

Guidelines for creating a Water Use Impact Report Commercial/Industrial – New or Redevelopment

The goal of the Concord Water and Sewer Division Water Use Impact Report is to characterize and quantify the proposed developments potential indoor, outdoor, industrial and recreational water demands.

For any instantaneous potable water demand greater than 30 gallons per minute, which will result in a need for a water meter greater than ¾-inch in size, Water and Sewer Division staff will work with you to fill out a meter sizing worksheet or “Water Customer Data Sheet” to accurately characterize your instantaneous water demand with consideration of water conserving fixtures (Attachment 1).

The water demands identified will be used in a number of applications including but not limited to references in water service approval letter(s) and system connection agreements as well as ensure design is consistent with Title 5 (waste water flow constraints) and will inform us as to proper water meter sizing and assessment of water connection fees.

Contact Information

Owner, Contractor and other applicable party contact information including name, address, telephone, email, etc.

Project Description

Provide a brief description of the type of project (new, tear down, rehabilitation, change of use, etc.) and what and the type(s) and quantity of activities will take place (offices, exam room, bathrooms, industrial, function/meeting area, etc). If this is not a previously undeveloped parcel, please provide a summary of project changes that can impact water consumption, change in the number of beds/seats/units/other from x to x.

For example: xxx is a [DESCRIPTION], xxx square foot building consisting of x offices/ conference rooms/function facilities with x bathrooms, kitchen, janitorial ... etc.

Utility Description

Provide a brief description of the type of water, waste water and drainage infrastructure that will be installed as a result of this project. Specifically addressing the following;

- water main/service size
- number of units/meters (the Water and Sewer Division will size your meter)
- fire protection (hydrants installed/available, sprinkler system, etc.)
- other utility information applicable to the project

Water Use & Conservation Measures

Concord Water Staff will work with you to create a Water Demand Estimation Spreadsheet using industry standard assumptions to help quality the water demand reduction efforts when compared to fixtures that just meet plumbing code. (See Attachment 2 for Samples of previous Water Demand Estimation Spreadsheets).

Provide a short 1-2 sentence narrative to describe general water conservation goals and measures to be implemented.

For example: To reduce the projects water demand and waste water flows we have implemented the following water conservation measures. This project design aims to achieve at least xxx% reduction in water demand to qualify for LEED xxx certification.

Interior - Potable

Along with the water demand information noted above, the applicant shall also document what **water reduction measures** have been incorporated into the design to minimize the impact on the municipal supply. This reduction shall be quantified as a **percent** reduction based upon standard plumbing code calculations (from Water Demand Estimation Spreadsheet).

Examples of Water Saving Measures

- Install High-Efficiency Toilets 0.8-1.28 gal/flush
- Urinals <0.5gal/flush, enzyme cartridge, water-free
- Showers <2.0gpm
- Metering Lavatory faucets (aerator) 0.5gpm
- Domestic Kitchen Faucet (aerator) <=1.0 gallon/minute
- Domestic Dish Washer
- Commercial Kitchen Facilities
- Domestic or Commercial Laundry facilities

Outdoor

Provide a brief description of outdoor water use and water reduction measures proposed to minimize the impact on the municipal water system. This description should include **square footage** of grass/lawn & planting beds, a brief **description** of the fill, notation of grass seed mix consisting of drought-tolerant fescues (indicated the name and species of grass seeds utilized), loam with minimum of 10% organic content, a **planting plan** focusing on native drought tolerant species, or other methods of outdoor water conservation.

If there an irrigation system is planned, provide an approximation of the water demand for outdoor irrigation and how the outdoor water use will be minimized. To provide the recommended 1-inch of water per week split between 2 days (4 hours each day), use the below formula;¹

624 gallons of water / 1000 square feet irrigated area / week /split between 2 watering days
 $(624 \times (\text{sq ft irrigated}/1000))/2 = x \text{ gallons day} / 8 \text{ hours} = x \text{ gallons per minute}$

Note: You may also provide your own calculation with reference

Please note that if an irrigation system will be installed, Town Bylaw requires that all in-ground irrigation systems connected to the public water supply be registered with the Town and must include rain sensors and reduced pressure backflow devices.

Mechanical/Industrial/HVAC – Non Potable

Characterize any industrial water demands (like water treatment/water softeners, HVAC, cooling towers) by describing operating producers, time frame, average operating daily water demands, peak day water demand for each units, what water efficiency measures are being implemented and the percent water demand reduction efficiency measures have allowed.

Recreational – Non Potable

Characterize any recreational water demands (like swimming pools, fountains etc.) by describing operating months, average operating day water demands, make up water demand, what water efficiency measures are being implemented (splash trough, temperature control, dehumidifier, cover, etc.) and the percent water demand reduction efficiency measures have allowed.

¹ American Water Works Association, Manual of Water Supply Practices; Sizing Water Service Lines and Meters (M22), 2004

Fire Protection – Non Potable

Characterizes fire flow protection needs in terms of flow needed and system testing frequency (sprinkler system testing, pump tests, flow tests, etc).

Total Water Demand

Provide a brief description of the projects estimated need for municipal water including **peak instantaneous flow** (from the *Water Customer Data Sheet*) as well as **average daily demands for the potable supply** (from the *Water Demand Estimation Spreadsheet*).

For example: By installing water conservation fixtures this project is reducing total peak instantaneous water demand by xxx% from and estimated xxx gpm to xxx gpm and reducing average daily demand by xxx% from and estimated xxx gpd to xxx gpd.

Process

1. Contact Melissa Simoncini, Senior Environmental and Regulatory Coordinator, for guidance in creating a Water Impact Report and supporting documentation.
2. Prepare and submit Water Impact Report and plumbing fixture cut sheets early in the design process.
3. Final Approved Water Impact Report and plumbing fixture cut sheets required prior to Application for Water Service.
4. Fixtures & Appliances Water Demand Minimization Affidavit along with plumbing fixture cut sheets for installed fixture installed must be submitted by the plumber before water service activation.
5. Outdoor Water Use Water Demand Minimization Affidavit must be submitted prior to Activation/Occupancy (TBD by Superintendent) by responsible party (general contractor, landscape architect, or other)
6. Water Efficient Management Practices Demand Minimization Affidavit must be submitted prior to Activation/Occupancy (TBD by Superintendent) by responsible party (owner, facilities supervisor, etc).

Additional resources available

- EPA WaterSense at Work/Commercial Buildings Guide - <http://www.epa.gov/watersense/commercial/>
- Consortium for Energy Efficiency - www.cee1.org
- American Society of Heating, Refrigerating and Air Conditioning Engineers Standard 90.1-2010

Attachments

Attachment 1: Water Customer Data Sheet (Excel File)

Attachment 2: Water Demand Estimation Spreadsheet Example (Excel File)