.48	307.97	73.81	63.23	69.62
J1286	0.37	0.03	0.18	310.92	303.47	307.97	72.87	62.29	68.68
J1288	0.1	0.01	0.05	310.92	303.48	307.97	73.88	63.3	69.69
J1294	0	0	0	310.92	303.52	307.98	75	64.48	70.83
J1300	0.43	0.03	0.21	310.92	303.47	307.97	71.97	61.39	67.78
J1302	0.22	0.02	0.11	310.92	303.48	307.97	71.88	61.31	67.69
J1304	0.1	0.01	0.05	310.92	303.47	307.97	73.09	62.51	68.9
J1306	0.53	0.04	0.26	310.92	303.47	307.97	72.99	62.4	68.79
J1308	0.45	0.03	0.22	310.92	303.47	307.97	72.31	61.72	68.12
J1312	0.12	0.01	0.06	310.92	303.48	307.97	71.8	61.22	67.61
J1314	0.29	0.02	0.14	310.92	303.47	307.97	72.09	61.51	67.9
J1322	0.45	0.03	0.22	310.92	303.47	307.97	72.57	61.99	68.38

Hydraulic Model Results: Average Day Demand - Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
ANNEX_12332	0.79	0.06	0.39	0.01	0	0	0	0	0
P4796	9.39	0.69	4.65	0.13	0.01	0.07	0.09	0	0.03
P4798	6.33	0.47	3.14	0.09	0.01	0.04	0.04	0	0.01
P4800	1.39	0.1	0.69	0.02	0	0.01	0	0	0
P4802	2.16	0.16	1.07	0.03	0	0.02	0.01	0	0
P4804	0.32	0.02	0.16	0.01	0	0.01	0	0	0
P4806	0.19	0.01	0.1	0.01	0	0	0	0	0
P4808	1.49	0.11	0.74	0.02	0	0.01	0	0	0
P4810	7.38	0.54	3.66	0.1	0.01	0.05	0.06	0	0.02
P4812	6.41	0.47	3.18	0.09	0.01	0.04	0.05	0	0.01
P4814	5.22	0.38	2.59	0.07	0.01	0.04	0.03	0	0.01
P4816	0.9	0.07	0.44	0.01	0	0.01	0	0	0
P4850	0.04	0	0.02	0	0	0	0	0	0
P4852	0.11	0.01	0.05	0	0	0	0	0	0
P4854	0.03	0	0.01	0	0	0	0	0	0
P4856	0.08	0.01	0.04	0	0	0	0	0	0
P4858	0.52	0.04	0.26	0.01	0	0	0	0	0
P4860	0.21	0.02	0.1	0	0	0	0	0	0
P4862	0.09	0.01	0.05	0	0	0	0	0	0
P4864	0.1	0.01	0.05	0	0	0	0	0	0
P4866	4.94	0.36	2.45	0.28	0.02	0.14	1.16	0.01	0.37
P4868	3.31	0.24	1.64	0.19	0.01	0.09	0.55	0	0.18
P4870	0.02	0	0.01	0	0	0	0	0	0
P4872	4.24	0.31	2.1	0.24	0.02	0.12	0.88	0.01	0.28
P4918	7.43	0.55	3.68	0.11	0.01	0.05	0.06	0	0.02
P4948	0.1	0.01	0.05	0	0	0	0	0	0
P4950	0.54	0.04	0.27	0.01	0	0	0	0	0
P4952	0.8	0.06	0.4	0.01	0	0.01	0	0	0
P4958	1.39	0.1	0.69	0.02	0	0.01	0	0	0
P4962	0.79	0.06	0.39	0.01	0	0.01	0	0	0
P4970	0.26	0.02	0.13	0.01	0	0	0	0	0
P4972	0.29	0.02	0.14	0.01	0	0	0	0	0
P4974	0.36	0.03	0.18	0.01	0	0.01	0	0	0
P4976	1.14	0.08	0.57	0.02	0	0.01	0	0	0
P4978	0.1	0.01	0.05	0	0	0	0	0	0
P4980	0.04	0	0.02	0	0	0	0	0	0
P4982	2.18	0.16	1.08	0.02	0	0.01	0	0	0
P4984	3.06	0.23	1.52	0.04	0	0.02	0.01	0	0
P4792	14.28	1.05	7.08	0.2	0.01	0.1	0.2	0	0.06
P4794	9.39	0.69	4.65	0.13	0.01	0.07	0.09	0	0.03
P4820	2.61	0.19	1.29	0.04	0	0.02	0.01	0	0
P4822	2.48	0.18	1.23	0.04	0	0.02	0.01	0	0
P4824	8.33	0.61	4.13	0.12	0.01	0.06	0.07	0	0.02
P4826	9.68	0.71	4.8	0.14	0.01	0.07	0.1	0	0.03
P4828	7.71	0.55	3.82	0.11	0.01	0.05	0.07	0	0.02
P4830	3.99	0.29	1.98	0.06	0	0.03	0.02	0	0.01
P4832	11.31	0.83	5.61	0.16	0.01	0.08	0.13	0	0.04
P4838	4.76	0.35	2.36	0.07	0	0.03	0.03	0	0.01
P4840	0.9	0.07	0.44	0.03	0	0.01	0.01	0	0
P4842	1.35	0.1	0.67	0.04	0	0.02	0.02	0	0.01
P4844	1.24	0.09	0.62	0.04	0	0.02	0.02	0	0.01
P4846	4.59	0.34	2.27	0.06	0	0.03	0.02	0	0.01
P4848	4.38	0.32	2.17	0.06	0	0.03	0.02	0	0.01
P4874	14.28	1.05	7.08	0.2	0.01	0.1	0.2	0	0.06
P4912	5.29	0.39	2.62	0.07	0.01	0.04	0.03	0	0.01
P4922	3.73	0.27	1.85	0.05	0	0.03	0.02	0	0.01
P4924	0.66	0.05	0.33	0.04	0	0.02	0.03	0	0.01
P4926	0.12	0.01	0.06	0	0	0	0	0	0
P4928	4.08	0.3	2.02	0.06	0	0.03	0.02	0	0.01
P4930	1.53	0.11	0.76	0.05	0	0.02	0.03	0	0.01
P4932	0.1	0.01	0.05	0	0	0	0	0	0

Hydraulic Model Results: Average Day Demand - Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
P4934	0.43	0.03	0.21	0.01	0	0.01	0	0	0
P4936	0.65	0.05	0.32	0.02	0	0.01	0.01	0	0
P4944	2.43	0.18	1.2	0.03	0	0.02	0.01	0	0
P4954	0.2	0.01	0.1	0.01	0	0	0	0	0

Hydraulic Model Results: Maximum Day Demand - Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range

	DEMAND			HEAD			PRESSURE		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m)	Min.Value (m)	Average (m)	Max.Value (psi)	Min.Value (psi)	Average (psi)
B18	0	0	0	311.08	295.62	307.74	74.75	52.77	70
B19	0	0	0	311.08	295.62	307.74	63.52	41.53	58.77
J273	0	0	0	311.08	295.62	307.74	75.73	53.75	70.99
J275	0.07	0	0.03	311.08	295.62	307.74	75.16	53.18	70.42
J277	0.1	0.01	0.05	311.08	295.62	307.74	74.29	52.31	69.55
J279	0.07	0	0.03	311.08	295.62	307.74	73.45	51.47	68.71
J281	0.96	0.07	0.47	311.08	295.62	307.75	72.87	50.9	68.13
J283	0.08	0.01	0.04	311.08	295.62	307.74	64.3	42.32	59.56
J285	0.08	0.01	0.04	311.08	295.62	307.74	63.8	41.82	59.06
J287	0.05	0	0.03	311.08	295.63	307.75	72.43	50.46	67.69
J297	0	0	0	311.08	295.62	307.74	75.23	53.25	70.49
J299	0	0	0	311.08	295.62	307.74	75.03	53.05	70.29
J538	0.64	0.05	0.32	311.08	295.62	307.74	68.19	46.21	63.45
J672	1.61	0.12	0.8	311.08	295.57	307.73	74.1	52.06	69.34
J674	3.2	0.24	1.59	311.07	295.51	307.7	70.67	48.55	65.88
J874	4.18	0.31	2.07	311.07	295.51	307.7	67.74	45.63	62.95
J876	0.24	0.02	0.12	311.08	295.62	307.74	71.22	49.24	66.48
J952	0.21	0.02	0.11	311.08	295.62	307.74	69.93	47.95	65.19
J1276	0.23	0.02	0.11	311.08	295.62	307.74	70.38	48.4	65.64
J1290	0.16	0.01	0.08	311.08	295.62	307.74	74.01	52.03	69.27
J1292	0.22	0.02	0.11	311.08	295.62	307.74	73.72	51.74	68.98
J1318	0.33	0.02	0.17	311.08	295.62	307.74	70.07	48.09	65.33
J1320	0.29	0.02	0.15	311.08	295.62	307.74	72.02	50.04	67.28
J1334	0.1	0.01	0.05	311.08	295.62	307.74	74.69	52.71	69.95
J1336	0.07	0	0.03	311.08	295.62	307.74	75.52	53.54	70.77
J1338	0.31	0.02	0.15	311.08	295.62	307.74	73.72	51.75	68.98
J1340	0.24	0.02	0.12	311.08	295.62	307.74	72.86	50.88	68.11
J1342	2.14	0.16	1.06	311.08	295.62	307.74	71.31	49.32	66.56
J1344	0.88	0.06	0.43	311.08	295.62	307.74	74.71	52.74	69.97
J289	0.58	0.04	0.29	311.08	295.63	307.75	75.83	53.87	71.09
J291	0.44	0.03	0.22	311.08	295.63	307.75	74.82	52.86	70.08
J293	0.36	0.03	0.18	311.08	295.64	307.75	71.58	49.62	66.84
J295	0.41	0.03	0.2	311.08	295.64	307.75	77.74	55.78	73
J326	0	0	0	311.08	295.63	307.75	74.47	52.5	69.73
J328	0	0	0	311.08	295.65	307.76	75.54	53.6	70.81
J408	0	0	0	311.09	295.68	307.77	74.47	52.56	69.75
J490	1.31	0.1	0.65	311.08	295.64	307.75	72.35	50.4	67.62
J574	1.16	0.09	0.57	311.08	295.63	307.75	74.31	52.35	69.57
J594	1.61	0.12	0.8	311.08	295.66	307.76	73.43	51.5	68.7
J670	0.28	0.02	0.14	311.08	295.64	307.75	76.9	54.94	72.16
J1284	0.47	0.03	0.23	311.08	295.63	307.75	74.04	52.08	69.3
J1286	0.5	0.04	0.25	311.08	295.63	307.75	73.1	51.14	68.36
J1288	0.14	0.01	0.07	311.08	295.63	307.75	74.11	52.15	69.37
J1294	0	0	0	311.09	295.67	307.76	75.24	53.33	70.52
J1300	0.58	0.04	0.29	311.08	295.63	307.75	72.2	50.24	67.46
J1302	0.3	0.02	0.15	311.08	295.63	307.75	72.12	50.16	67.38
J1304	0.14	0.01	0.07	311.08	295.62	307.75	73.33	51.35	68.59
J1306	0.72	0.05	0.35	311.08	295.62	307.75	73.22	51.25	68.48
J1308	0.61	0.04	0.3	311.08	295.63	307.75	72.54	50.57	67.8
J1312	0.17	0.01	0.08	311.08	295.63	307.75	72.03	50.07	67.29
J1314	0.39	0.03	0.19	311.08	295.63	307.75	72.33	50.36	67.59
J1322	0.61	0.04	0.3	311.08	295.63	307.75	72.81	50.84	68.07

Hydraulic Model Results: Maximum Day Demand - Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
ANNEX_12332	0.7	0.05	0.35	0.01	0	0	0	0	0
P4796	9.48	0.7	4.7	0.13	0.01	0.07	0.1	0	0.03
P4798	6.28	0.46	3.12	0.09	0.01	0.04	0.04	0	0.01
P4800	1.44	0.11	0.71	0.02	0	0.01	0	0	0
P4802	2.32	0.17	1.15	0.03	0	0.02	0.01	0	0
P4804	0.36	0.03	0.18	0.01	0	0.01	0	0	0
P4806	0.23	0.02	0.11	0.01	0	0	0	0	0
P4808	1.63	0.12	0.81	0.02	0	0.01	0	0	0
P4810	6.93	0.51	3.44	0.1	0.01	0.05	0.05	0	0.02
P4812	5.98	0.44	2.96	0.08	0.01	0.04	0.04	0	0.01
P4814	5.02	0.37	2.49	0.07	0.01	0.04	0.03	0	0.01
P4816	0.78	0.06	0.39	0.01	0	0.01	0	0	0
P4850	0.04	0	0.02	0	0	0	0	0	0
P4852	0.14	0.01	0.07	0	0	0	0	0	0
P4854	0.01	0	0	0	0	0	0	0	0
P4856	0.06	0	0.03	0	0	0	0	0	0
P4858	0.67	0.05	0.33	0.01	0	0	0	0	0
P4860	0.37	0.03	0.19	0.01	0	0	0	0	0
P4862	0.08	0.01	0.04	0	0	0	0	0	0
P4864	0.08	0.01	0.04	0	0	0	0	0	0
P4866	4.84	0.36	2.4	0.27	0.02	0.14	1.12	0.01	0.36
P4868	3.23	0.24	1.6	0.18	0.01	0.09	0.53	0	0.17
P4870	0.03	0	0.01	0	0	0	0	0	0
P4872	4.15	0.31	2.06	0.23	0.02	0.12	0.84	0.01	0.27
P4918	6.98	0.51	3.46	0.1	0.01	0.05	0.05	0	0.02
P4948	0.08	0.01	0.04	0	0	0	0	0	0
P4950	0.33	0.02	0.16	0	0	0	0	0	0
P4952	0.94	0.07	0.47	0.01	0	0.01	0	0	0
P4958	1.44	0.11	0.71	0.02	0	0.01	0	0	0
P4962	0.7	0.05	0.35	0.01	0	0	0	0	0
P4970	0.3	0.02	0.15	0.01	0	0	0	0	0
P4972	0.32	0.02	0.16	0.01	0	0.01	0	0	0
P4974	0.39	0.03	0.19	0.01	0	0.01	0	0	0
P4976	1.28	0.09	0.63	0.02	0	0.01	0	0	0
P4978	0.11	0.01	0.05	0	0	0	0	0	0
P4980	0.04	0	0.02	0	0	0	0	0	0
P4982	2.14	0.16	1.06	0.02	0	0.01	0	0	0
P4984	3.2	0.24	1.59	0.05	0	0.02	0.01	0	0
P4792	15.18	1.12	7.53	0.21	0.02	0.11	0.23	0	0.07
P4794	9.48	0.7	4.7	0.13	0.01	0.07	0.1	0	0.03
P4820	2.92	0.22	1.45	0.04	0	0.02	0.01	0	0
P4822	2.48	0.18	1.23	0.04	0	0.02	0.01	0	0
P4824	9.11	0.67	4.51	0.13	0.01	0.06	0.09	0	0.03
P4826	10.41	0.76	5.16	0.15	0.01	0.07	0.11	0	0.04
P4828	7.91	0.55	3.91	0.11	0.01	0.06	0.07	0	0.02
P4830	4.34	0.32	2.15	0.06	0	0.03	0.02	0	0.01
P4832	12.02	0.88	5.96	0.17	0.01	0.08	0.15	0	0.05
P4838	4.96	0.36	2.46	0.07	0.01	0.03	0.03	0	0.01
P4840	0.91	0.07	0.45	0.03	0	0.01	0.01	0	0
P4842	1.52	0.11	0.75	0.05	0	0.02	0.02	0	0.01
P4844	1.38	0.1	0.68	0.04	0	0.02	0.02	0	0.01
P4846	5.29	0.39	2.62	0.07	0.01	0.04	0.03	0	0.01
P4848	5.01	0.37	2.48	0.07	0.01	0.04	0.03	0	0.01
P4874	15.18	1.12	7.53	0.21	0.02	0.11	0.23	0	0.07
P4912	5.37	0.39	2.66	0.08	0.01	0.04	0.03	0	0.01
P4922	3.94	0.29	1.95	0.06	0	0.03	0.02	0	0.01
P4924	0.7	0.05	0.35	0.04	0	0.02	0.03	0	0.01
P4926	0.17	0.01	0.08	0	0	0	0	0	0
P4928	4.41	0.32	2.19	0.06	0	0.03	0.02	0	0.01
P4930	2.07	0.15	1.02	0.07	0	0.03	0.05	0	0.02
P4932	0.14	0.01	0.07	0	0	0	0	0	0

Hydraulic Model Results: Maximum Day Demand - Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
P4934	0.58	0.04	0.29	0.02	0	0.01	0	0	0
P4936	0.88	0.06	0.44	0.03	0	0.01	0.01	0	0
P4944	2	0.15	0.99	0.03	0	0.01	0.01	0	0
P4954	0.28	0.02	0.14	0.01	0	0	0	0	0

Hydraulic Model Results: Peak Hour Demand - Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range

	DEMAND			HEAD			PRESSURE		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m)	Min.Value (m)	Average (m)	Max.Value (psi)	Min.Value (psi)	Average (psi)
B18	0	0	0	311.01	298.43	307.64	74.65	56.76	69.85
B19	0	0	0	311.01	298.43	307.64	63.42	45.53	58.62
J273	0	0	0	311.01	298.43	307.64	75.63	57.75	70.84
J275	0.1	0.01	0.05	311.01	298.43	307.64	75.06	57.18	70.27
J277	0.16	0.01	0.08	311.01	298.43	307.64	74.19	56.31	69.4
J279	0.1	0.01	0.05	311.01	298.43	307.64	73.35	55.47	68.56
J281	1.43	0.11	0.71	311.01	298.44	307.64	72.77	54.9	67.98
J283	0.12	0.01	0.06	311.01	298.43	307.64	64.2	46.31	59.4
J285	0.14	0.01	0.07	311.01	298.43	307.64	63.7	45.81	58.9
J287	0.08	0.01	0.04	311.01	298.45	307.64	72.33	54.47	67.54
J297	0	0	0	311.01	298.43	307.64	75.13	57.24	70.33
J299	0	0	0	311.01	298.43	307.64	74.93	57.04	70.14
J538	0.96	0.07	0.47	311.01	298.43	307.64	68.09	50.21	63.3
J672	2.41	0.18	1.19	311	298.31	307.6	73.99	55.95	69.16
J674	4.81	0.35	2.39	310.99	298.17	307.55	70.55	52.32	65.67
J874	6.26	0.46	3.1	310.99	298.17	307.55	67.62	49.39	62.74
J876	0.36	0.03	0.18	311.01	298.43	307.64	71.12	53.24	66.33
J952	0.32	0.02	0.16	311.01	298.43	307.64	69.83	51.95	65.03
J1276	0.34	0.03	0.17	311.01	298.43	307.64	70.28	52.4	65.49
J1290	0.24	0.02	0.12	311.01	298.43	307.64	73.91	56.03	69.11
J1292	0.33	0.02	0.17	311.01	298.43	307.64	73.62	55.74	68.83
J1318	0.5	0.04	0.25	311.01	298.43	307.64	69.97	52.09	65.18
J1320	0.44	0.03	0.22	311.01	298.43	307.64	71.92	54.04	67.12
J1334	0.15	0.01	0.08	311.01	298.43	307.64	74.59	56.71	69.8
J1336	0.1	0.01	0.05	311.01	298.43	307.64	75.42	57.53	70.62
J1338	0.46	0.03	0.23	311.01	298.43	307.64	73.63	55.74	68.83
J1340	0.36	0.03	0.18	311.01	298.43	307.64	72.76	54.88	67.96
J1342	3.21	0.24	1.59	311.01	298.42	307.64	71.21	53.32	66.41
J1344	1.33	0.1	0.66	311.01	298.43	307.64	74.61	56.73	69.82
J289	0.87	0.06	0.43	311.01	298.47	307.65	75.73	57.9	70.95
J291	0.66	0.05	0.33	311.01	298.47	307.65	74.72	56.89	69.94
J293	0.54	0.04	0.27	311.01	298.47	307.65	71.48	53.65	66.7
J295	0.62	0.05	0.31	311.02	298.49	307.66	77.64	59.83	72.86
J326	0	0	0	311.01	298.47	307.65	74.37	56.53	69.59
J328	0	0	0	311.02	298.52	307.67	75.44	57.68	70.68
J408	0	0	0	311.02	298.57	307.68	74.38	56.68	69.63
J490	1.98	0.14	0.98	311.02	298.49	307.66	72.25	54.45	67.48
J574	1.73	0.13	0.86	311.01	298.47	307.65	74.21	56.38	69.43
J594	2.41	0.18	1.19	311.02	298.53	307.67	73.34	55.59	68.58
J670	0.41	0.03	0.2	311.01	298.48	307.65	76.8	58.98	72.02
J1284	0.7	0.05	0.35	311.01	298.47	307.65	73.94	56.1	69.16
J1286	0.74	0.05	0.37	311.01	298.46	307.65	73	55.16	68.22
J1288	0.21	0.02	0.1	311.01	298.47	307.65	74.01	56.18	69.23
J1294	0	0	0	311.02	298.56	307.68	75.15	57.44	70.4
J1300	0.87	0.06	0.43	311.01	298.46	307.65	72.11	54.26	67.32
J1302	0.45	0.03	0.22	311.01	298.46	307.65	72.02	54.18	67.24
J1304	0.21	0.02	0.1	311.01	298.45	307.64	73.23	55.37	68.44
J1306	1.07	0.08	0.53	311.01	298.45	307.64	73.12	55.26	68.33
J1308	0.91	0.07	0.45	311.01	298.45	307.64	72.44	54.58	67.65
J1312	0.25	0.02	0.12	311.01	298.46	307.65	71.93	54.09	67.15
J1314	0.58	0.04	0.29	311.01	298.46	307.65	72.23	54.38	67.44
J1322	0.91	0.07	0.45	311.01	298.45	307.64	72.71	54.85	67.92

Hydraulic Model Results: Peak Hour Demand - Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

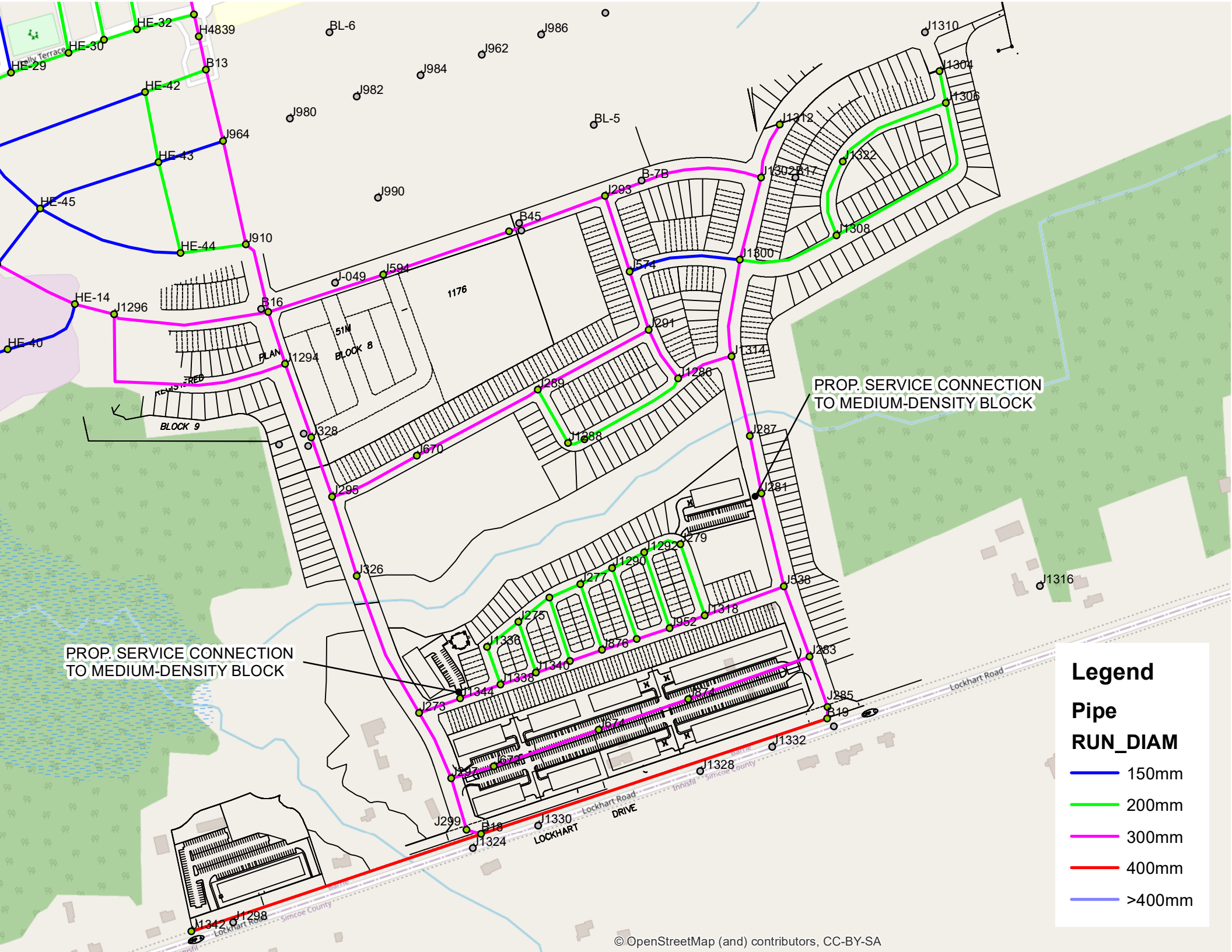
	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
ANNEX_12332	1.04	0.08	0.52	0.01	0	0	0	0	0
P4796	14.22	1.05	7.05	0.2	0.01	0.1	0.2	0	0.06
P4798	9.43	0.69	4.67	0.13	0.01	0.07	0.09	0	0.03
P4800	2.17	0.16	1.07	0.03	0	0.02	0.01	0	0
P4802	3.47	0.26	1.72	0.05	0	0.02	0.02	0	0
P4804	0.54	0.04	0.27	0.02	0	0.01	0	0	0
P4806	0.34	0.03	0.17	0.01	0	0.01	0	0	0
P4808	2.43	0.18	1.2	0.03	0	0.02	0.01	0	0
P4810	10.42	0.77	5.17	0.15	0.01	0.07	0.11	0	0.04
P4812	8.99	0.66	4.46	0.13	0.01	0.06	0.09	0	0.03
P4814	7.53	0.55	3.73	0.11	0.01	0.05	0.06	0	0.02
P4816	1.19	0.09	0.59	0.02	0	0.01	0	0	0
P4850	0.05	0	0.03	0	0	0	0	0	0
P4852	0.2	0.01	0.1	0.01	0	0	0	0	0
P4854	0.01	0	0.01	0	0	0	0	0	0
P4856	0.1	0.01	0.05	0	0	0	0	0	0
P4858	0.99	0.07	0.49	0.01	0	0.01	0	0	0
P4860	0.55	0.04	0.27	0.01	0	0	0	0	0
P4862	0.12	0.01	0.06	0	0	0	0	0	0
P4864	0.12	0.01	0.06	0	0	0	0	0	0
P4866	7.26	0.53	3.6	0.41	0.03	0.2	2.37	0.02	0.75
P4868	4.85	0.36	2.4	0.27	0.02	0.14	1.13	0.01	0.36
P4870	0.04	0	0.02	0	0	0	0	0	0
P4872	6.23	0.46	3.09	0.35	0.03	0.17	1.79	0.01	0.57
P4918	10.5	0.77	5.2	0.15	0.01	0.07	0.11	0	0.04
P4948	0.12	0.01	0.06	0	0	0	0	0	0
P4950	0.5	0.04	0.25	0.01	0	0	0	0	0
P4952	1.41	0.1	0.7	0.02	0	0.01	0	0	0
P4958	2.17	0.16	1.07	0.03	0	0.02	0.01	0	0
P4962	1.04	0.08	0.52	0.01	0	0.01	0	0	0
P4970	0.44	0.03	0.22	0.01	0	0.01	0	0	0
P4972	0.48	0.04	0.24	0.02	0	0.01	0	0	0
P4974	0.58	0.04	0.29	0.02	0	0.01	0	0	0
P4976	1.91	0.14	0.95	0.03	0	0.01	0.01	0	0
P4978	0.16	0.01	0.08	0.01	0	0	0	0	0
P4980	0.06	0	0.03	0	0	0	0	0	0
P4982	3.21	0.24	1.59	0.03	0	0.01	0	0	0
P4984	4.8	0.35	2.38	0.07	0	0.03	0.03	0	0.01
P4792	22.75	1.67	11.27	0.32	0.02	0.16	0.48	0	0.15
P4794	14.22	1.05	7.05	0.2	0.01	0.1	0.2	0	0.06
P4820	4.36	0.32	2.16	0.06	0	0.03	0.02	0	0.01
P4822	3.74	0.27	1.85	0.05	0	0.03	0.02	0	0.01
P4824	13.68	1	6.78	0.19	0.01	0.1	0.19	0	0.06
P4826	15.66	1.15	7.76	0.22	0.02	0.11	0.24	0	0.08
P4828	12.36	0.89	6.12	0.17	0.01	0.09	0.16	0	0.05
P4830	6.52	0.48	3.23	0.09	0.01	0.05	0.05	0	0.02
P4832	18.06	1.33	8.95	0.26	0.02	0.13	0.31	0	0.1
P4838	7.44	0.55	3.69	0.11	0.01	0.05	0.06	0	0.02
P4840	1.36	0.1	0.68	0.04	0	0.02	0.02	0	0.01
P4842	2.27	0.17	1.12	0.07	0.01	0.04	0.05	0	0.02
P4844	2.06	0.15	1.02	0.07	0	0.03	0.05	0	0.02
P4846	7.9	0.58	3.92	0.11	0.01	0.06	0.07	0	0.02
P4848	7.49	0.55	3.71	0.11	0.01	0.05	0.06	0	0.02
P4874	22.75	1.67	11.27	0.32	0.02	0.16	0.48	0	0.15
P4912	8.06	0.59	3.99	0.11	0.01	0.06	0.07	0	0.02
P4922	5.92	0.44	2.94	0.08	0.01	0.04	0.04	0	0.01
P4924	1.05	0.08	0.52	0.06	0	0.03	0.07	0	0.02
P4926	0.25	0.02	0.12	0	0	0	0	0	0
P4928	6.62	0.49	3.28	0.09	0.01	0.05	0.05	0	0.02
P4930	3.09	0.23	1.53	0.1	0.01	0.05	0.1	0	0.03
P4932	0.21	0.02	0.1	0.01	0	0	0	0	0

Hydraulic Model Results: Peak Hour Demand - Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
P4934	0.87	0.06	0.43	0.03	0	0.01	0.01	0	0
P4936	1.32	0.1	0.65	0.04	0	0.02	0.02	0	0.01
P4944	3.02	0.22	1.5	0.04	0	0.02	0.01	0	0
P4954	0.41	0.03	0.2	0.01	0	0.01	0	0	0


PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
BLOCK 8
BLOCK 9
LOCKHART
DRIVE
Lockhart Road
Legend
Pipe
RUN_DIAM
150mm
200mm
300mm
400mm
>400mm
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Hydraulic Model Results: Fire Flow Simulation - Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

MDD + FF Scenario

ID	Static Demand (L/s)	Static Pressure (psi)	Static Head (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (psi)	Critical Pipe ID at Available Flow	Critical Pipe Velocity at Available Flow (m/s)
J1276	0.23	61.12	304.57	250	32.9	312.07	20	P4860	2.13
J1290	0.16	64.75	304.57	200	42.92	304.74	20	P4806	3.57
J1292	0.22	64.46	304.57	200	41.95	298.03	20	P4852	3.88
J1318	0.33	60.81	304.57	250	33.14	314.44	20	P4950	2.73
J1320	0.29	62.76	304.57	250	34.55	319.34	20	P4976	2.16
J1334	0.1	65.43	304.57	233	37.44	309.11	20	P4970	3.54
J1336	0.07	66.26	304.57	200	42.65	290.54	21.47	P4974	5
J1338	0.31	64.46	304.57	250	36.81	330.6	20	P4802	2.9
J1340	0.24	63.6	304.57	250	35.56	324.12	20	P4808	2.36
J1342	2.14	62.04	304.56	250	29.26	291.15	20	P4982	2.32
J1344	0.88	65.45	304.57	250	38.51	340.79	20	P4984	3.37
J275	0.07	65.9	304.57	233	37.68	309.39	20	P4804	3.5
J277	0.1	65.03	304.57	233	37.05	307.59	20	P4970	3.52
J279	0.07	64.19	304.57	200	38.69	275.24	20	P4854	4.7
J281	0.96	63.62	304.57	217	43.61	345.19	20	P4810	2.94
J283	0.08	55.03	304.56	100	48.87	290.23	20	P4814	2.43
J285	0.09	54.54	304.56	283	19.63	281.33	20	P4816	2.46
J287	0.05	63.18	304.57	217	43.79	348.7	20	P4918	3.23
J538	0.64	58.93	304.57	250	33	318.45	20	P4812	2.37
J672	1.61	64.84	304.56	283	29.58	327.26	20	P4866	3.37
J674	3.21	61.41	304.56	283	24.14	304.18	20	P4868	2.37
J874	4.18	58.49	304.56	300	17.55	293.58	20	P4872	2.45
J876	0.24	61.96	304.57	250	33.7	315.46	20	P4952	2.01
J952	0.21	60.67	304.57	250	32.62	311.15	20	P4864	2.3

Water Quality Model Results: Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
B18	42.4	220:50	0	00:00	27.57	42.4
B19	26.92	227:30	0	00:00	20.33	26.92
J273	23.03	215:40	0	00:00	11.57	23.03
J275	37.23	226:10	0	00:00	18.91	37.23
J277	38.37	212:00	0	00:00	28.84	38.37
J279	47.53	230:30	0	00:00	36.83	47.53
J281	25.5	224:40	0	00:00	16.19	25.5
J283	24.93	208:10	0	00:00	17.33	24.93
J285	29.01	228:30	0	00:00	19.71	29.01
J287	25.68	224:10	0	00:00	15.89	25.68
J297	32.51	216:30	0	00:00	12.07	32.51
J299	31.1	220:10	0	00:00	13.61	31.1
J538	26.44	225:20	0	00:00	16.77	26.44
J672	32.04	216:40	0	00:00	12.17	32.04
J674	31.51	217:50	0	00:00	12.53	31.51
J874	26.93	226:10	0	00:00	17.81	26.93
J876	38.08	225:40	0	00:00	16.78	38.08
J952	41.32	153:10	0	00:00	30.29	41.32
J1276	33.3	228:40	0	00:00	19.59	33.3
J1290	44.81	234:10	0	00:00	33.61	44.81
J1292	52.83	158:10	0	00:00	43.63	52.83
J1318	33.11	231:50	0	00:00	23.36	33.11
J1320	38.64	222:50	0	00:00	15.18	38.64
J1334	36.69	228:30	0	00:00	23.66	36.69
J1336	36.43	222:20	0	00:00	14.91	36.43
J1338	34.44	219:00	0	00:00	12.97	34.44
J1340	36.21	220:40	0	00:00	13.96	36.21
J1342	48.32	233:00	0	00:00	36.96	48.32
J1344	29.02	203:00	0	00:00	12.2	29.02
J289	32.98	218:20	0	00:00	12.73	32.98
J291	24.89	205:40	0	00:00	14.16	24.89
J293	29.22	135:30	0	00:00	11.88	29.22
J295	20.02	129:00	0	00:00	10.51	20.02
J326	25.08	201:50	0	00:00	10.88	25.08
J328	22.05	201:10	0	00:00	10.33	22.05
J408	24.11	200:10	0	00:00	10.35	24.11
J490	27.2	135:00	0	00:00	11.37	27.2
J574	29.65	136:20	0	00:00	12.72	29.65
J594	24.21	134:30	0	00:00	10.8	24.21
J670	30.41	215:30	0	00:00	11.39	30.41

Water Quality Model Results: Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
J1284	35.88	220:20	0	00:00	13.76	35.88
J1286	24.23	206:10	0	00:00	14.83	24.23
J1288	30.85	204:30	0	00:00	13.51	30.85
J1294	27.5	201:00	0	00:00	10.14	27.5
J1300	30.11	138:00	0	00:00	14.39	30.11
J1302	29.85	218:20	0	00:00	13.51	29.85
J1304	41.19	236:30	0	00:00	31.36	41.19
J1306	37.82	232:10	0	00:00	25.76	37.82
J1308	32.54	222:00	0	00:00	15.54	32.54
J1312	47.98	224:40	0	00:00	32.4	47.98
J1314	24.26	224:00	0	00:00	15.48	24.26
J1322	35.52	225:40	0	00:00	17.6	35.52

Water Quality Model Results: Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
ANNEX_12332	41.82	176:50	0	00:00	36.4	41.82
P4796	19.63	202:00	0	00:00	11.23	19.63
P4798	21.48	202:30	0	00:00	11.81	21.48
P4800	18.4	203:50	0	00:00	12.85	18.4
P4802	20.41	203:20	0	00:00	12.58	20.41
P4804	24.38	210:00	0	00:00	20	24.38
P4806	34.97	176:30	0	00:00	30.55	34.97
P4808	20.69	204:20	0	00:00	13.46	20.69
P4810	21.71	206:50	0	00:00	16.03	21.71
P4812	22.1	207:30	0	00:00	16.47	22.1
P4814	22.61	208:00	0	00:00	17.03	22.61
P4816	22.78	209:40	0	00:00	18.5	22.78
P4850	35.65	228:40	0	00:00	31.42	35.65
P4852	42.11	153:00	0	00:00	36.34	42.11
P4854	56.59	177:00	0	00:00	48.38	56.59
P4856	32.95	152:50	0	00:00	28.79	32.95
P4858	22.78	210:00	0	00:00	18.15	22.78
P4860	26.12	233:40	0	00:00	23.22	26.12
P4862	43.14	153:30	0	00:00	37.45	43.14
P4864	35.47	152:50	0	00:00	30.7	35.47
P4866	26.58	216:30	0	00:00	12.1	26.58
P4868	22.21	203:00	0	00:00	12.34	22.21
P4870	38.26	224:50	0	00:00	33.29	38.26
P4872	23.29	208:20	0	00:00	17.46	23.29
P4918	21.41	206:40	0	00:00	15.67	21.41
P4948	35.13	152:50	0	00:00	30.39	35.13
P4950	23.35	209:30	0	00:00	19.96	23.35
P4952	21.53	207:20	0	00:00	15.97	21.53
P4958	23.02	204:50	0	00:00	13.82	23.02
P4962	25.51	229:00	0	00:00	20.02	25.51
P4970	28.72	210:50	0	00:00	24.9	28.72
P4972	20.85	207:50	0	00:00	16.07	20.85
P4974	19.02	205:20	0	00:00	13.94	19.02
P4976	21.01	205:40	0	00:00	14.56	21.01
P4978	22.04	209:00	0	00:00	18.6	22.04
P4980	34.66	224:50	0	00:00	30.52	34.66
P4982	38.11	209:00	0	00:00	32.14	38.11
P4984	20.77	202:30	0	00:00	11.87	20.77
P4792	24.26	201:20	0	00:00	10.43	24.26
P4794	20.98	201:30	0	00:00	10.71	20.98

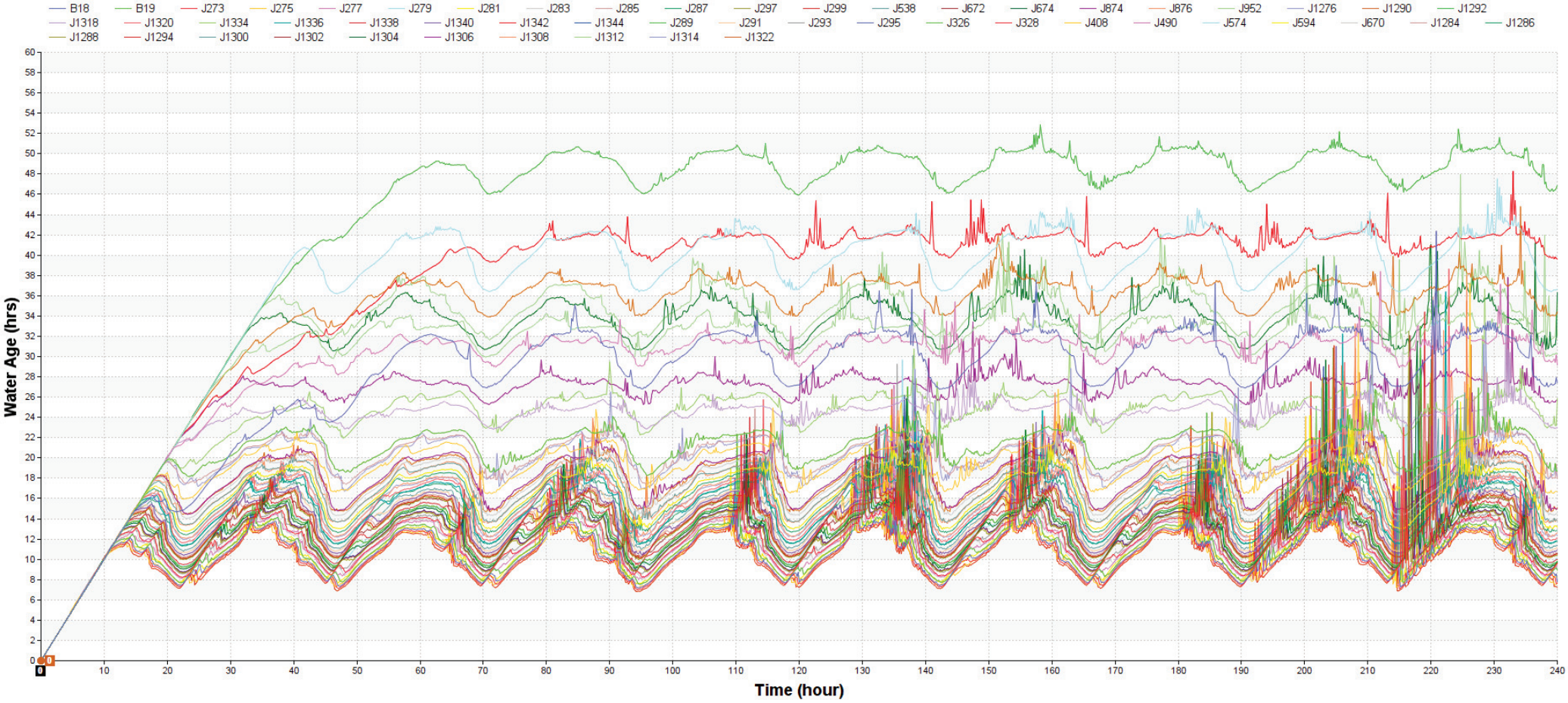
Water Quality Model Results: Interim Scenario 1

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

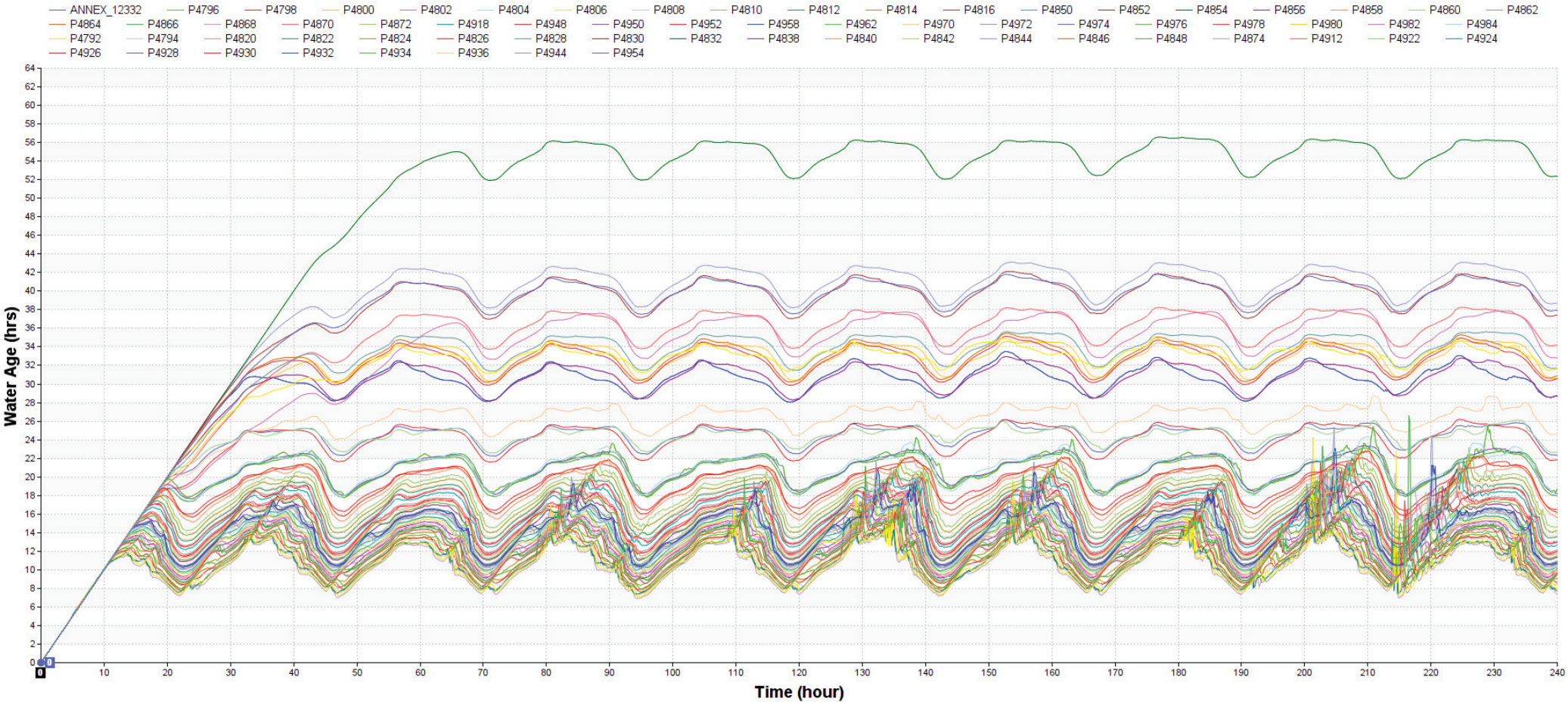
Pipe Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
P4820	18.76	205:00	0	00:00	13.65	18.76
P4822	19.08	203:30	0	00:00	13.2	19.08
P4824	18.23	201:30	0	00:00	11.61	18.23
P4826	17.25	201:00	0	00:00	11.07	17.25
P4828	19.25	200:20	0	00:00	10.5	19.25
P4830	18.04	202:30	0	00:00	12.28	18.04
P4832	17.67	200:20	0	00:00	10.57	17.67
P4838	20.7	205:50	0	00:00	14.38	20.7
P4840	19.71	206:20	0	00:00	14.83	19.71
P4842	21.07	204:00	0	00:00	13.1	21.07
P4844	25.31	204:40	0	00:00	13.62	25.31
P4846	18.83	201:50	0	00:00	10.96	18.83
P4848	18.22	202:50	0	00:00	12.05	18.22
P4874	21.75	201:10	0	00:00	10.23	21.75
P4912	20.78	206:20	0	00:00	15.04	20.78
P4922	20.1	204:20	0	00:00	13.93	20.1
P4924	18.15	204:10	0	00:00	13.56	18.15
P4926	26.2	224:30	0	00:00	22.98	26.2
P4928	17.35	203:10	0	00:00	12.69	17.35
P4930	20.61	205:30	0	00:00	14.96	20.61
P4932	33.51	152:50	0	00:00	28.62	33.51
P4934	23.1	209:30	0	00:00	19.76	23.1
P4936	21.07	207:40	0	00:00	16.56	21.07
P4944	20.03	205:50	0	00:00	15.16	20.03
P4954	26.16	152:30	0	00:00	23.21	26.16

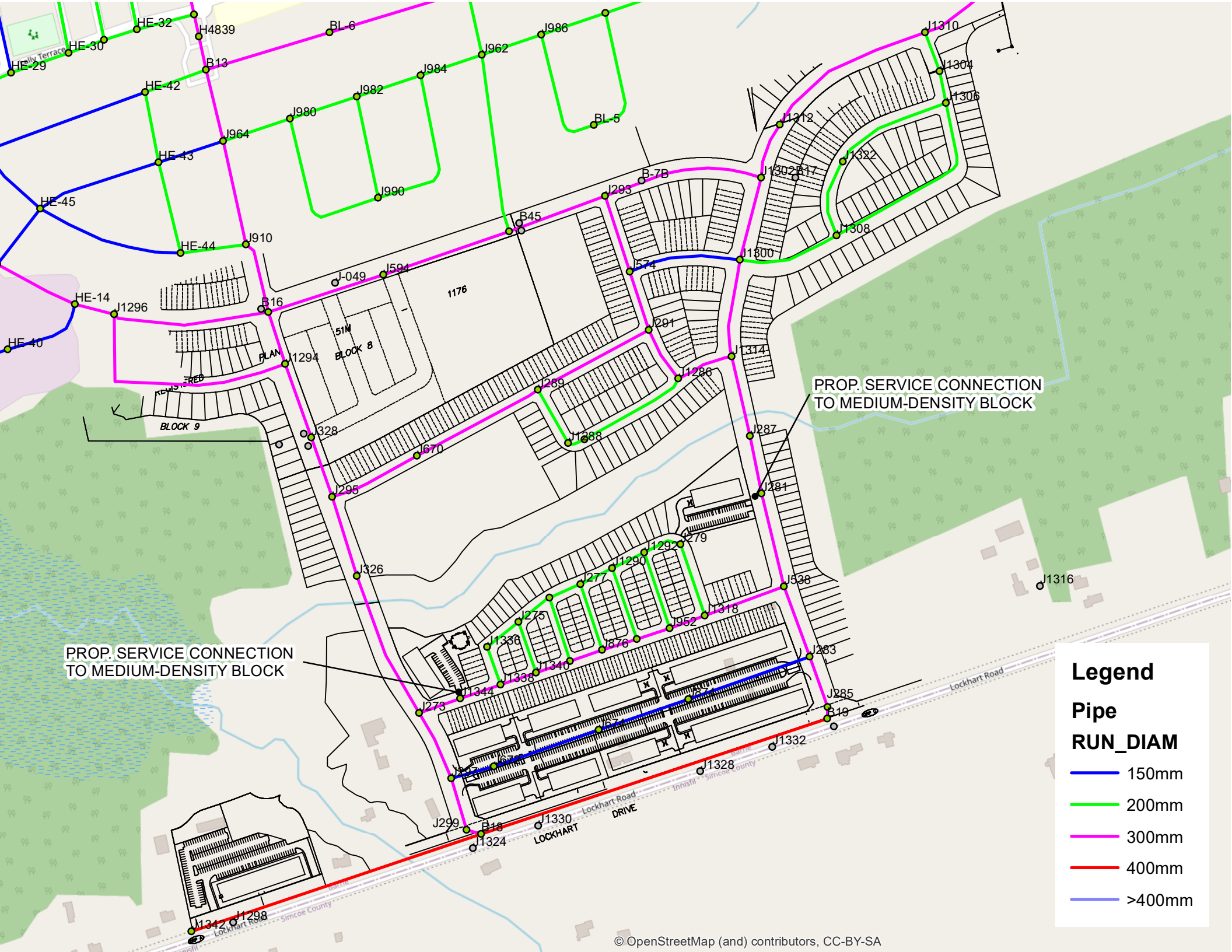
Junction B18,B19,...,J1322



Pipe ANNEX_12332,P4796,...,P4954



INTERIM SCENARIO 2


PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
Legend
Pipe
RUN_DIAM
150mm
200mm
300mm
400mm
>400mm
Lockhart Road
DRIVE
LOCKHART
BLOCK 8
BLOCK 9
1176
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Hydraulic Model Results: Average Day Demand - Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range

	DEMAND			HEAD			PRESSURE		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m)	Min.Value (m)	Average (m)	Max.Value (psi)	Min.Value (psi)	Average (psi)
B18	0	0	0	311.04	302.87	307.95	74.7	63.08	70.3
B19	0	0	0	311.04	302.87	307.95	63.47	51.85	59.07
J273	0	0	0	311.04	302.88	307.96	75.68	64.06	71.29
J275	0.07	0.01	0.03	311.04	302.87	307.96	75.11	63.49	70.72
J277	0.11	0.01	0.05	311.04	302.87	307.96	74.24	62.63	69.85
J279	0.07	0.01	0.03	311.04	302.87	307.96	73.4	61.79	69.01
J281	0.97	0.07	0.48	311.04	302.88	307.96	72.82	61.21	68.43
J283	0.08	0.01	0.04	311.04	302.87	307.95	64.25	52.63	59.85
J285	0.1	0.01	0.05	311.04	302.87	307.95	63.75	52.13	59.36
J287	0.05	0	0.03	311.04	302.88	307.96	72.38	60.78	67.99
J297	0	0	0	311.04	302.87	307.95	75.18	63.56	70.79
J299	0	0	0	311.04	302.87	307.95	74.98	63.36	70.59
J538	0.65	0.05	0.32	311.04	302.87	307.96	68.14	56.53	63.75
J672	1.63	0.12	0.81	311.04	302.82	307.94	74.05	62.36	69.64
J674	3.28	0.24	1.63	311.04	302.75	307.91	70.62	58.84	66.18
J874	4.26	0.31	2.11	311.04	302.75	307.91	67.7	55.91	63.25
J876	0.25	0.02	0.12	311.04	302.87	307.96	71.17	59.56	66.78
J952	0.22	0.02	0.11	311.04	302.87	307.96	69.88	58.26	65.49
J1276	0.23	0.02	0.12	311.04	302.87	307.96	70.33	58.72	65.94
J1290	0.16	0.01	0.08	311.04	302.87	307.96	73.96	62.34	69.57
J1292	0.23	0.02	0.11	311.04	302.87	307.96	73.67	62.06	69.28
J1318	0.34	0.03	0.17	311.04	302.87	307.96	70.02	58.41	65.63
J1320	0.3	0.02	0.15	311.04	302.87	307.96	71.97	60.35	67.58
J1334	0.1	0.01	0.05	311.04	302.87	307.96	74.64	63.03	70.25
J1336	0.07	0.01	0.03	311.04	302.87	307.96	75.46	63.85	71.07
J1338	0.31	0.02	0.16	311.04	302.87	307.96	73.67	62.06	69.28
J1340	0.25	0.02	0.12	311.04	302.87	307.96	72.81	61.19	68.41
J1342	2.18	0.16	1.08	311.04	302.87	307.95	71.26	59.64	66.86
J1344	0.9	0.07	0.44	311.04	302.87	307.96	74.66	63.05	70.27
J289	0.43	0.03	0.21	311.04	302.89	307.96	75.78	64.19	71.39
J291	0.33	0.02	0.16	311.04	302.89	307.96	74.77	63.18	70.38
J293	0.27	0.02	0.13	311.04	302.9	307.96	71.53	59.94	67.14
J295	0.31	0.02	0.15	311.04	302.9	307.96	77.68	66.1	73.3
J326	0	0	0	311.04	302.89	307.96	74.41	62.82	70.03
J328	0	0	0	311.05	302.91	307.97	75.48	63.91	71.1
J408	0	0	0	311.05	302.92	307.97	74.41	62.86	70.04
J490	1.35	0.1	0.67	311.05	302.9	307.96	72.3	60.72	67.92
J574	0.86	0.06	0.42	311.04	302.89	307.96	74.26	62.67	69.87
J594	1.63	0.12	0.81	311.05	302.91	307.97	73.38	61.81	69
J670	0.2	0.02	0.1	311.04	302.9	307.96	76.84	65.26	72.46
J1284	0.35	0.03	0.17	311.04	302.89	307.96	73.99	62.4	69.6
J1286	0.37	0.03	0.18	311.04	302.89	307.96	73.05	61.46	68.66
J1288	0.1	0.01	0.05	311.04	302.89	307.96	74.06	62.47	69.67
J1294	0	0	0	311.05	302.92	307.97	75.18	63.63	70.81
J1300	0.43	0.03	0.21	311.04	302.89	307.96	72.15	60.56	67.77
J1302	0.22	0.02	0.11	311.04	302.89	307.96	72.07	60.48	67.68
J1304	0.1	0.01	0.05	311.04	302.89	307.96	73.28	61.69	68.89
J1306	0.53	0.04	0.26	311.04	302.89	307.96	73.17	61.58	68.78
J1308	0.45	0.03	0.22	311.04	302.89	307.96	72.49	60.9	68.11
J1312	0.12	0.01	0.06	311.04	302.89	307.96	71.98	60.39	67.59
J1314	0.29	0.02	0.14	311.04	302.89	307.96	72.28	60.68	67.89
J1322	0.45	0.03	0.22	311.04	302.89	307.96	72.76	61.17	68.37

Hydraulic Model Results: Average Day Demand - Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
ANNEX_12332	0.97	0.07	0.48	0.01	0	0	0	0	0
P4796	8.78	0.65	4.35	0.12	0.01	0.06	0.08	0	0.03
P4798	6.15	0.45	3.05	0.09	0.01	0.04	0.04	0	0.01
P4800	1.22	0.09	0.6	0.02	0	0.01	0	0	0
P4802	1.73	0.13	0.86	0.02	0	0.01	0	0	0
P4804	0.23	0.02	0.11	0.01	0	0	0	0	0
P4806	0.12	0.01	0.06	0	0	0	0	0	0
P4808	1.14	0.08	0.56	0.02	0	0.01	0	0	0
P4810	7.99	0.59	3.96	0.11	0.01	0.06	0.07	0	0.02
P4812	7.01	0.51	3.47	0.1	0.01	0.05	0.05	0	0.02
P4814	5.39	0.4	2.67	0.08	0.01	0.04	0.03	0	0.01
P4816	1.07	0.08	0.53	0.02	0	0.01	0	0	0
P4850	0.06	0	0.03	0	0	0	0	0	0
P4852	0.05	0	0.02	0	0	0	0	0	0
P4854	0.07	0.01	0.04	0	0	0	0	0	0
P4856	0.09	0.01	0.05	0	0	0	0	0	0
P4858	0.16	0.01	0.08	0	0	0	0	0	0
P4860	0.16	0.01	0.08	0	0	0	0	0	0
P4862	0.1	0.01	0.05	0	0	0	0	0	0
P4864	0.49	0.03	0.24	0.01	0	0	0	0	0
P4866	4.94	0.36	2.45	0.28	0.02	0.14	1.16	0.01	0.37
P4868	3.31	0.24	1.64	0.19	0.01	0.09	0.55	0	0.18
P4870	0.02	0	0.01	0	0	0	0	0	0
P4872	4.24	0.31	2.1	0.24	0.02	0.12	0.88	0.01	0.28
P4918	8.04	0.59	3.98	0.11	0.01	0.06	0.07	0	0.02
P4948	0.14	0.01	0.07	0	0	0	0	0	0
P4950	0.97	0.07	0.48	0.01	0	0.01	0	0	0
P4952	0.47	0.03	0.23	0.01	0	0	0	0	0
P4958	1.22	0.09	0.6	0.02	0	0.01	0	0	0
P4962	0.97	0.07	0.48	0.01	0	0.01	0	0	0
P4970	0.16	0.01	0.08	0.01	0	0	0	0	0
P4972	0.21	0.02	0.11	0.01	0	0	0	0	0
P4974	0.28	0.02	0.14	0.01	0	0	0	0	0
P4976	0.81	0.06	0.4	0.01	0	0.01	0	0	0
P4978	0.08	0.01	0.04	0	0	0	0	0	0
P4980	0.04	0	0.02	0	0	0	0	0	0
P4982	2.18	0.16	1.08	0.02	0	0.01	0	0	0
P4984	2.63	0.19	1.3	0.04	0	0.02	0.01	0	0
P4792	11.89	0.88	5.9	0.17	0.01	0.08	0.14	0	0.05
P4794	8.78	0.65	4.35	0.12	0.01	0.06	0.08	0	0.03
P4820	1.13	0.09	0.56	0.02	0	0.01	0	0	0
P4822	3.37	0.25	1.67	0.05	0	0.02	0.01	0	0
P4824	8.09	0.6	4.01	0.11	0.01	0.06	0.07	0	0.02
P4826	6.44	0.48	3.2	0.09	0.01	0.05	0.05	0	0.01
P4828	5.88	0.43	2.91	0.08	0.01	0.04	0.04	0	0.01
P4830	4.68	0.34	2.32	0.07	0	0.03	0.03	0	0.01
P4832	8.07	0.6	4.01	0.11	0.01	0.06	0.07	0	0.02
P4838	4.17	0.31	2.07	0.06	0	0.03	0.02	0	0.01
P4840	0.59	0.04	0.29	0.02	0	0.01	0	0	0
P4842	1.04	0.08	0.52	0.03	0	0.02	0.01	0	0
P4844	0.94	0.07	0.46	0.03	0	0.01	0.01	0	0
P4846	2.8	0.21	1.39	0.04	0	0.02	0.01	0	0
P4848	2.59	0.19	1.29	0.04	0	0.02	0.01	0	0
P4874	11.89	0.88	5.9	0.17	0.01	0.08	0.14	0	0.05
P4912	4.4	0.33	2.18	0.06	0	0.03	0.02	0	0.01
P4922	3.99	0.29	1.98	0.06	0	0.03	0.02	0	0.01
P4924	0.45	0.03	0.22	0.03	0	0.01	0.01	0	0
P4926	1.07	0.07	0.53	0.02	0	0.01	0	0	0
P4928	3.14	0.23	1.56	0.04	0	0.02	0.01	0	0
P4930	0.08	0.01	0.04	0	0	0	0	0	0
P4932	1.35	0.1	0.67	0.04	0	0.02	0.02	0	0.01

Hydraulic Model Results: Average Day Demand - Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
P4934	0.35	0.02	0.17	0.01	0	0.01	0	0	0
P4936	0.02	0	0.01	0	0	0	0	0	0
P4944	3.93	0.28	1.95	0.06	0	0.03	0.02	0	0.01
P4954	0.46	0.03	0.23	0.01	0	0.01	0	0	0

Hydraulic Model Results: Maximum Day Demand - Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range

	DEMAND			HEAD			PRESSURE		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m)	Min.Value (m)	Average (m)	Max.Value (psi)	Min.Value (psi)	Average (psi)
B18	0	0	0	311.18	292.89	307.56	74.89	48.88	69.74
B19	0	0	0	311.18	292.89	307.56	63.66	37.65	58.51
J273	0	0	0	311.18	292.89	307.56	75.87	49.87	70.73
J275	0.07	0	0.03	311.18	292.89	307.56	75.3	49.3	70.16
J277	0.1	0.01	0.05	311.18	292.89	307.56	74.43	48.43	69.29
J279	0.07	0	0.03	311.18	292.89	307.56	73.59	47.59	68.45
J281	0.96	0.07	0.47	311.18	292.89	307.56	73.01	47.01	67.87
J283	0.08	0.01	0.04	311.18	292.89	307.56	64.44	38.43	59.3
J285	0.08	0.01	0.04	311.18	292.89	307.56	63.94	37.94	58.8
J287	0.05	0	0.03	311.18	292.89	307.56	72.57	46.58	67.43
J297	0	0	0	311.18	292.89	307.56	75.37	49.37	70.23
J299	0	0	0	311.18	292.89	307.56	75.17	49.17	70.03
J538	0.64	0.05	0.32	311.18	292.89	307.56	68.33	42.33	63.19
J672	1.61	0.12	0.8	311.17	292.83	307.54	74.24	48.17	69.08
J674	3.2	0.24	1.59	311.17	292.77	307.52	70.81	44.65	65.62
J874	4.18	0.31	2.07	311.17	292.77	307.52	67.88	41.73	62.69
J876	0.24	0.02	0.12	311.18	292.89	307.56	71.36	45.36	66.22
J952	0.21	0.02	0.11	311.18	292.89	307.56	70.07	44.07	64.93
J1276	0.23	0.02	0.11	311.18	292.89	307.56	70.52	44.52	65.38
J1290	0.16	0.01	0.08	311.18	292.89	307.56	74.15	48.15	69.01
J1292	0.22	0.02	0.11	311.18	292.89	307.56	73.86	47.86	68.72
J1318	0.33	0.02	0.17	311.18	292.89	307.56	70.21	44.21	65.07
J1320	0.29	0.02	0.15	311.18	292.89	307.56	72.16	46.16	67.02
J1334	0.1	0.01	0.05	311.18	292.89	307.56	74.83	48.83	69.69
J1336	0.07	0	0.03	311.18	292.89	307.56	75.65	49.65	70.51
J1338	0.31	0.02	0.15	311.18	292.89	307.56	73.86	47.86	68.72
J1340	0.24	0.02	0.12	311.18	292.89	307.56	73	46.99	67.85
J1342	2.14	0.16	1.06	311.18	292.88	307.56	71.45	45.44	66.3
J1344	0.88	0.06	0.43	311.18	292.89	307.56	74.85	48.85	69.71
J289	0.58	0.04	0.29	311.18	292.91	307.57	75.97	49.99	70.83
J291	0.44	0.03	0.22	311.18	292.9	307.57	74.96	48.98	69.82
J293	0.36	0.03	0.18	311.18	292.91	307.57	71.72	45.74	66.58
J295	0.41	0.03	0.2	311.18	292.91	307.57	77.87	51.91	72.74
J326	0	0	0	311.18	292.9	307.57	74.6	48.62	69.47
J328	0	0	0	311.18	292.93	307.58	75.67	49.73	70.55
J408	0	0	0	311.18	292.95	307.58	74.61	48.69	69.49
J490	1.31	0.1	0.65	311.18	292.92	307.57	72.49	46.53	67.36
J574	1.16	0.09	0.57	311.18	292.9	307.57	74.45	48.47	69.31
J594	1.61	0.12	0.8	311.18	292.93	307.58	73.57	47.63	68.45
J670	0.28	0.02	0.14	311.18	292.91	307.57	77.04	51.06	71.9
J1284	0.47	0.03	0.23	311.18	292.9	307.57	74.18	48.2	69.04
J1286	0.5	0.04	0.25	311.18	292.9	307.57	73.24	47.26	68.1
J1288	0.14	0.01	0.07	311.18	292.9	307.57	74.25	48.27	69.11
J1294	0	0	0	311.18	292.95	307.58	75.38	49.45	70.26
J1300	0.58	0.04	0.29	311.18	292.9	307.57	72.34	46.35	67.2
J1302	0.3	0.02	0.15	311.18	292.9	307.57	72.26	46.27	67.12
J1304	0.14	0.01	0.07	311.18	292.9	307.56	73.47	47.48	68.33
J1306	0.72	0.05	0.35	311.18	292.9	307.56	73.36	47.37	68.22
J1308	0.61	0.04	0.3	311.18	292.9	307.56	72.68	46.69	67.54
J1312	0.17	0.01	0.08	311.18	292.9	307.57	72.17	46.18	67.03
J1314	0.39	0.03	0.19	311.18	292.9	307.57	72.47	46.48	67.33
J1322	0.61	0.04	0.3	311.18	292.9	307.56	72.95	46.96	67.81

Hydraulic Model Results: Maximum Day Demand - Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
ANNEX_12332	0.66	0.04	0.32	0.01	0	0	0	0	0
P4796	9.63	0.72	4.77	0.14	0.01	0.07	0.1	0	0.03
P4798	6.33	0.47	3.14	0.09	0.01	0.04	0.04	0	0.01
P4800	1.49	0.11	0.74	0.02	0	0.01	0	0	0
P4802	2.42	0.18	1.2	0.03	0	0.02	0.01	0	0
P4804	0.38	0.03	0.19	0.01	0	0.01	0	0	0
P4806	0.25	0.02	0.12	0.01	0	0	0	0	0
P4808	1.71	0.13	0.85	0.02	0	0.01	0	0	0
P4810	6.79	0.49	3.37	0.1	0.01	0.05	0.05	0	0.02
P4812	5.84	0.42	2.89	0.08	0.01	0.04	0.04	0	0.01
P4814	4.97	0.36	2.46	0.07	0.01	0.03	0.03	0	0.01
P4816	0.74	0.05	0.37	0.01	0	0.01	0	0	0
P4850	0.03	0	0.02	0	0	0	0	0	0
P4852	0.16	0.01	0.08	0	0	0	0	0	0
P4854	0	0	0	0	0	0	0	0	0
P4856	0.06	0	0.03	0	0	0	0	0	0
P4858	0.74	0.06	0.37	0.01	0	0.01	0	0	0
P4860	0.46	0.04	0.23	0.01	0	0	0	0	0
P4862	0.07	0	0.04	0	0	0	0	0	0
P4864	0.17	0.02	0.08	0	0	0	0	0	0
P4866	4.84	0.36	2.4	0.27	0.02	0.14	1.12	0.01	0.36
P4868	3.23	0.24	1.6	0.18	0.01	0.09	0.53	0	0.17
P4870	0.03	0	0.02	0	0	0	0	0	0
P4872	4.15	0.31	2.06	0.23	0.02	0.12	0.84	0.01	0.27
P4918	6.84	0.49	3.39	0.1	0.01	0.05	0.05	0	0.02
P4948	0.06	0	0.03	0	0	0	0	0	0
P4950	0.23	0.01	0.11	0	0	0	0	0	0
P4952	1.02	0.08	0.51	0.01	0	0.01	0	0	0
P4958	1.49	0.11	0.74	0.02	0	0.01	0	0	0
P4962	0.66	0.04	0.32	0.01	0	0	0	0	0
P4970	0.32	0.03	0.16	0.01	0	0.01	0	0	0
P4972	0.34	0.03	0.17	0.01	0	0.01	0	0	0
P4974	0.41	0.03	0.2	0.01	0	0.01	0	0	0
P4976	1.35	0.1	0.67	0.02	0	0.01	0	0	0
P4978	0.11	0.01	0.06	0	0	0	0	0	0
P4980	0.04	0	0.02	0	0	0	0	0	0
P4982	2.14	0.16	1.06	0.02	0	0.01	0	0	0
P4984	3.3	0.25	1.63	0.05	0	0.02	0.01	0	0
P4792	15.49	1.17	7.68	0.22	0.02	0.11	0.24	0	0.07
P4794	9.63	0.72	4.77	0.14	0.01	0.07	0.1	0	0.03
P4820	3	0.23	1.49	0.04	0	0.02	0.01	0	0
P4822	2.88	0.21	1.43	0.04	0	0.02	0.01	0	0
P4824	11.04	0.82	5.47	0.16	0.01	0.08	0.13	0	0.04
P4826	9.72	0.74	4.82	0.14	0.01	0.07	0.1	0	0.03
P4828	6.76	0.48	3.34	0.1	0.01	0.05	0.05	0	0.02
P4830	4.85	0.35	2.4	0.07	0.01	0.03	0.03	0	0.01
P4832	11.33	0.86	5.61	0.16	0.01	0.08	0.13	0	0.04
P4838	5.44	0.41	2.7	0.08	0.01	0.04	0.03	0	0.01
P4840	0.99	0.08	0.49	0.03	0	0.02	0.01	0	0
P4842	1.6	0.12	0.79	0.05	0	0.03	0.03	0	0.01
P4844	1.46	0.11	0.72	0.05	0	0.02	0.03	0	0.01
P4846	5.45	0.42	2.7	0.08	0.01	0.04	0.03	0	0.01
P4848	5.18	0.4	2.56	0.07	0.01	0.04	0.03	0	0.01
P4874	15.49	1.17	7.68	0.22	0.02	0.11	0.24	0	0.07
P4912	5.94	0.45	2.94	0.08	0.01	0.04	0.04	0	0.01
P4922	2.4	0.16	1.19	0.03	0	0.02	0.01	0	0
P4924	0.82	0.06	0.4	0.05	0	0.02	0.04	0	0.01
P4926	3.13	0.26	1.55	0.04	0	0.02	0.01	0	0
P4928	5.83	0.44	2.89	0.08	0.01	0.04	0.04	0	0.01
P4930	1.35	0.11	0.67	0.04	0	0.02	0.02	0	0.01
P4932	0.59	0.03	0.29	0.02	0	0.01	0.01	0	0

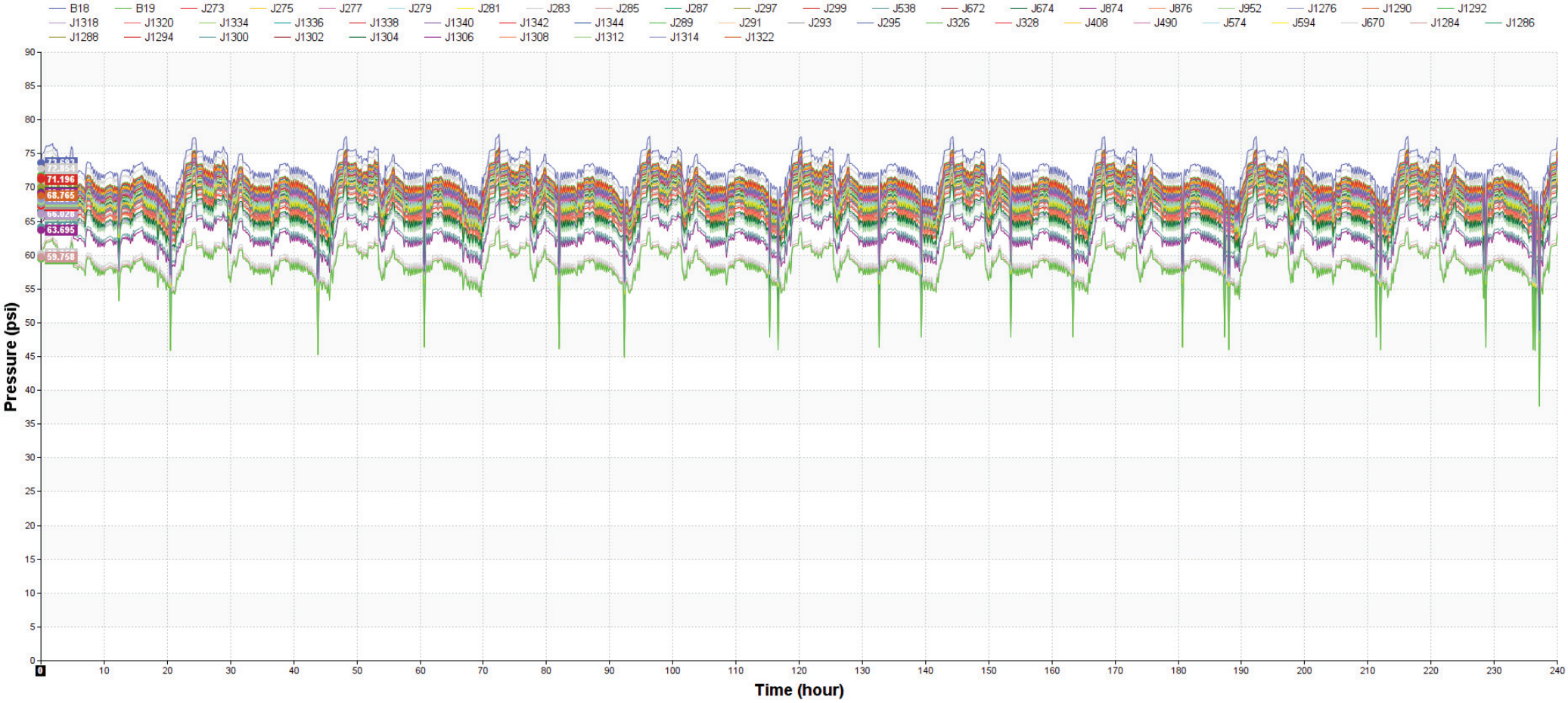
Hydraulic Model Results: Maximum Day Demand - Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
P4934	0.26	0.02	0.13	0.01	0	0	0	0	0
P4936	0.48	0.04	0.24	0.02	0	0.01	0	0	0
P4944	1.3	0.07	0.64	0.02	0	0.01	0	0	0
P4954	0.13	0	0.06	0	0	0	0	0	0

Junction B18,B19,...,J1322



Hydraulic Model Results: Peak Hour Demand - Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range

	DEMAND			HEAD			PRESSURE		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m)	Min.Value (m)	Average (m)	Max.Value (psi)	Min.Value (psi)	Average (psi)
B18	0	0	0	311.31	297.51	307.48	75.08	55.45	69.64
B19	0	0	0	311.31	297.51	307.48	63.84	44.22	58.4
J273	0	0	0	311.31	297.52	307.49	76.06	56.44	70.62
J275	0.1	0.01	0.05	311.31	297.51	307.49	75.49	55.87	70.05
J277	0.16	0.01	0.08	311.31	297.51	307.49	74.62	55.01	69.18
J279	0.1	0.01	0.05	311.31	297.51	307.49	73.78	54.17	68.34
J281	1.43	0.11	0.71	311.31	297.52	307.49	73.2	53.6	67.77
J283	0.12	0.01	0.06	311.31	297.51	307.48	64.63	45	59.19
J285	0.14	0.01	0.07	311.31	297.51	307.48	64.13	44.51	58.69
J287	0.08	0.01	0.04	311.31	297.53	307.49	72.76	53.17	67.33
J297	0	0	0	311.31	297.51	307.48	75.56	55.94	70.12
J299	0	0	0	311.31	297.51	307.48	75.36	55.74	69.92
J538	0.96	0.07	0.47	311.31	297.51	307.49	68.52	48.91	63.08
J672	2.41	0.18	1.19	311.31	297.39	307.45	74.43	54.65	68.94
J674	4.81	0.35	2.39	311.3	297.26	307.4	70.99	51.03	65.45
J874	6.26	0.46	3.1	311.3	297.26	307.4	68.06	48.1	62.52
J876	0.36	0.03	0.18	311.31	297.51	307.49	71.55	51.94	66.11
J952	0.32	0.02	0.16	311.31	297.51	307.49	70.26	50.64	64.82
J1276	0.34	0.03	0.17	311.31	297.51	307.49	70.71	51.1	65.27
J1290	0.24	0.02	0.12	311.31	297.51	307.49	74.34	54.72	68.9
J1292	0.33	0.02	0.17	311.31	297.51	307.49	74.05	54.44	68.61
J1318	0.5	0.04	0.25	311.31	297.51	307.49	70.4	50.78	64.96
J1320	0.44	0.03	0.22	311.31	297.51	307.49	72.35	52.73	66.91
J1334	0.15	0.01	0.08	311.31	297.51	307.49	75.02	55.4	69.58
J1336	0.1	0.01	0.05	311.31	297.51	307.49	75.84	56.23	70.41
J1338	0.46	0.03	0.23	311.31	297.51	307.49	74.05	54.44	68.61
J1340	0.36	0.03	0.18	311.31	297.51	307.49	73.19	53.57	67.75
J1342	3.21	0.24	1.59	311.31	297.51	307.48	71.64	52.01	66.19
J1344	1.33	0.1	0.66	311.31	297.51	307.49	75.04	55.43	69.6
J289	0.87	0.06	0.43	311.31	297.55	307.5	76.16	56.6	70.74
J291	0.66	0.05	0.33	311.31	297.55	307.5	75.15	55.59	69.73
J293	0.54	0.04	0.27	311.31	297.56	307.5	71.91	52.35	66.49
J295	0.62	0.05	0.31	311.31	297.56	307.5	78.06	58.52	72.65
J326	0	0	0	311.31	297.55	307.5	74.79	55.22	69.37
J328	0	0	0	311.32	297.59	307.51	75.86	56.35	70.45
J408	0	0	0	311.32	297.63	307.52	74.8	55.34	69.41
J490	1.98	0.14	0.98	311.31	297.58	307.51	72.68	53.15	67.27
J574	1.73	0.13	0.86	311.31	297.55	307.5	74.64	55.08	69.22
J594	2.41	0.18	1.19	311.32	297.6	307.51	73.76	54.26	68.36
J670	0.41	0.03	0.2	311.31	297.56	307.5	77.23	57.67	71.8
J1284	0.7	0.05	0.35	311.31	297.55	307.5	74.37	54.8	68.94
J1286	0.74	0.05	0.37	311.31	297.55	307.5	73.43	53.86	68
J1288	0.21	0.02	0.1	311.31	297.55	307.5	74.44	54.87	69.01
J1294	0	0	0	311.32	297.62	307.52	75.57	56.1	70.17
J1300	0.87	0.06	0.43	311.31	297.55	307.5	72.53	52.96	67.11
J1302	0.45	0.03	0.22	311.31	297.55	307.5	72.45	52.88	67.02
J1304	0.21	0.02	0.1	311.31	297.55	307.5	73.66	54.09	68.23
J1306	1.07	0.08	0.53	311.31	297.55	307.5	73.55	53.98	68.12
J1308	0.91	0.07	0.45	311.31	297.54	307.5	72.87	53.3	67.45
J1312	0.25	0.02	0.12	311.31	297.55	307.5	72.36	52.79	66.93
J1314	0.58	0.04	0.29	311.31	297.54	307.5	72.66	53.08	67.23
J1322	0.91	0.07	0.45	311.31	297.54	307.5	73.14	53.56	67.71

Hydraulic Model Results: Peak Hour Demand - Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

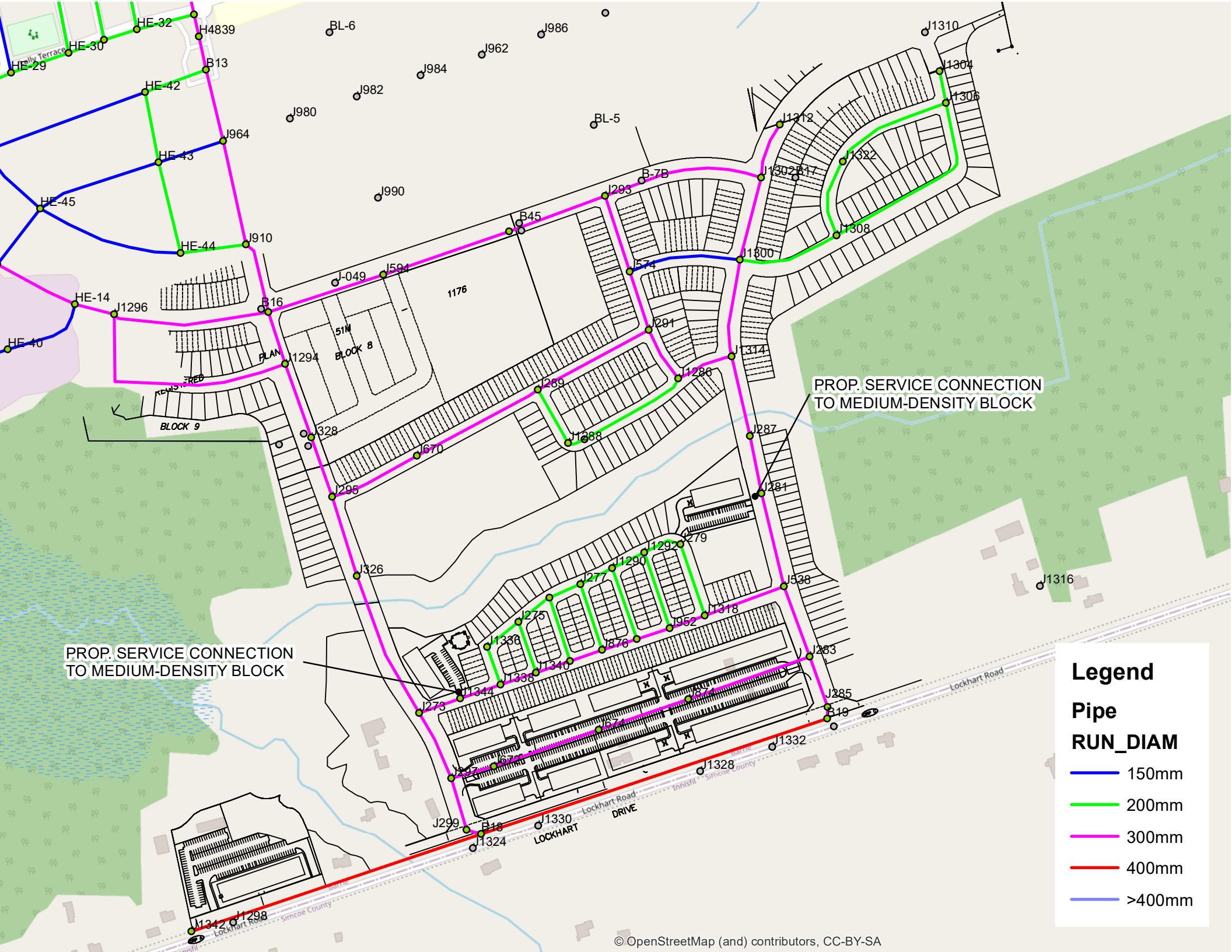
	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
ANNEX_12332	1.25	0.09	0.62	0.01	0	0	0	0	0
P4796	13.54	1	6.71	0.19	0.01	0.09	0.18	0	0.06
P4798	9.22	0.68	4.57	0.13	0.01	0.06	0.09	0	0.03
P4800	1.96	0.14	0.97	0.03	0	0.01	0.01	0	0
P4802	2.99	0.22	1.48	0.04	0	0.02	0.01	0	0
P4804	0.43	0.03	0.21	0.01	0	0.01	0	0	0
P4806	0.25	0.02	0.12	0.01	0	0	0	0	0
P4808	2.03	0.15	1.01	0.03	0	0.01	0.01	0	0
P4810	11.11	0.81	5.51	0.16	0.01	0.08	0.13	0	0.04
P4812	9.68	0.7	4.8	0.14	0.01	0.07	0.1	0	0.03
P4814	7.74	0.57	3.84	0.11	0.01	0.05	0.07	0	0.02
P4816	1.39	0.1	0.69	0.02	0	0.01	0	0	0
P4850	0.07	0	0.03	0	0	0	0	0	0
P4852	0.13	0.01	0.06	0	0	0	0	0	0
P4854	0.06	0	0.03	0	0	0	0	0	0
P4856	0.12	0.01	0.06	0	0	0	0	0	0
P4858	0.61	0.05	0.3	0.01	0	0	0	0	0
P4860	0.14	0.01	0.07	0	0	0	0	0	0
P4862	0.14	0.01	0.07	0	0	0	0	0	0
P4864	0.32	0.02	0.16	0	0	0	0	0	0
P4866	7.26	0.53	3.6	0.41	0.03	0.2	2.37	0.02	0.75
P4868	4.85	0.36	2.4	0.27	0.02	0.14	1.13	0.01	0.36
P4870	0.04	0	0.02	0	0	0	0	0	0
P4872	6.23	0.46	3.09	0.35	0.03	0.17	1.79	0.01	0.57
P4918	11.19	0.81	5.55	0.16	0.01	0.08	0.13	0	0.04
P4948	0.16	0.01	0.08	0.01	0	0	0	0	0
P4950	0.98	0.07	0.49	0.01	0	0.01	0	0	0
P4952	1.04	0.08	0.51	0.01	0	0.01	0	0	0
P4958	1.96	0.14	0.97	0.03	0	0.01	0.01	0	0
P4962	1.25	0.09	0.62	0.02	0	0.01	0	0	0
P4970	0.33	0.02	0.17	0.01	0	0.01	0	0	0
P4972	0.39	0.03	0.19	0.01	0	0.01	0	0	0
P4974	0.49	0.04	0.24	0.02	0	0.01	0	0	0
P4976	1.53	0.11	0.76	0.02	0	0.01	0	0	0
P4978	0.14	0.01	0.07	0	0	0	0	0	0
P4980	0.06	0	0.03	0	0	0	0	0	0
P4982	3.21	0.24	1.59	0.03	0	0.01	0	0	0
P4984	4.32	0.32	2.14	0.06	0	0.03	0.02	0	0.01
P4792	20.36	1.5	10.09	0.29	0.02	0.14	0.39	0	0.12
P4794	13.54	1	6.71	0.19	0.01	0.09	0.18	0	0.06
P4820	2.96	0.22	1.46	0.04	0	0.02	0.01	0	0
P4822	4.7	0.34	2.33	0.07	0	0.03	0.03	0	0.01
P4824	14.43	1.07	7.14	0.2	0.02	0.1	0.21	0	0.07
P4826	11.9	0.88	5.9	0.17	0.01	0.08	0.14	0	0.05
P4828	9.75	0.7	4.83	0.14	0.01	0.07	0.1	0	0.03
P4830	7.34	0.54	3.64	0.1	0.01	0.05	0.06	0	0.02
P4832	14.31	1.06	7.09	0.2	0.01	0.1	0.2	0	0.06
P4838	6.99	0.52	3.46	0.1	0.01	0.05	0.05	0	0.02
P4840	1.06	0.08	0.53	0.03	0	0.02	0.01	0	0
P4842	1.97	0.15	0.97	0.06	0	0.03	0.04	0	0.01
P4844	1.76	0.13	0.87	0.06	0	0.03	0.04	0	0.01
P4846	6.2	0.46	3.07	0.09	0.01	0.04	0.04	0	0.01
P4848	5.79	0.43	2.87	0.08	0.01	0.04	0.04	0	0.01
P4874	20.36	1.5	10.09	0.29	0.02	0.14	0.39	0	0.12
P4912	7.31	0.54	3.62	0.1	0.01	0.05	0.06	0	0.02
P4922	5.35	0.38	2.65	0.08	0.01	0.04	0.03	0	0.01
P4924	0.92	0.07	0.45	0.05	0	0.03	0.05	0	0.02
P4926	0.75	0.06	0.36	0.01	0	0.01	0	0	0
P4928	6.55	0.49	3.24	0.09	0.01	0.05	0.05	0	0.02
P4930	0.95	0.07	0.47	0.03	0	0.01	0.01	0	0
P4932	1.94	0.14	0.96	0.06	0	0.03	0.04	0	0.01

Hydraulic Model Results: Peak Hour Demand - Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
P4934	0.33	0.02	0.16	0.01	0	0.01	0	0	0
P4936	0.37	0.03	0.18	0.01	0	0.01	0	0	0
P4944	4.45	0.31	2.21	0.06	0	0.03	0.02	0	0.01
P4954	0.54	0.04	0.27	0.02	0	0.01	0	0	0


PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
Legend
Pipe
RUN_DIAM
150mm
200mm
300mm
400mm
>400mm
Lockhart Road
DRIVE
LOCKHART
BLOCK 8
BLOCK 9
PLAN
1176
51M
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Hydraulic Model Results: Fire Flow Simulation - Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

MDD + FF Scenario

ID	Static Demand (L/s)	Static Pressure (psi)	Static Head (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (psi)	Critical Pipe ID at Available Flow	Critical Pipe Velocity at Available Flow (m/s)
J1276	0.23	61.13	304.57	250	39.89	368.57	20	P4860	2.53
J1290	0.16	64.75	304.57	200	47.7	351.5	20	P4806	4.12
J1292	0.22	64.47	304.57	200	46.73	341.95	20	P4852	4.45
J1318	0.33	60.82	304.57	250	40.13	373.06	20	P4950	3.26
J1320	0.29	62.76	304.57	250	41.53	377.08	20	P4976	2.55
J1334	0.1	65.44	304.57	233	43.63	357.1	20	P4970	4.09
J1336	0.07	66.26	304.57	200	47.42	290.57	30.5	P4974	5
J1338	0.31	64.47	304.57	250	43.78	391.89	20	P4802	3.42
J1340	0.24	63.6	304.57	250	42.54	383.19	20	P4808	2.78
J1342	2.14	62.05	304.57	250	36.24	334.14	20	P4982	2.66
J1344	0.88	65.46	304.57	250	45.47	405.99	20	P4984	3.99
J275	0.07	65.9	304.57	233	43.86	356.88	20	P4804	4.04
J277	0.1	65.04	304.57	233	43.24	355.38	20	P4970	4.07
J279	0.07	64.2	304.57	200	43.47	292.62	24.19	P4854	5
J281	0.96	63.62	304.58	217	49.34	421.79	20	P4810	3.76
J283	0.08	55.04	304.57	100	50.35	345.89	20	P4814	2.9
J285	0.09	54.54	304.57	283	28.28	332.45	20	P4816	2.91
J287	0.05	63.19	304.58	217	49.7	433.23	20	P4918	4.24
J538	0.64	58.94	304.57	250	40.05	384.17	20	P4812	2.94
J672	1.61	64.85	304.57	283	38.22	385.32	20	P4866	3.96
J674	3.21	61.42	304.56	283	32.79	354.22	20	P4868	2.76
J874	4.18	58.49	304.56	300	27.12	342.18	20	P4872	2.85
J876	0.24	61.97	304.57	250	40.68	372.4	20	P4952	2.37
J952	0.21	60.67	304.57	250	39.61	368.03	20	P4864	2.73

Water Quality Model Results: Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
B18	41.89	180:50	0	00:00	29.42	41.89
B19	29.3	209:30	0	00:00	23.38	29.3
J273	25.08	202:50	0	00:00	11.34	25.08
J275	32.16	185:40	0	00:00	20.83	32.16
J277	39.92	178:50	0	00:00	33.05	39.92
J279	40.31	224:00	0	00:00	33.47	40.31
J281	25.63	207:20	0	00:00	19.76	25.63
J283	26.87	183:30	0	00:00	20.85	26.87
J285	28.69	210:20	0	00:00	22.88	28.69
J287	25.74	180:40	0	00:00	19.47	25.74
J297	28.6	178:20	0	00:00	11.82	28.6
J299	25.95	205:20	0	00:00	13.6	25.95
J538	26.48	181:30	0	00:00	20.3	26.48
J672	25.41	203:20	0	00:00	11.9	25.41
J674	26.24	203:50	0	00:00	12.24	26.24
J874	27.1	207:20	0	00:00	21.32	27.1
J876	30.2	210:30	0	00:00	18.84	30.2
J952	32.37	187:30	0	00:00	27.1	32.37
J1276	40.55	219:30	0	00:00	31.95	40.55
J1290	50.21	225:00	0	00:00	41.18	50.21
J1292	51.61	233:10	0	00:00	43.33	51.61
J1318	29.82	186:20	0	00:00	23.87	29.82
J1320	29.57	207:50	0	00:00	16	29.57
J1334	33.4	140:00	0	00:00	27.13	33.4
J1336	29.87	207:10	0	00:00	15.45	29.87
J1338	28.13	204:40	0	00:00	12.99	28.13
J1340	29.52	206:00	0	00:00	14.31	29.52
J1342	48.09	177:20	0	00:00	38.77	48.09
J1344	28.44	178:30	0	00:00	12.01	28.44
J289	28.93	180:30	0	00:00	13.76	28.93
J291	24.32	204:00	0	00:00	15.66	24.32
J293	22.92	202:30	0	00:00	13.45	22.92
J295	22.39	201:40	0	00:00	10.21	22.39
J326	28.4	177:10	0	00:00	10.61	28.4
J328	26.44	176:30	0	00:00	10.03	26.44
J408	24.12	200:20	0	00:00	9.81	24.12
J490	25.28	177:00	0	00:00	12.92	25.28
J574	25.01	203:10	0	00:00	14.12	25.01
J594	27.13	175:20	0	00:00	10.47	27.13
J670	28.01	178:10	0	00:00	11.63	28.01

Water Quality Model Results: Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
J1284	30.16	206:50	0	00:00	15.08	30.16
J1286	24.53	204:40	0	00:00	16.47	24.53
J1288	30.01	206:30	0	00:00	14.76	30.01
J1294	24.21	176:00	0	00:00	9.77	24.21
J1300	29.41	180:40	0	00:00	20.42	29.41
J1302	30.86	179:40	0	00:00	20.01	30.86
J1304	39.78	234:20	0	00:00	26.18	39.78
J1306	39.81	234:40	0	00:00	26.63	39.81
J1308	58.9	229:00	0	00:00	39.05	58.9
J1312	51.95	196:40	0	00:00	31.59	51.95
J1314	25.25	180:10	0	00:00	19.07	25.25
J1322	50.47	196:00	0	00:00	31.28	50.47

Water Quality Model Results: Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
ANNEX_12332	41.71	224:50	0	00:00	36.39	41.71
P4796	18.82	202:20	0	00:00	10.97	18.82
P4798	20.6	202:50	0	00:00	11.57	20.6
P4800	17.99	204:40	0	00:00	12.7	17.99
P4802	19.07	203:50	0	00:00	12.49	19.07
P4804	25.42	210:40	0	00:00	22.44	25.42
P4806	41.22	224:30	0	00:00	35.63	41.22
P4808	19.58	205:30	0	00:00	13.65	19.58
P4810	24.65	207:10	0	00:00	19.61	24.65
P4812	24.64	207:30	0	00:00	20.03	24.64
P4814	25.2	208:00	0	00:00	20.57	25.2
P4816	25.76	208:50	0	00:00	21.86	25.76
P4850	33.36	224:50	0	00:00	29.35	33.36
P4852	54.7	225:10	0	00:00	46.81	54.7
P4854	44.04	228:40	0	00:00	37.76	44.04
P4856	44.34	228:40	0	00:00	38.47	44.34
P4858	26.16	200:30	0	00:00	23.67	26.16
P4860	36.55	224:50	0	00:00	31.42	36.55
P4862	39.03	225:00	0	00:00	33.77	39.03
P4864	28.48	234:20	0	00:00	25.47	28.48
P4866	26.67	203:20	0	00:00	11.85	26.67
P4868	22.12	203:30	0	00:00	12.07	22.12
P4870	39.15	225:00	0	00:00	34	39.15
P4872	26.01	208:30	0	00:00	21	26.01
P4918	24.01	206:40	0	00:00	19.26	24.01
P4948	32.85	224:30	0	00:00	28.77	32.85
P4950	25.8	209:30	0	00:00	22.06	25.8
P4952	21.93	210:00	0	00:00	17.41	21.93
P4958	23.17	205:20	0	00:00	13.84	23.17
P4962	27.62	210:30	0	00:00	23.13	27.62
P4970	33.03	200:30	0	00:00	29.05	33.03
P4972	21.48	209:50	0	00:00	17.06	21.48
P4974	18.88	206:40	0	00:00	14.23	18.88
P4976	20.48	207:10	0	00:00	15.14	20.48
P4978	23.11	210:00	0	00:00	20.13	23.11
P4980	34.5	228:40	0	00:00	30.5	34.5
P4982	39.69	228:40	0	00:00	34.05	39.69
P4984	19.75	203:00	0	00:00	11.67	19.75
P4792	21.75	201:40	0	00:00	10.12	21.75
P4794	20.01	201:50	0	00:00	10.41	20.01

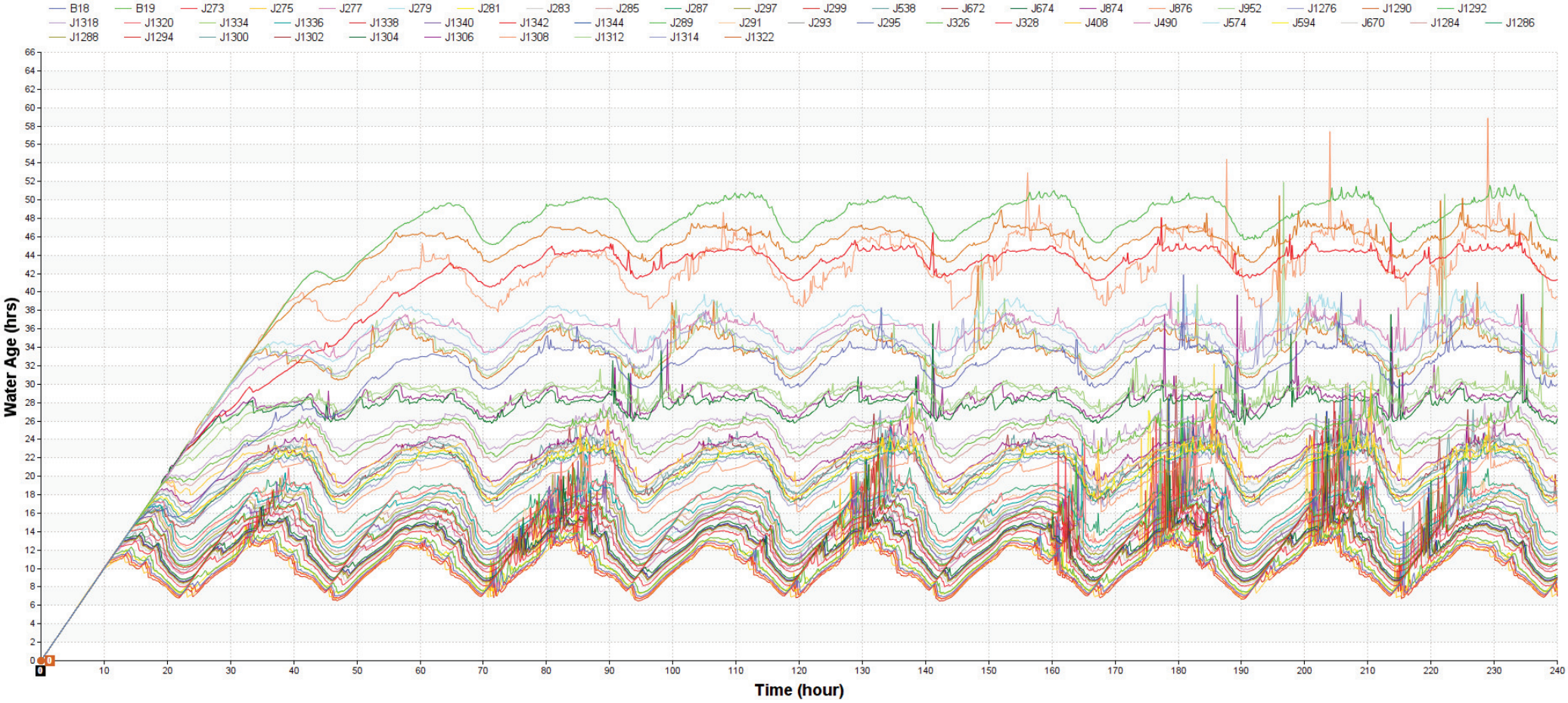
Water Quality Model Results: Interim Scenario 2

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

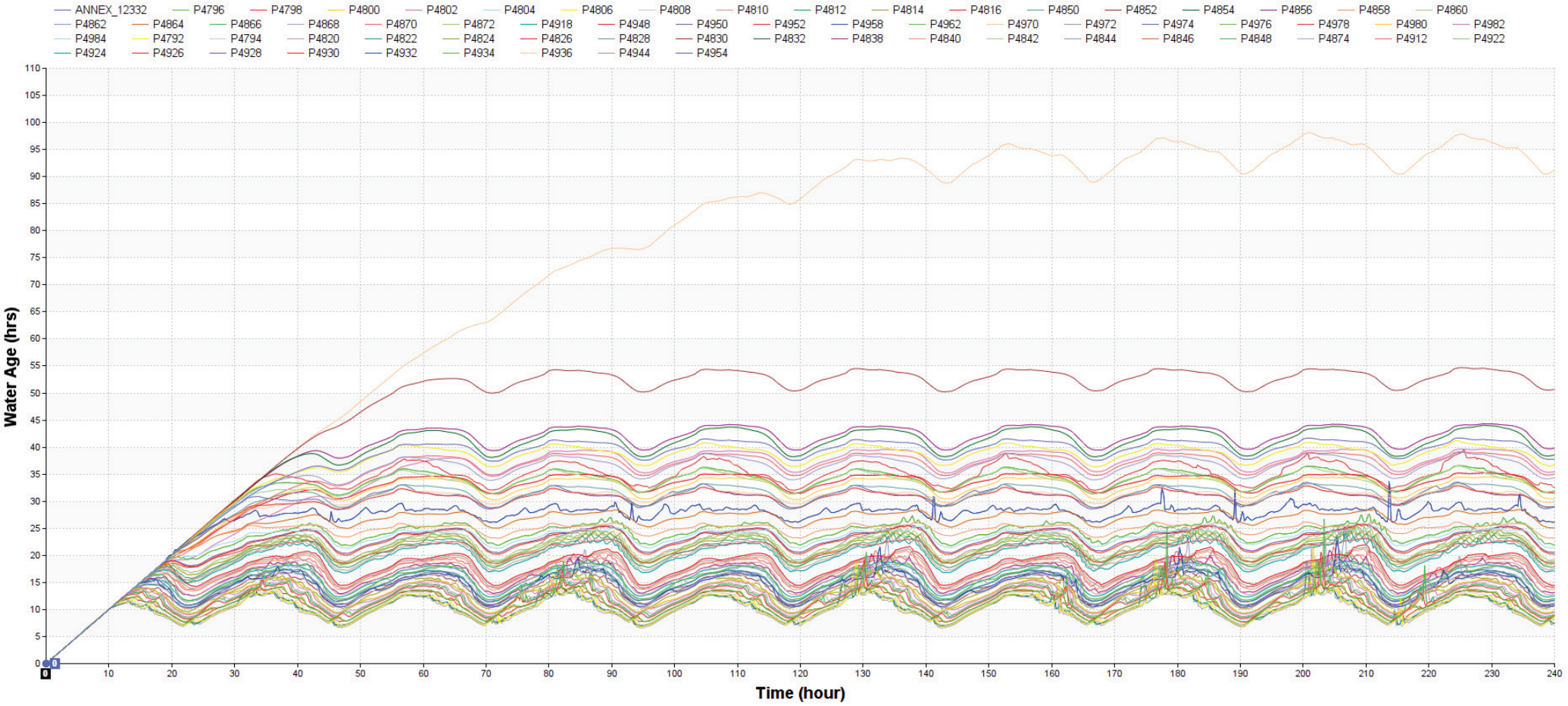
Pipe Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
P4820	20.1	209:20	0	00:00	15.9	20.1
P4822	19.46	203:20	0	00:00	14.48	19.46
P4824	19.17	202:10	0	00:00	13.18	19.17
P4826	16.4	201:40	0	00:00	10.86	16.4
P4828	18.73	200:40	0	00:00	10	18.73
P4830	18.86	202:40	0	00:00	13.78	18.86
P4832	16.8	200:50	0	00:00	10.13	16.8
P4838	20.83	204:10	0	00:00	15.92	20.83
P4840	21.14	209:40	0	00:00	16.73	21.14
P4842	20.77	205:50	0	00:00	14.26	20.77
P4844	25.25	206:40	0	00:00	14.92	25.25
P4846	16.56	202:30	0	00:00	10.92	16.56
P4848	17.6	204:50	0	00:00	12.68	17.6
P4874	21.16	201:20	0	00:00	9.88	21.16
P4912	21.47	204:50	0	00:00	16.73	21.47
P4922	25.41	205:00	0	00:00	20.43	25.41
P4924	19.15	205:30	0	00:00	15.36	19.15
P4926	39.48	225:30	0	00:00	32.6	39.48
P4928	18.37	204:30	0	00:00	14.46	18.37
P4930	35.26	228:40	0	00:00	31.07	35.26
P4932	33.63	213:40	0	00:00	26.39	33.63
P4934	36.58	224:50	0	00:00	31.65	36.58
P4936	98.13	201:00	0	00:00	72.95	98.13
P4944	25.67	206:10	0	00:00	20.9	25.67
P4954	33.53	224:30	0	00:00	29.01	33.53

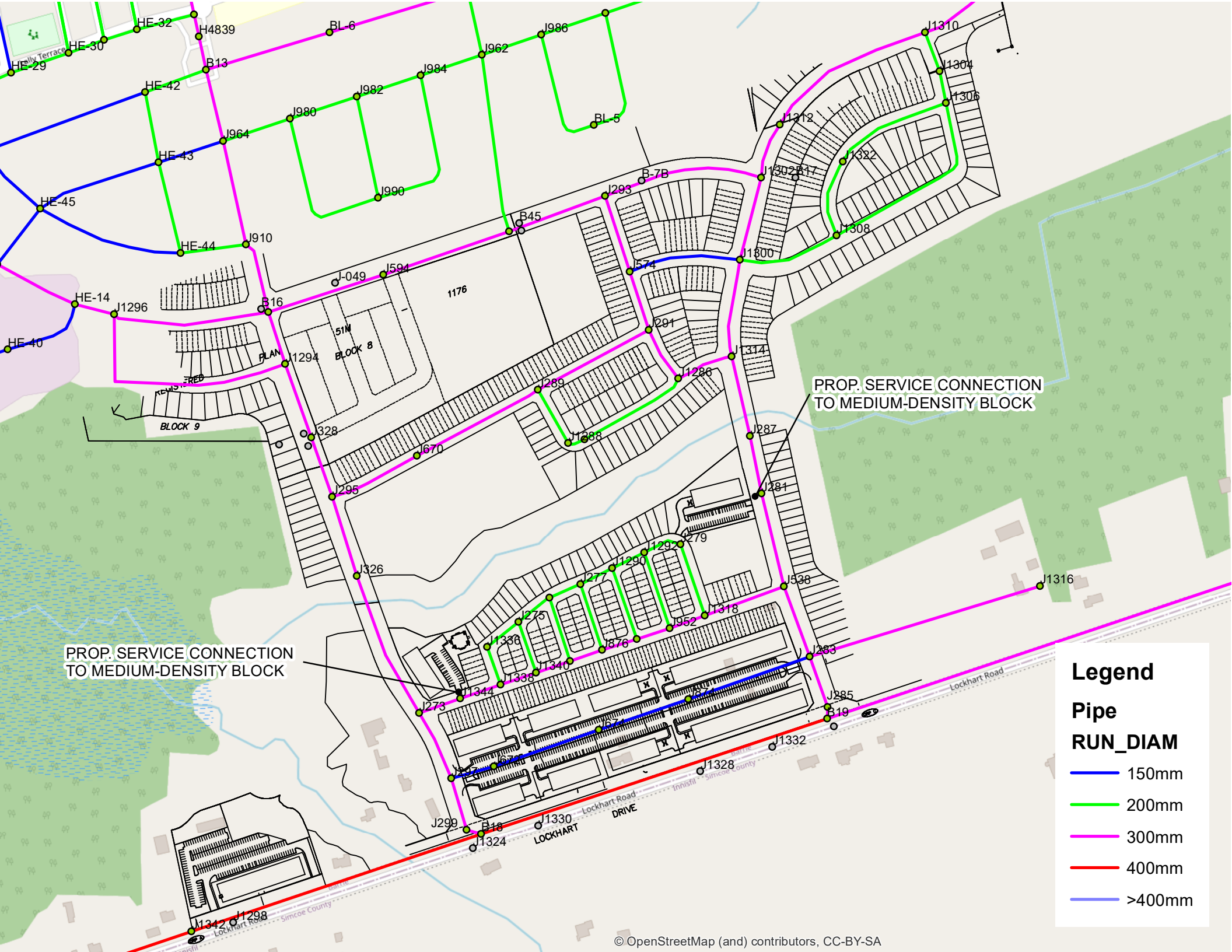
Junction B18,B19,...,J1322



Pipe ANNEX_12332,P4796,...,P4954



U L T I M A T E
S C E N A R I O


PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
BLOCK 8
BLOCK 9
LOCKHART
DRIVE
Lockhart Road
Innisfil - Simcoe County
Legend
Pipe
RUN_DIAM
150mm
200mm
300mm
400mm
>400mm
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Hydraulic Model Results: Average Day Demand - Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range

	DEMAND			HEAD			PRESSURE		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m)	Min.Value (m)	Average (m)	Max.Value (psi)	Min.Value (psi)	Average (psi)
B18	0	0	0	310.72	302.53	307.93	74.23	62.6	70.27
B19	0	0	0	310.72	302.53	307.93	63.01	51.37	59.04
J273	0	0	0	310.72	302.53	307.93	75.22	63.58	71.25
J275	0.07	0.01	0.03	310.72	302.53	307.93	74.65	63.01	70.68
J277	0.11	0.01	0.05	310.72	302.53	307.93	73.78	62.14	69.81
J279	0.07	0.01	0.03	310.72	302.53	307.93	72.95	61.3	68.97
J281	0.97	0.07	0.48	310.73	302.53	307.93	72.37	60.72	68.39
J283	0.08	0.01	0.04	310.72	302.53	307.93	63.79	52.14	59.82
J285	0.1	0.01	0.05	310.72	302.53	307.93	63.29	51.65	59.32
J287	0.05	0	0.03	310.73	302.54	307.93	71.93	60.28	67.95
J297	0	0	0	310.72	302.53	307.93	74.72	63.08	70.75
J299	0	0	0	310.72	302.53	307.93	74.52	62.88	70.55
J538	0.65	0.05	0.32	310.72	302.53	307.93	67.69	56.04	63.71
J672	1.63	0.12	0.81	310.72	302.48	307.91	73.59	61.88	69.6
J674	3.28	0.24	1.63	310.72	302.41	307.89	70.16	58.35	66.14
J874	4.26	0.31	2.11	310.72	302.41	307.89	67.23	55.43	63.22
J876	0.25	0.02	0.12	310.72	302.53	307.93	70.71	59.07	66.74
J952	0.22	0.02	0.11	310.72	302.53	307.93	69.42	57.78	65.45
J1276	0.23	0.02	0.12	310.72	302.53	307.93	69.87	58.23	65.9
J1290	0.16	0.01	0.08	310.72	302.53	307.93	73.5	61.86	69.53
J1292	0.23	0.02	0.11	310.72	302.53	307.93	73.22	61.57	69.24
J1316	6.65	0.49	3.3	310.72	302.52	307.92	62.15	50.49	58.18
J1318	0.34	0.03	0.17	310.72	302.53	307.93	69.56	57.92	65.59
J1320	0.3	0.02	0.15	310.72	302.53	307.93	71.51	59.87	67.54
J1334	0.1	0.01	0.05	310.72	302.53	307.93	74.18	62.54	70.21
J1336	0.07	0.01	0.03	310.72	302.53	307.93	75.01	63.36	71.04
J1338	0.31	0.02	0.16	310.72	302.53	307.93	73.22	61.57	69.24
J1340	0.25	0.02	0.12	310.72	302.53	307.93	72.35	60.7	68.38
J1342	2.18	0.16	1.08	310.72	302.54	307.93	70.79	59.16	66.83
J1344	0.9	0.07	0.44	310.72	302.53	307.93	74.21	62.56	70.24
J289	0.43	0.03	0.21	310.73	302.54	307.93	75.33	63.69	71.36
J291	0.33	0.02	0.16	310.73	302.54	307.93	74.32	62.68	70.35
J293	0.27	0.02	0.13	310.73	302.54	307.93	71.08	59.44	67.11
J295	0.31	0.02	0.15	310.73	302.54	307.93	77.23	65.6	73.26
J326	0	0	0	310.73	302.54	307.93	73.96	62.32	69.99
J328	0	0	0	310.73	302.55	307.94	75.03	63.4	71.06
J408	0	0	0	310.73	302.56	307.94	73.97	62.35	70
J490	1.35	0.1	0.67	310.73	302.55	307.94	71.85	60.22	67.88
J574	0.86	0.06	0.42	310.73	302.54	307.93	73.81	62.17	69.83
J594	1.63	0.12	0.81	310.73	302.55	307.94	72.93	61.3	68.96
J670	0.2	0.02	0.1	310.73	302.54	307.93	76.4	64.76	72.42
J1284	0.35	0.03	0.17	310.73	302.54	307.93	73.54	61.9	69.56
J1286	0.37	0.03	0.18	310.73	302.54	307.93	72.6	60.96	68.63
J1288	0.1	0.01	0.05	310.73	302.54	307.93	73.61	61.97	69.63
J1294	0	0	0	310.73	302.56	307.94	74.74	63.12	70.77
J1300	0.43	0.03	0.21	310.73	302.54	307.93	71.7	60.06	67.73
J1302	0.22	0.02	0.11	310.73	302.54	307.93	71.62	59.98	67.64
J1304	0.1	0.01	0.05	310.73	302.54	307.93	72.83	61.19	68.85
J1306	0.53	0.04	0.26	310.73	302.54	307.93	72.72	61.08	68.74
J1308	0.45	0.03	0.22	310.73	302.54	307.93	72.04	60.4	68.07
J1312	0.12	0.01	0.06	310.73	302.54	307.93	71.53	59.89	67.55
J1314	0.29	0.02	0.14	310.73	302.54	307.93	71.83	60.19	67.85
J1322	0.45	0.03	0.22	310.73	302.54	307.93	72.31	60.67	68.33

Hydraulic Model Results: Average Day Demand - Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
ANNEX_12332	4.21	0.02	1.91	0.03	0	0.02	0	0	0
P4796	6.64	0.1	3.57	0.09	0	0.05	0.05	0	0.02
P4798	4.63	0	1.73	0.07	0	0.02	0.02	0	0.01
P4800	3.65	0.01	1.45	0.05	0	0.02	0.02	0	0
P4802	3.24	0.01	1.47	0.05	0	0.02	0.01	0	0
P4804	0.56	0.01	0.25	0.02	0	0.01	0	0	0
P4806	0.44	0	0.19	0.01	0	0.01	0	0	0
P4808	2.38	0.01	1.06	0.03	0	0.02	0.01	0	0
P4810	6.24	0.01	3.37	0.09	0	0.05	0.04	0	0.02
P4812	5.3	0.06	2.89	0.07	0	0.04	0.03	0	0.01
P4814	4.9	0.05	2.69	0.07	0	0.04	0.03	0	0.01
P4816	6.35	0.01	2.84	0.09	0	0.04	0.05	0	0.01
P4850	0.03	0	0.02	0	0	0	0	0	0
P4852	0.33	0	0.14	0.01	0	0	0	0	0
P4854	0.16	0	0.06	0.01	0	0	0	0	0
P4856	0.06	0	0.03	0	0	0	0	0	0
P4858	1.35	0	0.57	0.02	0	0.01	0	0	0
P4860	1.06	0	0.43	0.02	0	0.01	0	0	0
P4862	0.07	0	0.03	0	0	0	0	0	0
P4864	0.78	0	0.32	0.01	0	0	0	0	0
P4866	4.97	0.34	2.46	0.28	0.02	0.14	1.18	0.01	0.37
P4868	3.34	0.22	1.65	0.19	0.01	0.09	0.56	0	0.18
P4870	0.06	0	0.03	0	0	0	0	0	0
P4872	4.21	0.3	2.09	0.24	0.02	0.12	0.86	0.01	0.27
P4918	6.28	0.02	3.39	0.09	0	0.05	0.04	0	0.02
P4946	6.65	0.49	3.3	0.09	0.01	0.05	0.05	0	0.02
P4948	0.1	0	0.04	0	0	0	0	0	0
P4950	0.54	0	0.24	0.01	0	0	0	0	0
P4952	1.63	0.01	0.7	0.02	0	0.01	0	0	0
P4958	3.65	0.01	1.45	0.05	0	0.02	0.02	0	0
P4962	6.45	0.04	2.89	0.09	0	0.04	0.05	0	0.01
P4970	0.51	0	0.22	0.02	0	0.01	0	0	0
P4972	0.48	0	0.21	0.02	0	0.01	0	0	0
P4974	0.55	0	0.25	0.02	0	0.01	0	0	0
P4976	1.98	0.04	0.87	0.03	0	0.01	0.01	0	0
P4978	0.15	0	0.07	0	0	0	0	0	0
P4980	0.05	0	0.02	0	0	0	0	0	0
P4982	7.49	0.04	3.34	0.06	0	0.03	0.01	0	0
P4984	4.14	0	1.91	0.06	0	0.03	0.02	0	0.01
P4792	9.66	0.01	5.11	0.14	0	0.07	0.1	0	0.03
P4794	6.64	0.1	3.57	0.09	0	0.05	0.05	0	0.02
P4820	1.38	0.01	0.62	0.02	0	0.01	0	0	0
P4822	2.43	0.05	1.33	0.03	0	0.02	0.01	0	0
P4824	6.06	0.01	3.22	0.09	0	0.05	0.04	0	0.01
P4826	5.53	0.18	2.92	0.08	0	0.04	0.04	0	0.01
P4828	4.28	0.04	2.28	0.06	0	0.03	0.02	0	0.01
P4830	3.6	0.03	1.93	0.05	0	0.03	0.02	0	0.01
P4832	7.09	0.3	3.73	0.1	0	0.05	0.06	0	0.02
P4838	3.33	0	1.77	0.05	0	0.03	0.01	0	0
P4840	0.48	0.02	0.26	0.02	0	0.01	0	0	0
P4842	0.92	0.06	0.48	0.03	0	0.02	0.01	0	0
P4844	0.82	0.05	0.43	0.03	0	0.01	0.01	0	0
P4846	2.94	0.03	1.4	0.04	0	0.02	0.01	0	0
P4848	2.73	0.01	1.3	0.04	0	0.02	0.01	0	0
P4874	9.66	0.01	5.11	0.14	0	0.07	0.1	0	0.03
P4912	3.45	0.01	1.85	0.05	0	0.03	0.01	0	0.01
P4922	3.3	0.01	1.76	0.05	0	0.02	0.01	0	0
P4924	0.34	0.01	0.18	0.02	0	0.01	0.01	0	0
P4926	1.36	0.03	0.71	0.02	0	0.01	0	0	0
P4928	2.21	0.08	1.17	0.03	0	0.02	0.01	0	0
P4930	0.43	0	0.13	0.01	0	0	0	0	0

Hydraulic Model Results: Average Day Demand - Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
P4932	1.25	0.03	0.67	0.04	0	0.02	0.02	0	0.01
P4934	0.33	0	0.17	0.01	0	0.01	0	0	0
P4936	0.23	0	0.05	0.01	0	0	0	0	0
P4944	3.11	0.07	1.69	0.04	0	0.02	0.01	0	0
P4954	0.42	0	0.23	0.01	0	0.01	0	0	0

Hydraulic Model Results: Maximum Day Demand - Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range

	DEMAND			HEAD			PRESSURE		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m)	Min.Value (m)	Average (m)	Max.Value (psi)	Min.Value (psi)	Average (psi)
B18	0	0	0	311.35	297.79	307.63	75.13	55.86	69.84
B19	0	0	0	311.35	297.79	307.62	63.9	44.62	58.6
J273	0	0	0	311.36	297.79	307.63	76.12	56.84	70.82
J275	0.07	0	0.03	311.36	297.79	307.62	75.55	56.26	70.25
J277	0.1	0.01	0.05	311.36	297.79	307.62	74.68	55.4	69.38
J279	0.07	0	0.03	311.36	297.79	307.62	73.85	54.56	68.54
J281	0.96	0.07	0.47	311.36	297.79	307.62	73.27	53.97	67.96
J283	0.08	0.01	0.04	311.35	297.78	307.62	64.69	45.4	59.38
J285	0.08	0.01	0.04	311.35	297.79	307.62	64.19	44.9	58.89
J287	0.05	0	0.03	311.36	297.79	307.63	72.83	53.53	67.52
J297	0	0	0	311.35	297.79	307.62	75.62	56.34	70.32
J299	0	0	0	311.35	297.79	307.63	75.42	56.14	70.12
J538	0.64	0.05	0.32	311.36	297.79	307.62	68.59	49.29	63.28
J672	1.61	0.12	0.8	311.35	297.73	307.61	74.49	55.14	69.17
J674	3.2	0.24	1.59	311.35	297.66	307.58	71.06	51.61	65.71
J874	4.18	0.31	2.07	311.35	297.66	307.58	68.13	48.68	62.78
J876	0.24	0.02	0.12	311.36	297.79	307.62	71.61	52.32	66.31
J952	0.21	0.02	0.11	311.36	297.79	307.62	70.32	51.03	65.01
J1276	0.23	0.02	0.11	311.36	297.79	307.62	70.77	51.49	65.47
J1290	0.16	0.01	0.08	311.36	297.79	307.62	74.4	55.11	69.09
J1292	0.22	0.02	0.11	311.36	297.79	307.62	74.12	54.83	68.81
J1316	8.16	0.6	4.04	311.35	297.76	307.62	63.05	43.73	57.74
J1318	0.33	0.02	0.17	311.36	297.79	307.62	70.46	51.17	65.16
J1320	0.29	0.02	0.15	311.36	297.79	307.62	72.41	53.12	67.1
J1334	0.1	0.01	0.05	311.36	297.79	307.62	75.08	55.79	69.78
J1336	0.07	0	0.03	311.36	297.79	307.62	75.91	56.62	70.6
J1338	0.31	0.02	0.15	311.36	297.79	307.62	74.12	54.83	68.81
J1340	0.24	0.02	0.12	311.36	297.79	307.62	73.25	53.96	67.94
J1342	2.14	0.16	1.06	311.34	297.81	307.63	71.68	52.44	66.4
J1344	0.88	0.06	0.43	311.36	297.79	307.62	75.11	55.82	69.8
J289	0.58	0.04	0.29	311.37	297.79	307.63	76.23	56.94	70.92
J291	0.44	0.03	0.22	311.37	297.79	307.63	75.22	55.93	69.91
J293	0.36	0.03	0.18	311.37	297.79	307.63	71.98	52.69	66.67
J295	0.41	0.03	0.2	311.37	297.8	307.63	78.14	58.86	72.83
J326	0	0	0	311.36	297.8	307.63	74.86	55.58	69.56
J328	0	0	0	311.37	297.81	307.63	75.94	56.67	70.63
J408	0	0	0	311.37	297.82	307.64	74.88	55.62	69.57
J490	1.31	0.1	0.65	311.37	297.8	307.63	72.76	53.46	67.44
J574	1.16	0.09	0.57	311.37	297.79	307.63	74.71	55.42	69.4
J594	1.61	0.12	0.8	311.37	297.81	307.63	73.84	54.56	68.53
J670	0.28	0.02	0.14	311.37	297.8	307.63	77.3	58.01	71.99
J1284	0.47	0.03	0.23	311.37	297.79	307.63	74.44	55.15	69.13
J1286	0.5	0.04	0.25	311.36	297.79	307.63	73.5	54.21	68.19
J1288	0.14	0.01	0.07	311.37	297.79	307.63	74.51	55.22	69.2
J1294	0	0	0	311.37	297.82	307.64	75.65	56.39	70.34
J1300	0.58	0.04	0.29	311.37	297.79	307.63	72.61	53.31	67.29
J1302	0.3	0.02	0.15	311.37	297.79	307.63	72.52	53.22	67.21
J1304	0.14	0.01	0.07	311.37	297.79	307.63	73.73	54.43	68.42
J1306	0.72	0.05	0.35	311.37	297.79	307.63	73.62	54.32	68.31
J1308	0.61	0.04	0.3	311.37	297.79	307.63	72.95	53.64	67.63
J1312	0.17	0.01	0.08	311.37	297.79	307.63	72.43	53.13	67.12
J1314	0.39	0.03	0.19	311.36	297.79	307.63	72.73	53.43	67.42
J1322	0.61	0.04	0.3	311.37	297.79	307.63	73.21	53.91	67.9

Hydraulic Model Results: Maximum Day Demand - Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
ANNEX_12332	8.61	0.01	3.66	0.07	0	0.03	0.02	0	0
P4796	5.92	0.07	3.89	0.08	0	0.06	0.04	0	0.02
P4798	5.48	0	1.49	0.08	0	0.02	0.03	0	0.01
P4800	5.42	0	2.41	0.08	0	0.03	0.03	0	0.01
P4802	5.09	0	2.14	0.07	0	0.03	0.03	0	0.01
P4804	0.98	0	0.4	0.03	0	0.01	0.01	0	0
P4806	0.89	0	0.35	0.03	0	0.01	0.01	0	0
P4808	3.9	0	1.62	0.06	0	0.02	0.02	0	0
P4810	5.5	0.19	2.99	0.08	0	0.04	0.03	0	0.01
P4812	5.25	0.28	2.52	0.07	0	0.04	0.03	0	0.01
P4814	4.81	0.03	3.03	0.07	0	0.04	0.03	0	0.01
P4816	7.74	0	3.42	0.11	0	0.05	0.07	0	0.02
P4850	0.03	0	0.02	0	0	0	0	0	0
P4852	0.77	0	0.3	0.02	0	0.01	0.01	0	0
P4854	0.46	0	0.17	0.01	0	0.01	0	0	0
P4856	0.04	0	0.02	0	0	0	0	0	0
P4858	2.78	0.01	1.1	0.04	0	0.02	0.01	0	0
P4860	2.52	0.04	0.97	0.04	0	0.01	0.01	0	0
P4862	0.09	0	0.03	0	0	0	0	0	0
P4864	2.39	0	0.9	0.03	0	0.01	0.01	0	0
P4866	4.92	0.34	2.43	0.28	0.02	0.14	1.16	0.01	0.36
P4868	3.31	0.22	1.63	0.19	0.01	0.09	0.55	0	0.17
P4870	0.11	0	0.05	0.01	0	0	0	0	0
P4872	4.08	0.29	2.03	0.23	0.02	0.11	0.82	0.01	0.26
P4918	5.52	0.18	3.01	0.08	0	0.04	0.03	0	0.01
P4946	8.16	0.6	4.04	0.12	0.01	0.06	0.07	0	0.02
P4948	0.39	0	0.15	0.01	0	0	0	0	0
P4950	2.44	0	0.9	0.03	0	0.01	0.01	0	0
P4952	3.05	0	1.23	0.04	0	0.02	0.01	0	0
P4958	5.42	0	2.41	0.08	0	0.03	0.03	0	0.01
P4962	7.82	0.02	3.46	0.11	0	0.05	0.07	0	0.02
P4970	0.96	0	0.39	0.03	0	0.01	0.01	0	0
P4972	0.81	0	0.34	0.03	0	0.01	0.01	0	0
P4974	0.88	0	0.37	0.03	0	0.01	0.01	0	0
P4976	3.42	0.01	1.4	0.05	0	0.02	0.01	0	0
P4978	0.24	0	0.1	0.01	0	0	0	0	0
P4980	0.08	0	0.03	0	0	0	0	0	0
P4982	14.02	0.06	6.02	0.11	0	0.05	0.04	0	0.01
P4984	5.97	0.06	2.58	0.08	0	0.04	0.04	0	0.01
P4792	11.43	0.15	6.67	0.16	0	0.09	0.13	0	0.05
P4794	5.92	0.07	3.89	0.08	0	0.06	0.04	0	0.02
P4820	3.13	0	1.42	0.04	0	0.02	0.01	0	0
P4822	2.4	0.1	1.02	0.03	0	0.01	0.01	0	0
P4824	6.85	0.13	4.14	0.1	0	0.06	0.05	0	0.02
P4826	8.33	0.4	4.52	0.12	0.01	0.06	0.07	0	0.03
P4828	3.94	0.04	2.53	0.06	0	0.04	0.02	0	0.01
P4830	2.89	0.01	1.89	0.04	0	0.03	0.01	0	0.01
P4832	9.94	0.52	5.32	0.14	0.01	0.08	0.1	0	0.04
P4838	3.73	0.02	2.22	0.05	0	0.03	0.02	0	0.01
P4840	0.8	0.05	0.43	0.03	0	0.01	0.01	0	0
P4842	1.4	0.1	0.73	0.04	0	0.02	0.02	0	0.01
P4844	1.27	0.09	0.66	0.04	0	0.02	0.02	0	0.01
P4846	5.39	0.22	2.57	0.08	0	0.04	0.03	0	0.01
P4848	5.11	0.2	2.44	0.07	0	0.03	0.03	0	0.01
P4874	11.43	0.15	6.67	0.16	0	0.09	0.13	0	0.05
P4912	4.04	0.04	2.4	0.06	0	0.03	0.02	0	0.01
P4922	2.5	0.12	1.22	0.04	0	0.02	0.01	0	0
P4924	0.54	0.03	0.3	0.03	0	0.02	0.02	0	0.01
P4926	2.04	0	0.92	0.03	0	0.01	0.01	0	0
P4928	3.73	0.21	2.07	0.05	0	0.03	0.02	0	0.01
P4930	1.13	0.01	0.5	0.04	0	0.02	0.02	0	0

Hydraulic Model Results: Maximum Day Demand - Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
P4932	0.82	0	0.52	0.03	0	0.02	0.01	0	0
P4934	0.29	0	0.09	0.01	0	0	0	0	0
P4936	0.38	0	0.18	0.01	0	0.01	0	0	0
P4944	2.9	0.08	0.83	0.04	0	0.01	0.01	0	0
P4954	0.33	0.01	0.16	0.01	0	0.01	0	0	0

Hydraulic Model Results: Peak Hour Demand - Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range

	DEMAND			HEAD			PRESSURE		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m)	Min.Value (m)	Average (m)	Max.Value (psi)	Min.Value (psi)	Average (psi)
B18	0	0	0	311.24	296.83	307.52	74.98	54.49	69.69
B19	0	0	0	311.24	296.82	307.52	63.75	43.24	58.46
J273	0	0	0	311.25	296.82	307.52	75.97	55.46	70.67
J275	0.1	0.01	0.05	311.25	296.82	307.52	75.4	54.88	70.1
J277	0.16	0.01	0.08	311.25	296.82	307.52	74.53	54.02	69.23
J279	0.1	0.01	0.05	311.25	296.82	307.52	73.69	53.18	68.39
J281	1.43	0.11	0.71	311.25	296.82	307.52	73.11	52.6	67.81
J283	0.12	0.01	0.06	311.24	296.81	307.52	64.53	44.01	59.23
J285	0.14	0.01	0.07	311.24	296.82	307.52	64.03	43.53	58.74
J287	0.08	0.01	0.04	311.25	296.82	307.52	72.68	52.16	67.37
J297	0	0	0	311.24	296.82	307.52	75.46	54.96	70.17
J299	0	0	0	311.24	296.83	307.52	75.26	54.77	69.97
J538	0.96	0.07	0.47	311.25	296.81	307.52	68.43	47.91	63.13
J672	2.41	0.18	1.19	311.24	296.7	307.48	74.33	53.67	69
J674	4.81	0.35	2.39	311.23	296.56	307.44	70.9	50.04	65.5
J874	6.26	0.46	3.1	311.23	296.56	307.44	67.97	47.11	62.57
J876	0.36	0.03	0.18	311.25	296.82	307.52	71.46	50.94	66.16
J952	0.32	0.02	0.16	311.25	296.82	307.52	70.17	49.65	64.87
J1276	0.34	0.03	0.17	311.25	296.82	307.52	70.62	50.11	65.32
J1290	0.24	0.02	0.12	311.25	296.82	307.52	74.25	53.73	68.95
J1292	0.33	0.02	0.17	311.25	296.82	307.52	73.96	53.45	68.66
J1316	12.24	0.9	6.07	311.24	296.77	307.5	62.89	42.32	57.58
J1318	0.5	0.04	0.25	311.25	296.82	307.52	70.31	49.79	65.01
J1320	0.44	0.03	0.22	311.25	296.82	307.52	72.26	51.74	66.96
J1334	0.15	0.01	0.08	311.25	296.82	307.52	74.93	54.41	69.63
J1336	0.1	0.01	0.05	311.25	296.82	307.52	75.75	55.24	70.46
J1338	0.46	0.03	0.23	311.25	296.82	307.52	73.96	53.45	68.66
J1340	0.36	0.03	0.18	311.25	296.82	307.52	73.09	52.58	67.8
J1342	3.21	0.24	1.59	311.24	296.84	307.53	71.53	51.07	66.26
J1344	1.33	0.1	0.66	311.25	296.82	307.52	74.95	54.44	69.66
J289	0.87	0.06	0.43	311.26	296.83	307.53	76.08	55.58	70.78
J291	0.66	0.05	0.33	311.26	296.83	307.53	75.07	54.56	69.77
J293	0.54	0.04	0.27	311.26	296.84	307.53	71.83	51.33	66.53
J295	0.62	0.05	0.31	311.26	296.84	307.53	77.99	57.5	72.69
J326	0	0	0	311.26	296.84	307.53	74.71	54.22	69.41
J328	0	0	0	311.26	296.86	307.54	75.79	55.32	70.49
J408	0	0	0	311.27	296.89	307.55	74.73	54.28	69.44
J490	1.98	0.14	0.98	311.26	296.85	307.53	72.61	52.11	67.3
J574	1.73	0.13	0.86	311.26	296.83	307.53	74.56	54.05	69.26
J594	2.41	0.18	1.19	311.27	296.86	307.54	73.69	53.21	68.39
J670	0.41	0.03	0.2	311.26	296.84	307.53	77.15	56.65	71.85
J1284	0.7	0.05	0.35	311.26	296.83	307.53	74.29	53.78	68.99
J1286	0.74	0.05	0.37	311.26	296.83	307.53	73.35	52.84	68.05
J1288	0.21	0.02	0.1	311.26	296.83	307.53	74.36	53.85	69.06
J1294	0	0	0	311.27	296.88	307.55	75.5	55.05	70.21
J1300	0.87	0.06	0.43	311.26	296.83	307.53	72.46	51.94	67.15
J1302	0.45	0.03	0.22	311.26	296.83	307.53	72.37	51.86	67.07
J1304	0.21	0.02	0.1	311.26	296.83	307.53	73.58	53.07	68.27
J1306	1.07	0.08	0.53	311.26	296.83	307.53	73.47	52.96	68.17
J1308	0.91	0.07	0.45	311.26	296.83	307.53	72.8	52.28	67.49
J1312	0.25	0.02	0.12	311.26	296.83	307.53	72.28	51.77	66.98
J1314	0.58	0.04	0.29	311.26	296.83	307.53	72.58	52.06	67.27
J1322	0.91	0.07	0.45	311.26	296.83	307.53	73.06	52.54	67.75

Hydraulic Model Results: Peak Hour Demand - Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

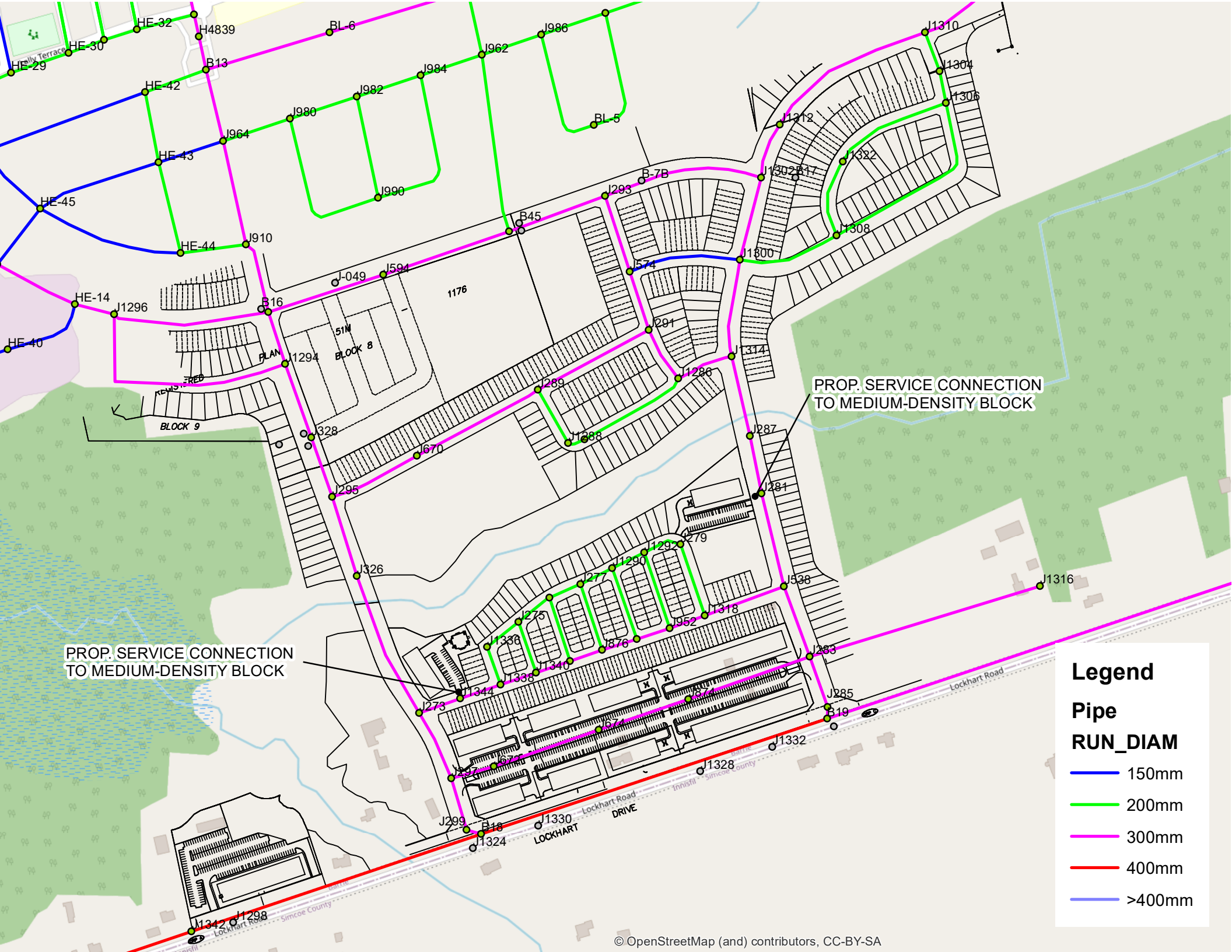
	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
ANNEX_12332	9.52	0.01	4.09	0.08	0	0.03	0.02	0	0.01
P4796	8.89	0.03	5.35	0.13	0	0.08	0.08	0	0.04
P4798	5.86	0.36	1.95	0.08	0.01	0.03	0.04	0	0.01
P4800	6.59	0	2.76	0.09	0	0.04	0.05	0	0.01
P4802	6.34	0.01	2.79	0.09	0	0.04	0.05	0	0.01
P4804	1.18	0	0.51	0.04	0	0.02	0.02	0	0
P4806	1.02	0	0.42	0.03	0	0.01	0.01	0	0
P4808	4.79	0.05	2.08	0.07	0	0.03	0.03	0	0.01
P4810	7.56	0.03	4.65	0.11	0	0.07	0.06	0	0.03
P4812	6.19	0.01	3.94	0.09	0	0.06	0.04	0	0.02
P4814	7.22	0.18	4.28	0.1	0	0.06	0.06	0	0.02
P4816	11.4	0.3	5.07	0.16	0	0.07	0.13	0	0.04
P4850	0.05	0	0.02	0	0	0	0	0	0
P4852	0.85	0	0.34	0.03	0	0.01	0.01	0	0
P4854	0.49	0	0.19	0.02	0	0.01	0	0	0
P4856	0.07	0	0.04	0	0	0	0	0	0
P4858	3.19	0.01	1.31	0.05	0	0.02	0.01	0	0
P4860	2.77	0	1.11	0.04	0	0.02	0.01	0	0
P4862	0.05	0	0.02	0	0	0	0	0	0
P4864	2.48	0	0.96	0.04	0	0.01	0.01	0	0
P4866	7.35	0.5	3.63	0.42	0.03	0.21	2.43	0.02	0.77
P4868	4.94	0.32	2.44	0.28	0.02	0.14	1.16	0.01	0.37
P4870	0.12	0	0.05	0.01	0	0	0	0	0
P4872	6.14	0.45	3.05	0.35	0.03	0.17	1.74	0.01	0.55
P4918	7.64	0.04	4.68	0.11	0	0.07	0.06	0	0.03
P4946	12.24	0.9	6.07	0.17	0.01	0.09	0.15	0	0.05
P4948	0.39	0	0.15	0.01	0	0	0	0	0
P4950	2.37	0.03	0.89	0.03	0	0.01	0.01	0	0
P4952	3.59	0.01	1.51	0.05	0	0.02	0.02	0	0
P4958	6.59	0	2.76	0.09	0	0.04	0.05	0	0.01
P4962	11.54	0.27	5.14	0.16	0	0.07	0.14	0	0.04
P4970	1.13	0	0.47	0.04	0	0.02	0.02	0	0
P4972	0.99	0	0.43	0.03	0	0.01	0.01	0	0
P4974	1.09	0.01	0.48	0.03	0	0.02	0.01	0	0
P4976	4.13	0.01	1.77	0.06	0	0.03	0.02	0	0.01
P4978	0.3	0	0.13	0.01	0	0	0	0	0
P4980	0.1	0	0.04	0	0	0	0	0	0
P4982	16.11	0.26	6.77	0.13	0	0.05	0.05	0	0.01
P4984	7.67	0.03	3.44	0.11	0	0.05	0.06	0	0.02
P4792	15.55	0.6	8.69	0.22	0.01	0.12	0.24	0	0.09
P4794	8.89	0.03	5.35	0.13	0	0.08	0.08	0	0.04
P4820	3.31	0	1.49	0.05	0	0.02	0.01	0	0
P4822	2.78	0.01	1.75	0.04	0	0.02	0.01	0	0
P4824	10.01	0.39	5.62	0.14	0.01	0.08	0.11	0	0.04
P4826	10.17	0.58	5.44	0.14	0.01	0.08	0.11	0	0.04
P4828	6.37	0.09	3.71	0.09	0	0.05	0.05	0	0.02
P4830	5.03	0.12	2.96	0.07	0	0.04	0.03	0	0.01
P4832	12.58	0.75	6.63	0.18	0.01	0.09	0.16	0	0.05
P4838	5.16	0.22	2.92	0.07	0	0.04	0.03	0	0.01
P4840	0.86	0.06	0.46	0.03	0	0.01	0.01	0	0
P4842	1.77	0.13	0.91	0.06	0	0.03	0.03	0	0.01
P4844	1.56	0.11	0.81	0.05	0	0.03	0.03	0	0.01
P4846	6.36	0.16	3.03	0.09	0	0.04	0.05	0	0.01
P4848	5.95	0.13	2.83	0.08	0	0.04	0.04	0	0.01
P4874	15.55	0.6	8.69	0.22	0.01	0.12	0.24	0	0.09
P4912	5.28	0.22	3.01	0.07	0	0.04	0.03	0	0.01
P4922	4.12	0.01	2.47	0.06	0	0.03	0.02	0	0.01
P4924	0.67	0.04	0.35	0.04	0	0.02	0.03	0	0.01
P4926	1.43	0	0.37	0.02	0	0.01	0	0	0
P4928	4.54	0.23	2.39	0.06	0	0.03	0.02	0	0.01
P4930	1.12	0	0.5	0.04	0	0.02	0.02	0	0

Hydraulic Model Results: Peak Hour Demand - Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range

	FLOW			VELOCITY			HEADLOSS		
ID	Max.Value (L/s)	Min.Value (L/s)	Average (L/s)	Max.Value (m/s)	Min.Value (m/s)	Average (m/s)	Max.Value (m/km)	Min.Value (m/km)	Average (m/km)
P4932	1.77	0.09	1	0.06	0	0.03	0.04	0	0.01
P4934	0.36	0	0.18	0.01	0	0.01	0	0	0
P4936	0.44	0	0.2	0.01	0	0.01	0	0	0
P4944	3.38	0	1.96	0.05	0	0.03	0.01	0	0.01
P4954	0.47	0.03	0.29	0.01	0	0.01	0	0	0


PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
PROP. SERVICE CONNECTION
TO MEDIUM-DENSITY BLOCK
BLOCK 8
BLOCK 9
LOCKHART
DRIVE
Lockhart Road
Innisfil - Simcoe County
Legend
Pipe
RUN_DIAM
150mm
200mm
300mm
400mm
>400mm
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Hydraulic Model Results: Fire Flow Simulation - Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

MDD + FF Scenario

ID	Static Demand (L/s)	Static Pressure (psi)	Static Head (m)	Fire-Flow Demand (L/s)	Residual Pressure (psi)	Hydrant Available Flow (L/s)	Hydrant Pressure at Available Flow (psi)	Critical Pipe ID at Available Flow	Critical Pipe Velocity at Available Flow (m/s)
J1276	0.23	61.17	304.6	250	47.09	470.43	20	P4860	3.2
J1290	0.16	64.79	304.6	200	52.62	426.28	20.29	P4806	5
J1292	0.22	64.51	304.6	200	51.65	383.62	25.22	P4852	5
J1316	8.16	53.42	304.57	200	33.7	280.2	20	P4946	3.96
J1318	0.33	60.85	304.6	250	47.29	479.55	20	P4950	4.11
J1320	0.29	62.8	304.6	250	48.74	481.35	20	P4976	3.24
J1334	0.1	65.47	304.6	233	50.02	436.1	20	P4970	5
J1336	0.07	66.3	304.6	200	52.33	290.68	39.8	P4974	5
J1338	0.31	64.51	304.6	250	50.95	503.88	20	P4802	4.32
J1340	0.24	63.64	304.6	250	49.74	490.22	20	P4808	3.52
J1342	2.14	62.1	304.6	250	48.25	481.38	20	P4982	2.82
J1344	0.88	65.5	304.6	250	52.59	519.22	21.16	P4984	5
J275	0.07	65.94	304.6	233	50.25	434.45	20	P4804	4.92
J277	0.1	65.08	304.6	233	49.63	434.1	20	P4970	4.97
J279	0.07	64.24	304.6	200	48.38	292.52	33.63	P4854	5
J281	0.96	63.66	304.6	217	53.84	527.83	20	P4810	3.81
J283	0.08	55.08	304.59	100	52.11	471.56	20	P4814	2.95
J285	0.09	54.59	304.6	283	39.52	463.54	20	P4962	3.6
J287	0.05	63.22	304.6	217	53.63	531.52	20	P4918	4.39
J538	0.64	58.98	304.6	250	47.07	507.8	20	P4812	2.8
J672	1.61	64.89	304.6	283	48.44	490.59	23.23	P4866	5
J674	3.21	61.46	304.59	283	43.07	458.8	20	P4868	3.55
J874	4.18	58.53	304.59	300	38.47	443.93	20	P4872	3.65
J876	0.24	62	304.6	250	47.89	475.08	20	P4952	3.03
J952	0.21	60.71	304.6	250	46.79	470.7	20	P4864	3.45

Water Quality Model Results: Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
B18	124.96	229:10	0	00:00	60.43	124.96
B19	115.29	201:10	0	00:00	67.64	115.29
J273	33.09	178:10	0	00:00	11.91	33.09
J275	33.68	225:50	0	00:00	17.15	33.68
J277	44.8	96:40	0	00:00	24.31	44.8
J279	48.44	112:20	0	00:00	37.47	48.44
J281	27.51	201:20	0	00:00	21.42	27.51
J283	93.3	224:00	0	00:00	45.28	93.3
J285	119.5	201:10	0	00:00	67.51	119.5
J287	29.2	224:20	0	00:00	21.12	29.2
J297	107.01	231:00	0	00:00	31.58	107.01
J299	125.02	206:30	0	00:00	56.95	125.02
J538	43.36	127:20	0	00:00	22.81	43.36
J672	105.58	231:10	0	00:00	31.2	105.58
J674	105.99	231:30	0	00:00	30.85	105.99
J874	93.42	224:30	0	00:00	44.78	93.42
J876	37.77	225:10	0	00:00	15.5	37.77
J952	36.36	228:40	0	00:00	18.61	36.36
J1276	39.42	226:30	0	00:00	16.73	39.42
J1290	41.03	230:50	0	00:00	27.65	41.03
J1292	43.95	232:30	0	00:00	31.87	43.95
J1316	92.15	129:40	0	00:00	45.74	92.15
J1318	43.56	231:20	0	00:00	24.68	43.56
J1320	37.14	223:40	0	00:00	14.53	37.14
J1334	37.66	183:50	0	00:00	20.44	37.66
J1336	37.04	223:30	0	00:00	14.4	37.04
J1338	33.31	221:00	0	00:00	12.99	33.31
J1340	34.32	222:10	0	00:00	13.64	34.32
J1342	121.39	233:20	0	00:00	67.89	121.39
J1344	33.37	219:50	0	00:00	12.39	33.37
J289	35.71	180:30	0	00:00	13.98	35.71
J291	28.51	220:20	0	00:00	15.97	28.51
J293	28.39	217:10	0	00:00	13.18	28.39
J295	36.24	238:40	0	00:00	10.41	36.24
J326	44.45	239:10	0	00:00	10.88	44.45
J328	35.45	238:30	0	00:00	10.2	35.45
J408	23.17	105:40	0	00:00	9.79	23.17
J490	29.79	238:50	0	00:00	12.38	29.79
J574	28.93	219:20	0	00:00	13.91	28.93
J594	33.72	215:10	0	00:00	10.59	33.72

Water Quality Model Results: Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Junction Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
J670	33	219:00	0	00:00	11.88	33
J1284	40.06	200:30	0	00:00	15.39	40.06
J1286	27.51	221:10	0	00:00	16.69	27.51
J1288	38.62	199:20	0	00:00	15.09	38.62
J1294	43.12	238:10	0	00:00	9.97	43.12
J1300	35.01	197:40	0	00:00	23.14	35.01
J1302	34.77	196:30	0	00:00	22.13	34.77
J1304	50.8	234:30	0	00:00	28.6	50.8
J1306	50.84	234:50	0	00:00	28.93	50.84
J1308	78.21	221:00	0	00:00	41.39	78.21
J1312	52.35	231:10	0	00:00	32.18	52.35
J1314	27.65	196:10	0	00:00	20.55	27.65
J1322	55.82	232:40	0	00:00	33.83	55.82

Water Quality Model Results: Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range - Water Age

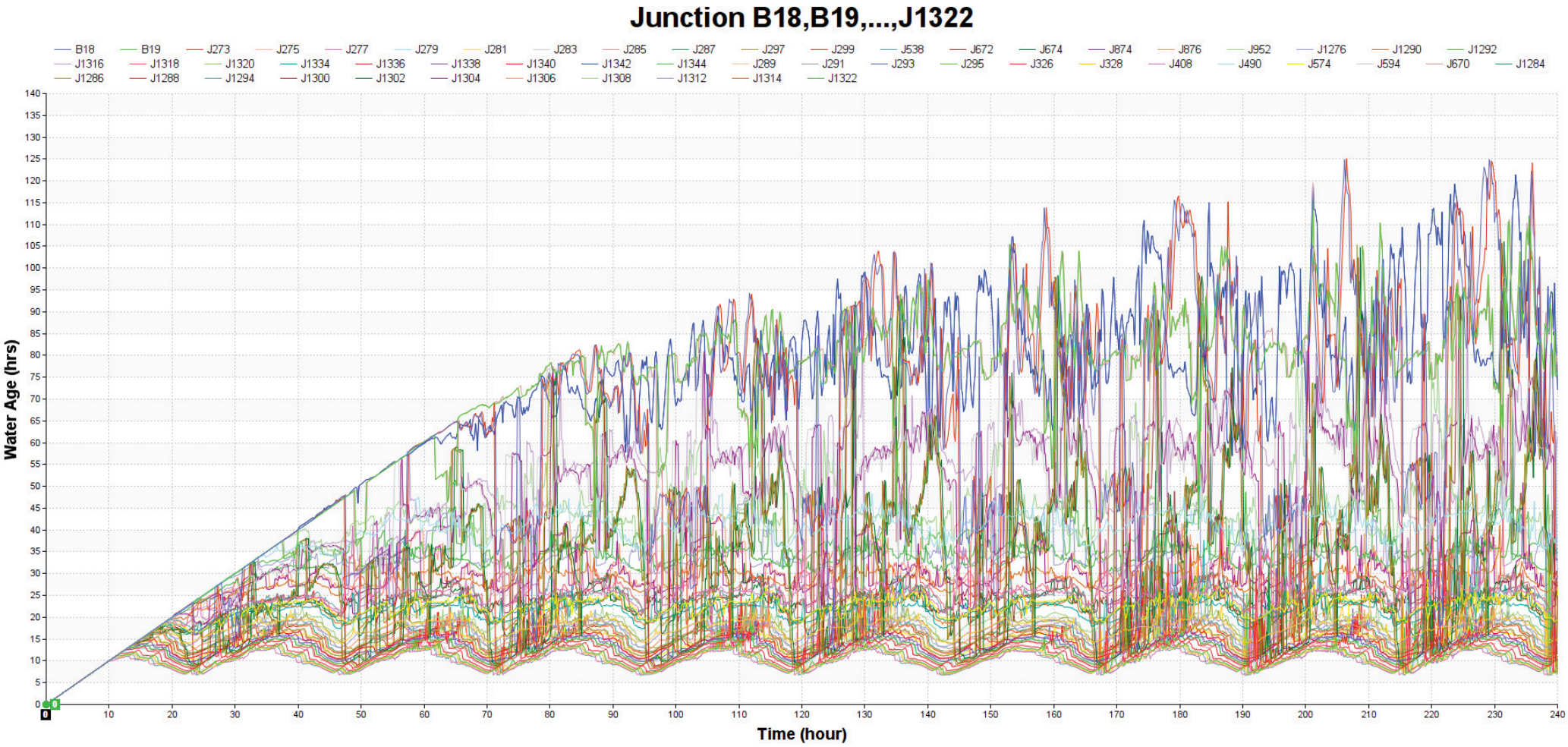
ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
ANNEX_12332	106.54	231:30	0	00:00	68.66	106.54
P4796	19.35	177:40	0	00:00	11.43	19.35
P4798	44.4	224:00	0	00:00	12.75	44.4
P4800	121.21	230:00	0	00:00	53.84	121.21
P4802	22.93	220:00	0	00:00	12.68	22.93
P4804	24.35	226:00	0	00:00	17.82	24.35
P4806	30.81	229:20	0	00:00	24.63	30.81
P4808	22.79	221:20	0	00:00	13.3	22.79
P4810	26.72	186:10	0	00:00	21.27	26.72
P4812	26.95	186:30	0	00:00	21.75	26.95
P4814	30.36	224:00	0	00:00	22.99	30.36
P4816	111.16	235:40	0	00:00	66.87	111.16
P4850	37.29	209:40	0	00:00	32.85	37.29
P4852	33.79	231:00	0	00:00	28.34	33.79
P4854	40.13	132:40	0	00:00	34.2	40.13
P4856	31.41	201:40	0	00:00	27.57	31.41
P4858	24.53	225:20	0	00:00	16.11	24.53
P4860	24.42	226:40	0	00:00	17.62	24.42
P4862	33.79	224:20	0	00:00	29.5	33.79
P4864	26.67	97:30	0	00:00	20.22	26.67
P4866	104.76	231:10	0	00:00	31.38	104.76
P4868	100.75	231:30	0	00:00	30.99	100.75
P4870	61.77	240:00	0	00:00	44.89	61.77
P4872	79.6	224:10	0	00:00	44.91	79.6
P4918	26.23	185:40	0	00:00	20.87	26.23
P4946	74.05	236:00	0	00:00	44.97	74.05
P4948	63.7	230:50	0	00:00	48.86	63.7
P4950	38.16	132:50	0	00:00	30.52	38.16
P4952	24.54	224:00	0	00:00	15.03	24.54
P4958	123.63	229:30	0	00:00	57.83	123.63
P4962	118.26	201:10	0	00:00	67.55	118.26
P4970	27.7	227:30	0	00:00	21	27.7
P4972	21.88	224:30	0	00:00	15.25	21.88
P4974	19.78	221:40	0	00:00	13.66	19.78
P4976	23.43	222:20	0	00:00	14.05	23.43
P4978	20.94	181:40	0	00:00	17.06	20.94
P4980	30.64	228:40	0	00:00	26.92	30.64
P4982	105.82	226:00	0	00:00	66.7	105.82
P4984	23.77	219:00	0	00:00	12.16	23.77
P4792	24.16	238:30	0	00:00	10.31	24.16

Water Quality Model Results: Ultimate Scenario

Project Title: Hewitt's South
Last Edited: 2024-11-04
Municipality City of Barrie

Pipe Range - Water Age

ID	Max.Value (hrs)	Max.Time (hrs.)	Min.Value (hrs)	Min.Time (hrs.)	Average (hrs)	Difference (hrs)
P4794	21.75	177:00	0	00:00	10.64	21.75
P4820	19.8	183:40	0	00:00	16.01	19.8
P4822	19.15	178:40	0	00:00	14.36	19.15
P4824	18.52	177:20	0	00:00	12.77	18.52
P4826	16.5	176:30	0	00:00	11.03	16.5
P4828	17.19	237:40	0	00:00	10.13	17.19
P4830	18.53	178:00	0	00:00	13.52	18.53
P4832	15.79	174:10	0	00:00	10.19	15.79
P4838	21.75	184:30	0	00:00	16.08	21.75
P4840	21.7	185:30	0	00:00	17.2	21.7
P4842	21.02	180:50	0	00:00	14.54	21.02
P4844	27.29	181:50	0	00:00	15.24	27.29
P4846	16.78	177:40	0	00:00	11.17	16.78
P4848	17.67	180:00	0	00:00	12.92	17.67
P4874	23.69	176:10	0	00:00	10.07	23.69
P4912	22.38	185:10	0	00:00	16.95	22.38
P4922	30.1	137:10	0	00:00	23.14	30.1
P4924	19.16	181:10	0	00:00	15.45	19.16
P4926	47.24	111:30	0	00:00	33.09	47.24
P4928	18.18	180:10	0	00:00	14.46	18.18
P4930	51.02	221:40	0	00:00	34.47	51.02
P4932	43.19	107:00	0	00:00	28.76	43.19
P4934	40.08	235:00	0	00:00	33.63	40.08
P4936	72.57	214:30	0	00:00	51.03	72.57
P4944	29.89	138:10	0	00:00	23.85	29.89
P4954	39.89	107:50	0	00:00	31.04	39.89


Junction B18,B19,...,J1322
B18 B19 J273 J275 J277 J279 J281 J283 J285 J287 J297 J299 J538 J672 J674 J874 J876 J952 J1276 J1290 J1292
J1316 J1318 J1320 J1334 J1336 J1338 J1340 J1342 J1344 J289 J291 J293 J295 J326 J328 J408 J490 J574 J594 J670 J1284
J1286 J1288 J1294 J1300 J1302 J1304 J1306 J1308 J1312 J1314 J1322
Water Age (hrs)
Time (hour)

Pipe ANNEX_12332,P4796,...,P4954