CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

Department of Public Services,
55 Portland Street,
Portland, Maine 04101-2991

Date: August 21, 2017

Bradley Roland, P.E.
Water Resources Division

1. Please, Submit Utility, Site, and Locus Plans.

Site Address: 1700 Westbrook Street

Chart Block Lot Number: _____

Proposed Use: Residential
Previous Use: Farm
Existing Sanitary Flows: N/A GPD
Existing Process Flows: N/A GPD
Description and location of City sewer that is to receive the proposed building sewer lateral.

Sewer on Westbrook Street.

Site Category		
	Commercial *(see part 4 below)*	
	Industrial *(complete part 5 below)*	
	Governmental	
	Residential	✓
	Other *(specify)*	

Clearly, indicate the proposed connections, on the submitted plans.

2. Please, Submit Contact Information.

City Planner's Name: Barbara Barhydt Phone: 207-874-8699
Owner/Developer Name: Stroudwater Development Partners, LLc
Owner/Developer Address: 62 Portland Road, Kennebunk ME, 04043
Phone: 207-939-5432 Fax: N/A E-mail: michael.corbett.barton@gmail.com
Engineering Consultant Name: Acorn Engineering, Inc
Engineering Consultant Address: P.O. Box 3372
Phone: 207-775-2655 Fax: N/A E-mail: wsavage@acorn-engineering.com

Note: Consultants and Developers should allow +/- 15 days, for capacity status, prior to Planning Board Review.

3. Please, Submit Domestic Wastewater Design Flow Calculations.

Estimated Domestic Wastewater Flow Generated: 38,250 GPD
Peaking Factor/ Peak Times: Peaking Factor: 4 / Peak Times: 6:00AM - 8:00 AM
Specify the source of design guidelines: *(i.e.__"Handbook of Subsurface Wastewater Disposal in Maine," __ "Plumbers and Pipe Fitters Calculation Manual," __ Portland Water District Records, Other (specify)* State of Maine Subsurface Wastewater Disposal Rules, Effective 8/13/15

Note: Please submit calculations showing the derivation of your design flows, either on the following page, in the space provided, or attached, as a separate sheet.

* See derivation of design flows attached

4. Please, Submit External Grease Interceptor Calculations.

Total Drainage Fixture Unit (DFU) Values: N/A

Size of External Grease Interceptor: _____

Retention Time: _____

Peaking Factor/ Peak Times: _____

Note: In determining your restaurant process water flows, and the size of your external grease interceptor, please use The Uniform Plumbing Code. Note: In determining the retention time, sixty (60) minutes is the minimum retention time. Note: Please submit detailed calculations showing the derivation of your restaurant process water design flows, and please submit detailed calculations showing the derivation of the size of your external grease interceptor, either in the space provided below, or attached, as a separate sheet.

5. Please, Submit Industrial Process Wastewater Flow Calculations

Estimated Industrial Process Wastewater Flows Generated: N/A GPD

Do you currently hold Federal or State discharge permits? Yes ____ No ____

Is the process wastewater termed categorical under CFR 40? Yes ____ No ____

OSHA Standard Industrial Code (SIC): *(http://www.osha.gov/oshstats/sicser.html)*

Peaking Factor/Peak Process Times: _____

Note: On the submitted plans, please show where the building's domestic sanitary sewer laterals, as well as the building's industrial-commercial process wastewater sewer laterals exits the facility. Also, show where these building sewer laterals enter the city's sewer. Finally, show the location of the wet wells, control manholes, or other access points; and, the locations of filters, strainers, or grease traps.

Note: Please submit detailed calculations showing the derivation of your design flows, either in the space provided, or attached, as a separate sheet.

Calculation of Wastewater Flowrate for Stroudwater Preserve Subdivision

The proposed development will include up to 100 single-family housing lots along with a Planned Residential Unit Development (PRUD) area which would add another 25 units. Based upon the Section 4 of the Maine Subsurface Wastewater Disposal Rules, the project anticipates the following design flows on a daily basis:

Estimate of Anticipated Daily Flows				
Development	Unit Size	Number of Units	Gallons per Day per Unit	Total Gallons per Day
Existing flow to be removed				
None		0		
Proposed flow				
PRUD	3-Bedroom	25	270	6,750
Residential Units	3-Bedroom	50	270	13,500
Residential Units	4-Bedroom	50	360	18,000
			Net Change	**+ 38,250**
*Values based on STATE OF MAINE: SUBSURFACE WASTEWATER DISPOSAL RULES, most recent edition				

Sanitary wastewater from the development will be pumped to the existing 8-inch dimeter gravity sewer line along Westbrook Street. Acorn estimates a peak hourly flowrate of 6,375 gallons entering the city sewer based on use of a peaking factor of 4.0 applied to the average daily flow quantity. The 4.0 peaking factor comes from Figure 1 in the 2014 edition of, *Recommended Standards for Wastewater Facilities*, published by the Great Lakes - Upper Mississippi River Board Of State And Provincial Public Health And Environmental Managers. Figure 1 plots the ratio of peak hourly flow to design average flow vs. population served. For the estimated 425 residents of the proposed development the factor is 4.0.

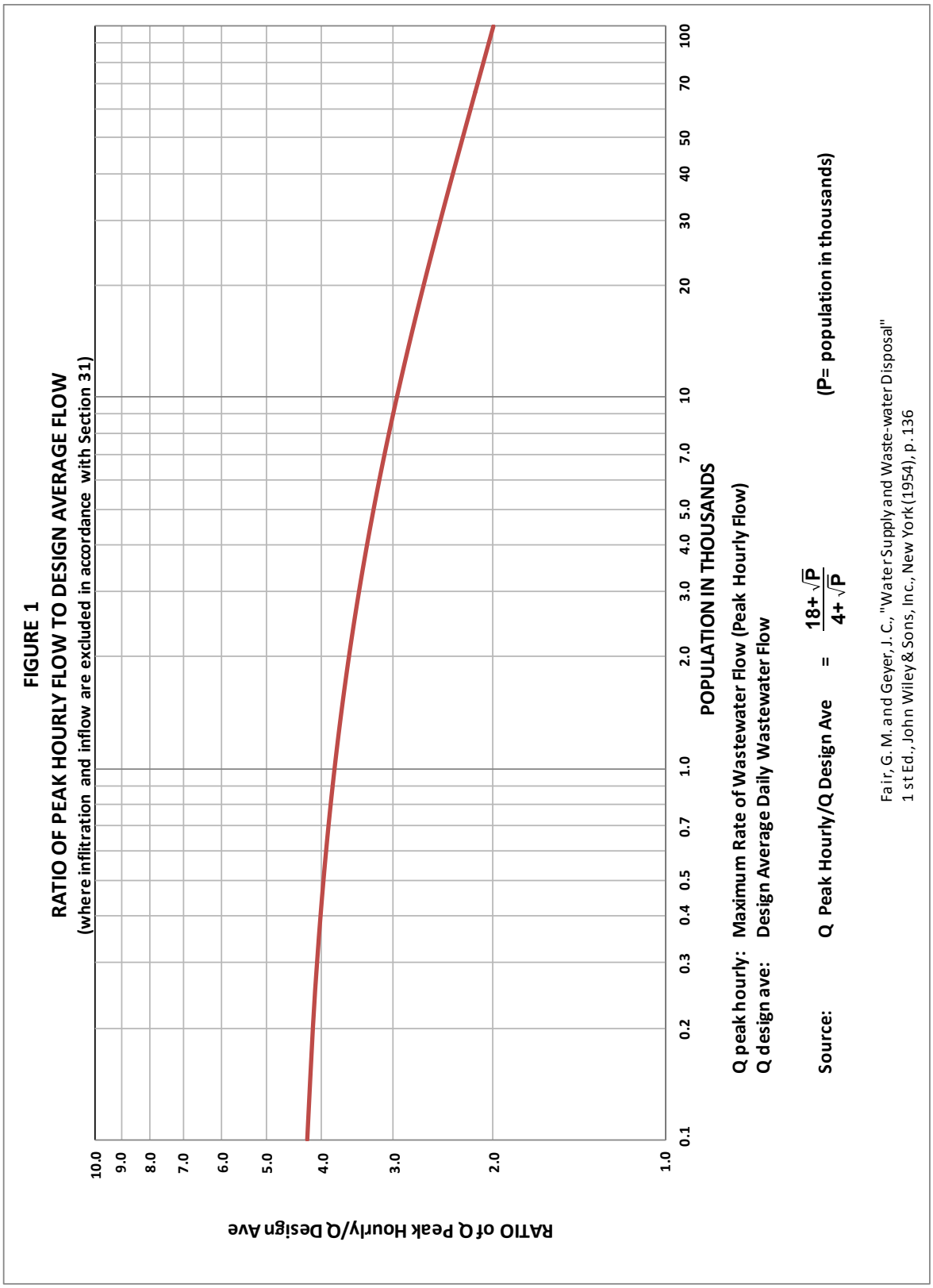
FIGURE 1
RATIO OF PEAK HOURLY FLOW TO DESIGN AVERAGE FLOW
(where infiltration and inflow are excluded in accordance with Section 31)
RATIO of Q Peak Hourly/Q Design Ave
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.1
0.2
0.3
0.4
0.5
0.7
1.0
2.0
3.0
4.0
5.0
7.0
10
20
30
40
50
70
100
POPULATION IN THOUSANDS
Q peak hourly: Maximum Rate of Wastewater Flow (Peak Hourly Flow)
Q design ave: Design Average Daily Wastewater Flow
Source: Q Peak Hourly/Q Design Ave = 18+ √P / 4+ √P
(P= population in thousands)
Fair, G. M. and Geyer, J. C., "Water Supply and Waste-water Disposal"
1 st Ed., John Wiley & Sons, Inc., New York (1954), p. 136