

Functional Servicing Report

SMGCC Short-Term Rental Units

Project Location:

769 Queen Street East
St. Mary's, ON

Prepared For:

Staffen Family Holdings Inc.
St. Marys, ON

Prepared by:

GRIT Engineering Inc.
169 Huron Street
Stratford, ON N5A 5S9

September 22, 2022

GRIT File No: GE22-0098-1



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- Appendix B – Sanitary Flow Calculations & Capacity Email from the Town of St. Marys
- Appendix C – Water Demand Calculations & Hydrant Flow Test
- Appendix D – St. Marys’ Stormwater Management Policy Calculation



1.0 Introduction

GRIT Engineering Inc. (GRIT) was retained by Staffen Family Holdings Inc. to complete a Functional Servicing Report (FSR) at 769 Queen Street in St. Mary's, Ontario as shown on Figure 1 in Appendix A.

The subject site is zoned as OS (Open space zone), generally bounded by Queen Street East to the south, existing industrial zoning (I) to the west, existing flood plan zone – open space zone (FP(OS)) to the north and open space zone (OS) to the east. Figure 1 provides an aerial image, illustrating the site location and surrounding characteristics.

A Conceptual Servicing/Grading Layout has been prepared by Grit Engineering Inc. The Conceptual Servicing/Grading Layout involves the short-term rental development of a residential development comprising of two (2), 2 storey buildings, 12 units in Building B and 9 units in Building A for a total of 21 units, with an asphalt parking area and vegetation area surrounding. The proposed Conceptual Servicing/Grading Layout is included in Appendix A.

This FSR recommends grading, servicing, and stormwater management strategies for the Site. This report will discuss the available town infrastructure and how the proposed development can be serviced.



TOWN OF
St. Marys

N

SITE

QUEEN STREET EAST

file: j:\project\work\2208-1\civil4-drawing7-working\drawing\sheet\site\22-08-1-civ-200.dwg by: carlis schaefer 2022-08-17

GRIT
ENGINEERING INC.

169 HURON STREET
STRATFORD, ON
N5A 5S9
www.gritengineering.ca

Legend

Project:
769 Queen Street East, St. Marys
New Residential Development

Figure Title:
SITE LOCATION PLAN

Figure No:

2.0 Sanitary Servicing

2.1 Sanitary Servicing

The sanitary design flow requirements are based on the Town of St. Marys' *Engineering Design Guidelines and Supplemental Specifications for Municipal Services* (May 2017) (EDGSSMS) and are 350 litres per capita per day for the residential flow and 0.20 litres per second per hectare for the infiltration requirement. A population of 3.3 people per unit was used with the assumption that each unit will have a minimum of one person per room. This results in a total peak flow of 1.242 L/s or 107.275 m³/day and a total average flow of 0.296 L/s or 25.569 m³/day. The sanitary flows are summarized in the following table.

Table 2.1: Proposed Sanitary Flows

Sanitary Flows										
Site Area (ha)	Number of Units	People Per Unit	Total Pop.	Per Capita Flows (L/s/c)	Peaking Factor	Infiltration (L/s/ha)	Total Peak Flow (L/s)	Total Peak Flow (m ³ /d)	Total Average Flow (L/s)	Total Average Flow (m ³ /day)
0.39	21	3.30	69	0.004	4.3	0.039	1.242	107.275	0.296	25.569

Based on the Town's As-Recorded drawing 5 of 8 of the Queen Street Reconstruction, dated December 18, 1996, by BM Ross and Associates Ltd. there is an existing 300mm sanitary sewer on the south side of Queen Street. Based on the proposed flows in the table above, it is proposed to service the site with a 150mm service at 2.0%. The exact location and depth will be determined during the detailed design stage. The Town confirmed via email that the existing sanitary sewer and pumping station capacities would be confirmed by the Town when they receive the proposed flows from the site. See Appendix B for the email from the Town and the sanitary servicing design sheet.

3.0 Water Distribution

3.1 Design Approach

The Site's post-development use will be as a short-term residential development. The Site is proposed to be serviced via a 150mm diameter service from the existing 200mm diameter watermain on the south side of Queen Street as shown on the As-Recorded drawing 5 of 8 of the Queen Street Reconstruction, dated December 18, 1996, by BM Ross and Associates Ltd. See sheet C300 in Appendix A for the location and layout of the new water service, and Appendix C for the Water Servicing calculations.

The water distribution requirements and performance criteria for the different demand conditions are based on the Ministry of the Environment, Conservation, and Parks *Design*

Guidelines for Drinking Water Systems (2008) (DGDWS), the Town of St. Marys' *Engineering Design Guidelines and Supplemental Specifications for Municipal Services* (May 2017) (EDGSSMS), and the latest edition of the Ontario Building Code (OBC). The design parameters used are:

- A Residential average daily Domestic Demand of 280 Litres per capita per day (EDGSSMS),
- Minimum water pressures of (EDGSSMS):
 - 140 kPa (20 psi) for Fire-Flow plus Maximum Day Demand,
 - 275 kPa (40 psi) for Maximum Hour Demand,
 - 275 kPa (40 psi) for Average Day Demand, and
 - 550 kPa (80 psi) Maximum residual pressure.
- Peaking Factors of 4.9 and 7.4 for Maximum Day and Maximum Hour respectively (DGDWS),
- Water turnover less than 72 Hours under Average Day Demand for Water Quality (DGDWS), and
- Fire-Flow Demand per OBC A-3.2.5.7.

3.2 Domestic Water Demand

The Domestic Water Demand was calculated based on the Site Plan by Orchard Design Studios Inc. – provided separately. The population of the site was multiplied by the Average Day Demand and the corresponding Peaking Factors and is summarized in the table below.

Table 4.1: Domestic Water Demand

Domestic Water Demand						
	Units	Area (ha)	Population	Average Day (L/s)	Maximum Day (L/s)	Maximum Hour (L/s)
Residential	21	0	70	0.207	1.012	1.529
Commercial	N/A	0	0	0	0	0
Industrial	N/A	0	0	0	0	0
Totals	21	0	70	0.207	1.012	1.529

3.3 Velocity and Water Quality

The system turnover time to address Water Quality was calculated using the 150mm and 50mm water service sizes, the total length of the service from the watermain, and the Average Day Demand. The velocity and turnover calculations are summarized in the table below and demonstrate compliance with the requirements in the DGDWS.

Table 4.2: Velocity & Turnover

Velocity & Turnover Calculations		
Volume (L)	Hours	Days
614.26	0.83	0.03

3.4 Fire-Flow Demand

As the proposed buildings will not have a sprinkler system, the Fire-Flow Demand was calculated per the Ontario Building Code (OBC) Volume 2, Section A-3.2.5.7, Section 3.2.5.7(1), and Section 3 of the EDGSSMS. The Fire-Flow Demand and system response calculation is summarized in the table below and demonstrates compliance with the requirements in the EDGSSMS.

Table 4.3: Fire-Flow Demand

	psi	kPa	USGPM	L/min
Static Pressure	70.00	482.63	0	0
Tested Flow Rate	64.00	441.26	215	814
Tested Flow Rate	55.00	379.21	395	1495
Tested Flow Rate	53.00	365.42	531	2010
Pressure @ Required Flow Rate	29.20	201.35	1,205	4560.74

The OBC states that fire hydrants shall be located within 90 m horizontally of any portion of the building perimeter that is required to face a street. The existing Town hydrants are not within 90m of the site; therefore, a new site hydrant will be required. See sheet C300 in Appendix A for the proposed location of the site hydrant.

4.0 Stormwater Management and Storm Servicing

4.1 Stormwater Management Requirements

The Town of St. Marys' Stormwater Management Policy defines the Stormwater Management criteria by the product of the property size in hectares and the average runoff coefficient of the property and is further defined if the product is less than or equal to 0.65 as:

- The subject property shall require a site plan including grading and drainage patterns. Best Engineering and Management Practices shall be implemented.

4.2 Pre-Development Conditions

Under existing conditions, the property is comprised of grassed and vegetated areas that supports the existing use as a golf course. An Upper Thames River Conservation Authority (UTRCA) Regulated Floodline and an Erosion Hazard Limit for Trout Creek exist to the

east of the development. The site generally drains northeast toward Trout Creek. The area of the subject portion of the site is approximately 0.35 ha.

4.3 Post-Development Conditions

In the proposed condition, the subject site will be comprised of two buildings, asphalt parking and drive aisles, amenity spaces, and the remainder of the site will be comprised of grassed/landscaped areas. The proposed private storm system will discharge to Trout Creek and will not require a private storm sewer connection on Queen Street East.

The proposed ground cover for the site results in a total Runoff Coefficient for the subject portion of the site of 0.55, when multiplied by the Site Area in hectares the product is 0.19. Therefore, in accordance with the St. Marys' SWM policy, best engineering practices shall be implemented. See Appendix D for the SWM Policy calculations.

4.4 Erosion and Sediment Control

Erosion and Sediment Controls (ESC) will be proposed for the site. The proposed measures will include light and heavy-duty sediment control fencing, and silt sacks in the existing and proposed catch basins on-site and in the Right-of-Way (ROW). All ESC will be installed before construction commences and is to be maintained until the construction is complete with final surfaces and vegetation stabilized with mature growth.

5.0 Grading

Utilizing the proposed development layout, lot grading will be designed and will generally meet the following criteria:

- Match existing road grades at the residential driveway access point,
- Match existing boundary grades around the perimeter of the site,
- Ensure the proper pipe cover is provided over the Town of St. Mary's and private sewers,
- Ensure "major" overland flow routes are directed to Trout Creek, and
- Comply with OBC, Accessibility for Ontarians with Disability Act, 2005 (AODA), and the Town of St. Marys' *Engineering Design Guidelines and Supplemental Specifications for Municipal Services* (May 2017) for minimum driveway and lot grading requirements.

A geotechnical investigation for the proposed development is recommended to confirm the pavement structure, the water table elevation, and the foundation loading requirements.

6.0 Utility Servicing

Utility servicing for the Site will be completed during the detailed design stage through further coordination with Festival Hydro (hydro), Enbridge (natural gas). There are existing hydro lines on the north side of Queen Street East. Natural gas and communication services will require extensions to the site from the nearest existing locations. Further coordination with utility companies will be required as part of the detailed design.

7.0 Conclusions

The proposed short-term residential rental development can be serviced by the existing municipal and utility infrastructure that surrounds the subject portion of the site. The design and calculations in Sections 2 through 6 and the appendices of this FSR demonstrate compliance with the Town of St. Marys' design guidelines and establish that there is sufficient capacity to service the proposed development. We trust that this FSR satisfies the Town's requirements. If there are any questions regarding this FSR, please do not hesitate to contact our office.

8.0 Statement of Conditions and Limitations

This document was prepared for *Staffen Family Holdings Inc.* (the Client) and the *Town of St. Marys* and has been prepared in a manner consistent with that level of care and skill ordinarily exercised by other members of the engineering profession currently practicing in the same or similar locality, under the same or similar conditions, subject to the time limits and financial, physical, or other constraints applicable to the Services.

The recommendations and conclusions provided in this document are applicable only to the specific site, development, design objectives, and purposes that are described in the text and are based on the information that was available and provided to GRIT Engineering Inc. at the time this document was prepared. This document is not intended to be exhaustive in scope and it shall be recognized that the passage of time may alter the opinions, recommendations, and conclusions that are contained in this document. The design is limited to the documents reference and any other drawings or documents prepared by GRIT Engineering Inc. provided separately. GRIT Engineering Inc. accepts no responsibility or liability for the accuracy of any information provided by others.

The information, opinions, conclusions, and recommendations expressed in the document, or any portion thereof, are for the sole benefit of the Client. The document may not be used by a third party without the expressed written consent of GRIT Engineering Inc. and the Client. Any third party use of the document without express written consent denies any claims in Contract, Tort, and/or any other cause of action in law against GRIT Engineering Inc. and the Client.

GRIT ENGINEERING_{INC}

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Any referenced benchmarks or other known elevations provided in this document should be verified by a registered surveyor prior to use for any other purposes such as planning, development, layout, and/or construction.

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Yours respectfully,

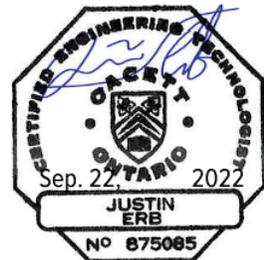
GRIT Engineering Inc.

Curtis Schaerer

Curtis Schaerer, C.Tech.
Civil Designer

Justin Erb

Justin Erb, C.E.T.
Senior Civil Technologist



Montana Wilson, EMBA, M.Eng, P.Eng, PMP
Founder & CEO

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Appendix A

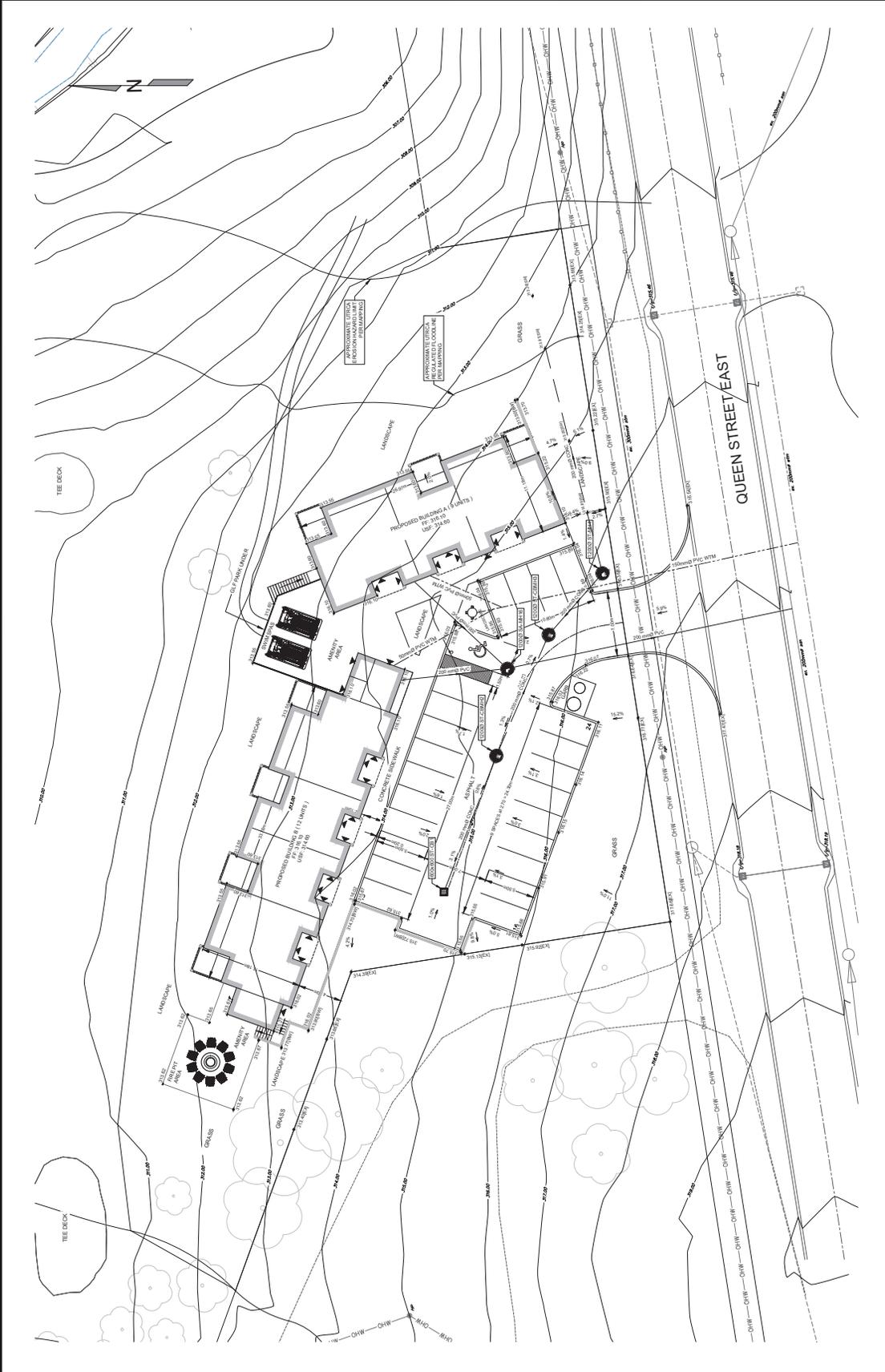
Concept Servicing & Grading Plan

EXISTING FEATURES

- PROPERTY LINE (CONGR)
- EA CONTOURS
- EA STORM SEWER
- EA SANITARY SEWER
- EA WATERMAN
- EA CURB & ASPHALT

PROPOSED FEATURES

- PROPOSED BUILDING
- PROPOSED DOOR
- PROPOSED OVERHEAD DOOR
- PROPOSED ELEVATION
- PROPOSED GRADE
- PROPOSED STORM SEWER
- PROPOSED WATERMAN
- PROPOSED SANITARY SEWER
- PROPOSED CURB & ASPHALT



KEY PLAN

CITY OF SAINT MARYS

QUEEN STREET EAST
CAN STREET

SITE LOCATION

CONTRACTOR NOTES:
BENCHMARK IS DESCRIBED AS:
ELEVATION: 313.86
BENCHMARK (SITE)
BENCHMARK IS DESCRIBED AS:
ELEVATION: 311.63

No.	ISSUED DESCRIPTION	DATE
1	ISSUED FOR REVIEW	2022-08-17
2	ISSUED FOR REVIEW	
3	ISSUED FOR REVIEW	
4	ISSUED FOR REVIEW	
5	ISSUED FOR REVIEW	

GRIT ENGINEERING

PRELIMINARY

SMGCC SHORT-TERM RENTAL UNITS

STAFFEN FAMILY HOLDINGS INC.

PROJECT INFORMATION: 180 QUEEN STREET EAST ST. MARYS, ONTARIO

CURRY INFORMATION: 180 QUEEN STREET EAST ST. MARYS, ONTARIO

DRAWING NAME: **SITE GRADING & SERVICING SKETCH**

PROJECT NO: **GE22-098-2**

SCALE: 1:200 METRIC

DRAWING NO: **C300**

SHEET SET NO: 1 OF 1

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Appendix B

Sanitary Servicing Design Sheet

**769 Queen Street
SANITARY SEWER DESIGN SHEET**

St. Mary's, Ontario

DESIGN PARAMETERS
 RESIDENTIAL HORN PEAKING FACTOR
 1 = 0.013
 V_{max} = 3.0 m/sec (peak flow)
 V_{min} = 0.8 m/sec (peak low)
 INFILTRATION ALLOWANCE = 0.12 L/s/ha

0.004 l/s/cap (350 l/cap)
 0.89 l/s/ha
 1.78 l/s/ha
 0.00 l/s/ha
 0.20 l/s/ha
 3.20 l/s/cap/ha

AVERAGE RESIDENTIAL RATE =
 INDUSTRIAL RATE =
 COMMERCIAL RATE =
 INSTITUTIONAL RATE =
 AVERAGE INFILTRATION RATE =
 AVERAGE PEOPLE PER UNIT =

SHEET NO. 1 OF 1
 JOB No. GE22-0098-1
 CALCULATED BY: Curtis Schaefer
 CHECKED BY: Nick Petriccioli/Justin Erb
 DATE: September 19, 2022
 FILE:
 Y:\Project_Work\GE22-0098-1\CIV\Design Calculations\Sanitary\GE22-0098-1-CIV-SAN\SSGN-2022-09-19.xlsx



STREET	LOCATION		RESIDENTIAL AREAS (0.004 L/s/person)				SCHOOL				COMMERCIAL (0.10 L/s/ha)				INFILTRATION (0.10 L/s/ha)				DESIGN										
	AREA NO.	MANHOLE LOCATION	POPULATION DENSITY		POPUL.	ACCU. POPUL.	PEAK FACTOR	PEAK RES. FLOW	AREA	ACCU. AREA	PF	PEAK FLOW	AREA	ACCU. AREA	PF	PEAK FLOW	AREA	ACCU. AREA	INFIL. FLOW	TOTAL VOLUME FLOW	DIST	SLOPE	PIPE SIZE	CAPACIT. Y	FULL FLOW VELOCIT. Y	ACTUAL FLOW VELOCIT. Y	FALL IN SEWER	DROP IN MH	INVERT U.S.
Residential Development	1	MH1	FROM MH	TO MH	Area	# Units	R1	R4	69	69	4.3	1.20	0.39	21	0.39	21	0.00	0.00	0.00	45.0	2.00	150	21.53	1.22	0.65	m	m	m	m

Justin Erb

From: Dave Blake <dblake@town.stmarys.on.ca>
Sent: September 9, 2022 3:22 PM
To: Jeff Wolfe; Justin Erb
Cc: Montana Wilson; Nick Preikschas; Curtis Schaerer
Subject: RE: 769 Queen St. East - Watermain and Sanitary Pumping Station Information
Attachments: QUEEN EAST SPS_06.24.20.pdf; QueenStreetEast-10 Cain- Pumping Station.pdf; QueenStreetEast-7 Cain.pdf

External (dblake@town.stmarys.on.ca)

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Good Afternoon,

Please note that the Town does not have any recent system pressures or hydrant flow tests for this area to facilitate this review. In order to determine system capacity and / or available fire protection, hydrant flow testing may be required. Please note that the Town does not provide this level of service however will facilitate the testing of hydrants by operating municipal hydrants for firms completing the testing.

With regards to the sanitary, please see attached available drawings to assist in capacity determination. The SPS operates with two (2) pumps in a lead/lag scenario. Based on a historical draw down test, the pumps were historically operating at approximately 10.5L/s each, and 14.7 L/sec together. However this information is dated and would need to be updated. Wastewater generation rates in accordance with the Town's Engineering and Design Guidelines will be required in evaluating impacts to the SPS as well as for the Town to assess capacity considerations at the WPCP.

Please let me know if you have any further questions.
Thanks,

Dave Blake, C.E.T., Environmental Services Manager
Public Works Department / Environmental Services
Town of St. Marys – Municipal Operations Centre
408 James Street South, St. Marys, ON
Phone: 519-284-2340, ext. 209



townofstmarys.com | [COVID-19 information](#)



From: Jeff Wolfe <jwolfe@town.stmarys.on.ca>
Sent: September 8, 2022 3:55 PM
To: Justin Erb <justin@gritengineering.ca>
Cc: Montana Wilson <montana@gritengineering.ca>; Nick Preikschas <nick@gritengineering.ca>; Curtis Schaerer

<curtis@gritengineering.ca>; Dave Blake <dblake@town.stmarys.on.ca>

Subject: RE: 769 Queen St. East - Watermain and Sanitary Pumping Station Information

Hi Justin,

I have cc'd my coworker Dave Blake. Dave looks after the water and sanitary systems for the Town and will be able to provide any relevant capacity information we have available.

Jeff Wolfe, C.Tech.

Infrastructure Services Manager

Town of St. Marys

T: 519-284-2340 x 397

From: Justin Erb <justin@gritengineering.ca>

Sent: September 8, 2022 3:40 PM

To: Jeff Wolfe <jwolfe@town.stmarys.on.ca>

Cc: Montana Wilson <montana@gritengineering.ca>; Nick Preikschas <nick@gritengineering.ca>; Curtis Schaerer <curtis@gritengineering.ca>

Subject: 769 Queen St. East - Watermain and Sanitary Pumping Station Information

Caution: This is an external email. Please take care when clicking links or opening attachments. When in doubt, contact your IT Department

Hi Jeff,

We are working on the preliminary design for a proposed short-term rental development at the above-noted address, see the screenshot below for a markup of the approximate location. The development would be tributary to the sanitary sewer on Queen Street and ultimately to the pumping station at the corner of Birch Drive and Queen Street. Can you please send me any information that the Town has on the capacity of the sanitary sewer and pumping station and the pressures and any hydrant flow tests that you have for the watermain on Queen Street for us to include in our Functional Servicing Report for the Official Plan Amendment and Zone Change?



Thanks and have a great day,



Justin Erb, C.E.T.
Senior Civil Technologist
226.808.1906
justin@gritengineering.ca



Appendix C

Domestic Water Demand Calculations

Fire-Fighting Water Demand Calculations

Hydrant Flow Test



Domestic Water Requirement, Velocity, and Turnover

Project	Short-Term Residential Rental Development
Project Number	GE22-0098-1
Client	Staffen Family Holdings Inc.
Address	769 Queen Street East, St. Marys
Date	September 22, 2022

Domestic Water Demand

Average Day Demand = ¹	255	L/day/cap
Average Day Demand = ¹	0.002951389	L/s/cap
Maximum Day Peaking Factor = ²	4.9	
Maximum Hour Peaking Factor = ²	7.4	
Low Density Residential = ¹	3.3	p/unit
Medium Density Residential = ¹	2.1	p/unit
High Density Residential = ¹	1.6	p/unit
Commercial Area Allowance Average Flow= 28m ³ /(ha d) = ¹	28000.0	L/day/ha
Industrial Area Allowance Average Flow= 35m ³ /(ha d) = ¹	35000.0	L/day/ha

	Units	Area (ha)	Population	Average Day (L/s)	Maximum Day (L/s)	Maximum Hour (L/s)
Low Density Residential ³	21	N/A	70	0.207	1.012	1.529
Medium Density Residential ³	0	N/A	0	0.000	0.000	0.000
High Density Residential ³	0	N/A	0	0.000	0.000	0.000
Commercial Area ³	N/A	0.00	0	0.000	0.000	0.000
Industrial Area ³	N/A	0.00	0	0.000	0.000	0.000
Totals	21	0.00	70	0.207	1.012	1.529

Water Volume & Turnover Calculation

Pipe Size (mm)	Length (m)	Volume (L)
150	31.8	561.07
50	27.1	53.19
	0.0	0.00
	0.0	0.00
Total Volume		614.26

Volume (L)	Average Day Demand (L/s)	Hours	Days
614.26	0.207	0.83	0.03

Therefore, the water turnover of 0.83 hours is less than the maximum allowable time of 72 hours.¹or²

References

1. Town of St. Marys *Design Guidelines and Supplemental Specifications for Municipal Services* May 2017
2. MECP *Design Guidelines for Drinking Water Systems 2008*
3. See Site Plan prepared by Orchard Design Studios

Project	Short-Term Residential Rental Development
Project Number	GE22-0098-1
Client	Staffen Family Holdings Inc.
Address	769 Queen Street East, St. Marys
Date	September 22, 2022

Maximum Ontario Building Code Fire-Fighting Flow Required¹

$$Q = V * V * S_{tot}$$

O.B.C. Building Classification= ²	C	
Type of Construction= ²	Combustable	
Water Supply Coefficient - K=	18	
Building Area= ²	368.00	m ²
Building Height= ²	12.00	m
Building Volume=	4,416.00	m³

$$S_{tot} = 1.0 + (S_{side1} + S_{side2} + S_{side3} + S_{side4})$$

Side 1=	10.00	m	0.00	North
Side 2=	4.50	m	0.50	South
Side 3=	5.00	m	0.50	East
Side 4=	10.00	m	0.00	West

$$S_{tot} = 2.00$$

$$S_{tot} < \text{or} = 2, \text{ therefore } S_{tot} = 2.00$$

$$Q = 158,976.00 \text{ L}$$

Fire-Fighting Required Flow Rate=	4,500	L/min
Domestic Maximum Day Demand= ³	1.01	L/s
=	60.74	L/min
Total Required - Fire-Flow + Max. Day=	4,560.74	L/min

Fire-Fighting Available Flow @ Pressure

Static Pressure= ⁴	70.00	psi (482.63 kPa) @	0	USGPM (0.00 L/min)
Tested Supply Flow Rate= ⁴	64.00	psi (441.26 kPa) @	215	USGPM (814 L/min)
Tested Supply Flow Rate= ⁴	55.00	psi (379.21 kPa) @	395	USGPM (1495 L/min)
Tested Supply Flow Rate= ⁴	53.00	psi (365.42 kPa) @	531	USGPM (2010 L/min)
Pressure @ Required Flow Rate=	29.20	psi (201.35 kPa) @	1205	USGPM (4560.74 L/min)
Pressure Drop in System=	40.80	psi (281.28 kPa)		

The water supply pressure at the required flow rate of 4560.74 L/min is 201.35 kPa or 29.2 psi which is greater than the minimum required pressure of 140 kPa (20 psi) that is required under the Fire-Flow + Maximum Day scenario.⁵

References

1. Ontario Building Code A-3.2.5.7 and associated tables 1 & 2.
2. See Ontario Building Code Matrix and drawings by Orchard Design Studios Inc.
3. See *Domestic Water Demand Calculations* by GRIT Engineering Inc.
4. See Hydrant Flow Test by Western Fire Protection Inc., completed on September 19, 2022
5. MECP *Design Guidelines for Drinking Water Systems 2008*

INSTALLATION BY:



WESTERN
FIRE PROTECTION INC.

DESIGN INSTALLATION INSPECTION SERVICE REPAIR

1030-B ADELAIDE ST SOUTH, LONDON, ON, N6E 1R6

PH (519) 641-3059 FX (519) 641-2639

FLOW TEST RESULTS

PROJECT: 759 QUEEN ST EAST, ST. MARY'S, ON

LOCATION: 759 QUEEN ST EAST, ST. MARY'S, ON

DATE: SEPTEMBER 19, 2022

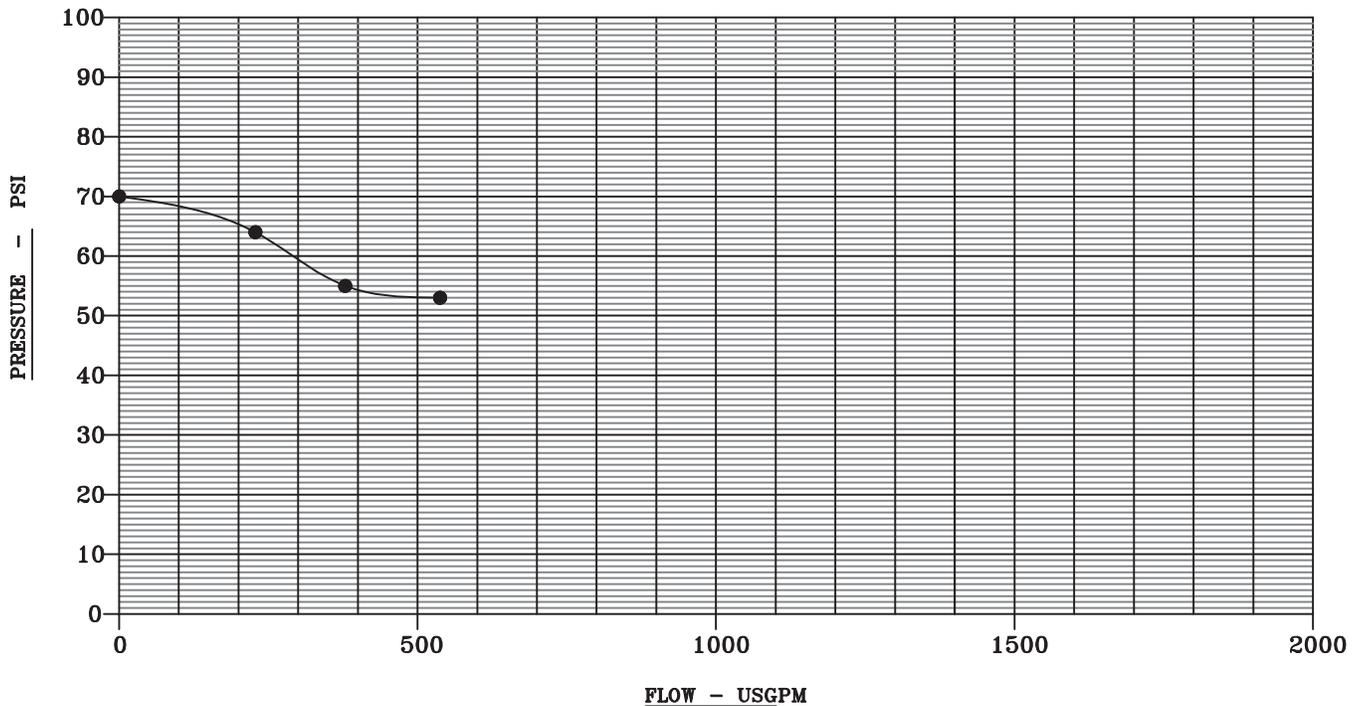
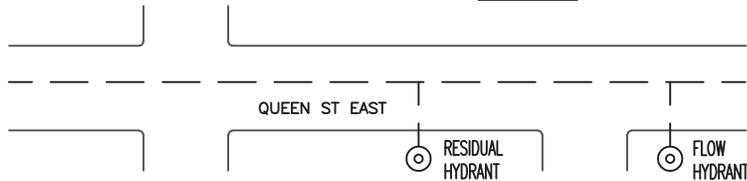
TIME: 2:30 PM

TEST BY: WESTERN FIRE PROTECTION (RB/TR)
& WATERLOO WATER DEPT.

STATIC PRESSURE (PSI): 70

TEST NO.	NO. OF OUTLETS	OUTLET DIAMETER	RESIDUAL PRESSURE (PSI)	PITOT PRESSURE (PSI)	HYDRANT COEFFICIENT	FLOW (GPM)
#1	1	1-1/8"	64	40	0.9	215
#2	1	1-3/4"	55	23	0.9	395
#3	1	2-1/2"	53	10	0.9	531
#4	2	2-1/2"	-	-/-	-	-

759 QUEEN
STREET EAST





Appendix D

Town of St. Marys' Stormwater Policy Calculations



Storm Water Management
Town of St. Marys Criteria Determination

Project	<u>Short-Term Residential Rental Development</u>
Project Number	<u>GE22-0098-1</u>
Client	<u>Staffen Family Holdings Inc.</u>
Project Address	<u>769 Queen Street East, St. Marys</u>
Date	<u>September 19, 2022</u>

Catchment Characteristics:

Surface Material	Area (m²) (A)	Percent Impervious	Coefficient (C)
Total Site Area	3500.00		
Building	629.26	100%	0.90
Asphalt / Concrete	1140.11	100%	0.90
Gravel	0.00	90%	0.90
Grass/Landscape	1730.63	20%	0.20
Totals	3500.00	60%	0.55
Site Area	0.350	hectares	
Coefficient (C)	0.55		
Product	0.19		

The product of the property size in hectares and the average runoff coefficient is 0.19 which is less than 0.65. Therefore, Best Engineering Practices shall be implemented.