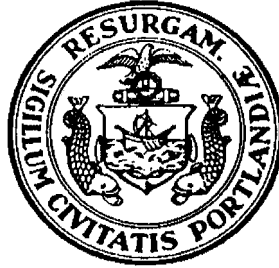


# CITY OF PORTLAND WASTEWATER CAPACITY APPLICATION

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



Bradley Roland, P.E.  
Water Resources Division

Date: 9/7/16

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

Site Address: 0 Canal Plaza, Portland, ME Chart Block Lot Number: 32-I-23

Proposed Use: Restaurant or Retail Accessory to Plaza (TBD)

Previous Use: Plaza

Existing Sanitary Flows: 0 GPD

Existing Process Flows: 0 GPD

Description and location of City sewer that is to receive the proposed building sewer lateral.

|               |                                    |                                     |
|---------------|------------------------------------|-------------------------------------|
| Site Category | Commercial (see part 4 below)      | <input checked="" type="checkbox"/> |
|               | Industrial (complete part 5 below) | <input type="checkbox"/>            |
|               | Governmental                       | <input type="checkbox"/>            |
|               | Residential                        | <input type="checkbox"/>            |
|               | Other (specify)                    | <input type="checkbox"/>            |

Service will be to sewer MH located near 1 Canal Plaza, which connects to Union St. Sewer (see plan).

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

**2. Please, Submit Contact Information.**

City Planner's Name: Caitlin Cameron Phone: (207)874-8901

Owner/Developer Name: Cow Plaza 1 LLC

Owner/Developer Address: 100 Commercial Street, Portland, ME

Phone: (207)775-2252 Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_

Engineering Consultant Name: Woodard & Curran, c/o Lauren Swett

Engineering Consultant Address: 41 Hutchins Drive, Portland, ME

Phone: (207)558-3763 Fax: \_\_\_\_\_ E-mail: lswett@woodardcurran.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: 294 GPD

Peaking Factor/ Peak Times: 5.6 (per TR-16)

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) \_\_\_\_\_

*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 notes on calculations on next page.

**4. Please, Submit External Grease Interceptor Calculations.** See notes on calculations below

|                                           |                                                  |
|-------------------------------------------|--------------------------------------------------|
| Total Drainage Fixture Unit (DFU) Values: | <u>3 requiring grease drain of 37.5 total</u>    |
| Size of External Grease Interceptor:      | <u>125 gal/75 GPM (Schier Great Basin GB-75)</u> |
| Retention Time:                           | <u>&gt;60 minutes</u>                            |
| Peaking Factor/ Peak Times:               | <u>230 (per Uniform Plumbing Code)</u>           |

*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 N/A**

|                                                            |                                                                                                     |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| Estimated Industrial Process Wastewater Flows Generated:   | _____ 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):                       | ( <a href="http://www.osha.gov/oshstats/sicser.html">http://www.osha.gov/oshstats/sicser.html</a> ) |
| 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.*

Sewer flow calculations:

Sewer flows are an estimate based on a conservative assumption of an eating place with 3 meals/day per the Handbook of Subsurface Wastewater Disposal in Maine, assuming 9 seats x 30 GPD and 2 employees x 12 gpd. The final building use has not been set, and depending on the selected tenant, it may be retail, or may be an eating place that fits into the category of takeout, paper service, or less than 3 meals, all of which would result in lower flows. When the final tenant is selected, an update to the capacity can be provided.

Grease trap calculations:

As noted above, the final use/tenant has not been selected. A preliminary estimate of DFU has been made for a typical restaurant use. A copy of the fixture estimate is attached. Based on this estimate, approximately 8% of the sewer flow will be routed through the grease trap. 8% of the conservative flow estimate from the previous page is 23.5 GPD. Per the City of Portland Technical Manual, the grease trap chamber (2/3 of tank volume) must provide for adequate capacity for the proposed flow. 75% of the proposed grease trap is 93.75 gallons, which is greater than the anticipated daily volume of 23.5 gallons.

When a final tenant is selected, these calculations will be revisited and provided to the City for verification.

**0 CANAL PLAZA PRELIMINARY UTILITY EVALUATION**

**0 CANAL PLAZA - RESTAURANT TENANT ESTIMATE**

| QUANTITY                   | DESCRIPTION               | UPC 2009 DESCRIPTION                    | COLD WSFU (PER | HOT WSFU (PER | TOTAL WSFU (PER | WSFU (TOTAL) | DFU (PER FIXTURE)  | DFU (TOTAL) | GREASE DRAIN                            | HOT WATER (GPH)       | TOTAL HOT   |
|----------------------------|---------------------------|-----------------------------------------|----------------|---------------|-----------------|--------------|--------------------|-------------|-----------------------------------------|-----------------------|-------------|
|                            |                           |                                         | FIXTURE)       | FIXTURE)      | FIXTURE)        |              |                    |             |                                         |                       | WATER (GPH) |
| 1                          | DRINKING FOUNTAIN         | DRINKING FOUNTAIN OR WATER COOLER       | 0.5            | 0             | 0.5             | 0.5          | 0.5                | 0.5         | 0                                       | 0                     | 0           |
| 2                          | HOSE BIBB                 | HOSE BIBB                               | 2.5            | 0             | 2.5             | 5            | 0                  | 0           | 0                                       | 0                     | 0           |
| 2                          | LAVATORY                  | LAVATORY                                | 0.75           | 0.75          | 1               | 2            | 1                  | 2           | 0                                       | 5                     | 10          |
| 1                          | KITCHEN - CLEAN PREP SINK | SINK, SERVICE                           | 2.25           | 2.25          | 3               | 3            | 3                  | 3           | 0                                       | 10                    | 10          |
| 1                          | KITCHEN - DIRTY WASH      | SINK, COMMERCIAL WITH FOOD WASTE        | 2.25           | 2.25          | 3               | 3            | 3                  | 3           | 1                                       | 105                   | 105         |
| 2                          | BAR SINKS                 | SINK, BAR                               | 1.5            | 1.5           | 2               | 4            | 2                  | 4           | 0                                       | 18                    | 36          |
| 1                          | PRE-WASH RINSE SINK       | SINK, SERVICE                           | 2.25           | 2.25          | 3               | 3            | 3                  | 3           | 1                                       | (ACCOUNTED FOR ABOVE) | 0           |
| 2                          | HAND SINK                 | SINK, WASH-UP                           | 1.5            | 1.5           | 2               | 4            | 2                  | 4           | 0                                       | 5                     | 10          |
| 1                          | URINAL                    | URINAL, 1.0 GPF FLUSHOMETER VALVE       | 20             | 0             | 20              | 20           | 2                  | 2           | 0                                       | 0                     | 0           |
| 2                          | WATER CLOSET              | WATER CLOSET, 1.6 GPF FLUSHOMETER VALVE | 35             | 0             | 35              | 70           | 4                  | 8           | 0                                       | 0                     | 0           |
| 1                          | GARBAGE DISPOSAL          | FOOD WASTE GRINDER, COMMERCIAL          | -              | -             | -               | -            | 3                  | 3           | 1                                       | 0                     | 0           |
| 2                          | FLOOR DRAIN               | FLOOR DRAIN, EMERGENCY                  | -              | -             | -               | -            | 0                  | 0           | 0                                       | 0                     | 0           |
| 1                          | FLOOR DRAIN               | FLOOR DRAIN                             | -              | -             | -               | -            | 2                  | 2           | 0                                       | 0                     | 0           |
| 1                          | MOP SINK                  | SINK, SERVICE OR MOP BASIN              | 2.25           | 2.25          | 3               | 3            | 3                  | 3           | 0                                       | 15                    | 15          |
| <b>TOTAL WSFU:</b>         |                           |                                         |                |               |                 | <b>117.5</b> | <b>TOTAL DFU:</b>  | <b>37.5</b> |                                         |                       |             |
| <b>DCW SUPPLY:</b>         |                           |                                         |                |               |                 | <b>1.5"</b>  | <b>DRAIN SIZE:</b> | <b>4"</b>   |                                         |                       |             |
| <b>(SUPPLY &gt;60 PSI)</b> |                           |                                         |                |               |                 |              |                    |             |                                         |                       |             |
|                            |                           |                                         |                |               |                 |              |                    |             | <b>TOTAL HOT WATER (GPH):</b>           | <b>186</b>            |             |
|                            |                           |                                         |                |               |                 |              |                    |             | <b>SAFETY FACTOR (%):</b>               | <b>0.5</b>            |             |
|                            |                           |                                         |                |               |                 |              |                    |             | <b>WATER HEATER BTUH:</b>               | <b>209250</b>         |             |
|                            |                           |                                         |                |               |                 |              |                    |             | <b>NATURAL GAS PIPE MAX LENGTH (F):</b> | <b>300</b>            |             |
|                            |                           |                                         |                |               |                 |              |                    |             | <b>NATURAL GAS PIPE SIZE:</b>           | <b>1"</b>             |             |

**3 CANAL PLAZA - EXISTING CONDITIONS**

| QUANTITY                    | DESCRIPTION | UPC 2009 DESCRIPTION                    | COLD WSFU (PER | HOT WSFU (PER | TOTAL WSFU (PER | WSFU (TOTAL) | DFU (PER FIXTURE)           | DFU (TOTAL) |  |  |  |
|-----------------------------|-------------|-----------------------------------------|----------------|---------------|-----------------|--------------|-----------------------------|-------------|--|--|--|
|                             |             |                                         | FIXTURE)       | FIXTURE)      | FIXTURE)        |              |                             |             |  |  |  |
| 36                          | WC          | WATER CLOSET, 1.6 GPF FLUSHOMETER VALVE | 35             | 0             | 35              | 1260         | 4                           | 144         |  |  |  |
| 42                          | LAV         | LAVATORY                                | 0.75           | 0.75          | 1               | 42           | 1                           | 42          |  |  |  |
| 7                           | URINAL      | URINAL, 1.0 GPF FLUSHOMETER VALVE       | 20             | 0             | 20              | 140          | 2                           | 14          |  |  |  |
| 7                           | SERVICE/MO  | SINK, SERVICE OR MOP BASIN              | 2.25           | 2.25          | 3               | 21           | 3                           | 21          |  |  |  |
| <b>TOTAL WSFU:</b>          |             |                                         |                |               |                 | <b>1463</b>  | <b>TOTAL DFU:</b>           | <b>221</b>  |  |  |  |
| <b>EXISTING DCW SUPPLY:</b> |             |                                         |                |               |                 | <b>3"</b>    | <b>EXISTING DRAIN SIZE:</b> | <b>10"</b>  |  |  |  |

**COMBINED BUILDING TOTALS**

|                            |  |  |  |  |  |               |                        |              |  |  |  |
|----------------------------|--|--|--|--|--|---------------|------------------------|--------------|--|--|--|
| <b>TOTAL WSFU:</b>         |  |  |  |  |  | <b>1580.5</b> | <b>TOTAL DFU:</b>      | <b>258.5</b> |  |  |  |
| <b>TOTAL DEMAND (GPM):</b> |  |  |  |  |  | <b>290</b>    |                        |              |  |  |  |
| <b>TOTAL INCREASE:</b>     |  |  |  |  |  | <b>8%</b>     | <b>TOTAL INCREASE:</b> | <b>17%</b>   |  |  |  |