HOUSEHOLD WATER USAGE

Toilets

- Toilets range from 3 litre to 14 litre flushes (1.5 – 6.7 cents per flush)
- Most common size is 6 litres (toilets from the past 20 years) is only 2.9 cents per flush!
- It also can depend on how long you hold down the handle and/or where your water level is at
- Float vs. Cup style toilets (
- 3/8" i.d. 1/2" o.d. water supply line

Faucets

- Faucets have changed a bit in the past decade, the nozzle restricts water flow thru an aerator
- Aerators have about 5-8 parts and add "bubbles" to your water helping to conserve water and not effecting volume
- 1/2" i.d. 5/8" o.d. water supply line

Washing Machines

- Top Load (Fills to a height) vs. Front Load (Fills more to a weight/set amount)
- 3/4" i.d and 7/8" o.d. or 1/2" i.d. and 5/8" o.d. water supply line
- Regardless, cycles vary greatly as do the size of loads. Customers should ideally compare the meter read with their washer cycle to get a more accurate range.
- Top Load: If I put in a single sock, I am going to be using a lot of water even upwards to 60 litres (30 cents)
- Front Load: High Efficiency washers boast savings and only using roughly 30 litres in comparison (15 cents)
- Solenoid Valve (see Solenoids for more information)
- CAUTION: the drain isn't visible, if the valve in a washer is stuck open it would be very difficult to see/hear this leak

Dishwashers

- Dishwasher technology hasn't changed as much over the years, what has changed is the number of racks and nozzles/jets
- 1/2" i.d. 5/8" o.d. water supply line
- Regardless, cycles vary greatly as do the size of loads. Customers should ideally compare the meter read with their washer cycle to get a more accurate range.
- Dishwashers have a large variation but looking at manufacturer specifications from the past ten years (15 – 30 cents per regular load)
- Solenoid Valve (see Solenoids for more information)
- CAUTION: the drain isn't visible, if the valve in a washer is stuck open it would be very difficult to see/hear this leak

Showers

- Shower heads have changed a bit in the past decade, the nozzle restricts water flow thru an aerator
- Aerators have about 5-8 parts and add "bubbles" to your water helping to conserve water and not effecting volume
- 1/2" i.d. 5/8" o.d. water supply line

Bathtubs

- Start at about 150 litres and go up from there
- Kids use much less water (half full tub, towel them off when done)
- Adults use much more water (mini shower, fill, fill, shower after, towel off when done)
- 1/2” i.d. 5/8” o.d. water supply line

Hot Tubs

- they start at about 500 litres and go up to about 1500 litres for a 6-man tub
- most have cleaning cycles manual/automatic
- most have autofill devices to deal with evaporation and therefore rely on a solenoid valve/float system
- majority are all outdoors! And active all season long!
- 3/4” i.d and 7/8” o.d. or 1/2" i.d. and 5/8” o.d. water supply line
- Solenoid Valve (99% of them as hot tubs have changed quite a bit in the past 15 years… controls, materials, etc.)

Hot Water Tanks & Boiler Systems & On Demand Systems

- 3/4” i.d and 7/8” o.d water supply line
- Hot Water Tank water is gradually replenished rather than all at once so it doesn’t cool the hot water already inside the tank
- Boiler Systems heat water by means of a gas and turns it into steam. The steam travels through pipes to radiators or convectors, which give off heat and warm the room. As the steam cools, it condenses back into water, and returns to the boiler to be heated again.
- On Demand Systems rapidly heat the water as it’s in use either thru electricity or natural gas (you can actually use the meter to measure hot water demand from hardware such as dishwashers)
- Solenoid Valve

In-floor Heating

- 3/4” i.d and 7/8” o.d water supply line
- Usually in-floor systems are sealed glycol systems and don’t use water
- I’m going to say half the systems I see out there (seem to be homes built during the boom 2002-2005) have water systems and not glycol
- Systems fill due to evaporation, usually well sealed and last very long times without needing to replenish water
- Prone to damage (poor materials, defects, foundation shifts, etc.)
- Solenoid Valve (see Solenoids for more information)

Humidifiers

- 1/4” i.d. and 3/8” o.d. water supply micro line
- Furnace starts, air starts moving thru the furnace, signal sent to the Humidifer, Solenoid Valve opens to run water over top of an internal filter, air pulls humidity off of the filter and blows it thru the house, water stops a minute at the end of the cycle, air continues to blow and dries out the filter to deter bacteria growth, furnace shuts off.
- Beside your thermostat is a humidifier dial, the dial determines how wide open the Solenoid Valve is. Ideally your filter is clean and the water isn’t set too high.

- Most homes don't have their humidifiers hooked up as they need to be cleaned too often (usually every three months) A dirty filter will be too plugged up to retain water and will just be wasted down the trap by the furnace.
- Solenoid Valve (99% of them)

Salt Water Softener & Salt Free Water Softeners

- 3/4" i.d and 7/8" o.d water supply line
- soft water softeners work by filtering water thru a mineral tank and bypass drinking water lines, outdoor taps and the hwt tank
- salt-free water softeners have a series of filters and feed the entire home and don't usually bypass drinking water lines, outdoor taps and the hwt tank
- regardless if the system is grain water softener (big salt chunks), ion exchange water softener, dual tank water softener, salt-free water softener, etc. they all seem to rely on a solenoid valve
- recharge cycles involve a wash cycle where the resin beads (filtration method) or brine tank (salt) needs to be cleaned of all the mineral deposits its been cleaning, sometimes this cleaning cycle is set after a certain amount of water that has passed thru the system and/or a timer where it runs a cleaning cycle each night or early morning for example (common cleaning cycles are roughly 200-400 litres) Some systems have two cycles! One cleaning cycle for the one tank and a cycle for the second back-up tank. Ideally the customer has it based on a timer so we can see the amount each night as opposed to it filling after a certain amount of water passes thru the system.
- Solenoid Valve

Water Filtration

- 1/2" i.d. 5/8" o.d. water supply line or -1/4" i.d. and 3/8" o.d. water supply micro line
- very similar to a water softener but infinitely more difficult as there are sooooo many types https://brizfeel.com/water-purification-system/ but, they have their own shutoff valves and leaks are easier to detect as I can just turn off a valve under a sink
- regardless of the filtration types, I have the most problems with reverse osmosis systems 12:1, 6:1 and even newer systems boasting 3:1 levels (amount of water filtered to produce 1 glass of drinking water!)
- my problem is sometimes these systems rely on solenoids or similar device to turn off water when not in use or their storage tank is full.
- Solenoid Valve

Outdoor Taps

- 1/2" i.d. 5/8" o.d. water supply line
- most homes have separate shutoffs for their outdoor taps, it is always advised they use this year round to guarantee their water usage (I've seen kids playing with taps, neighbours stealing from neighbours, contractors, etc.)
- customers relying on frost free hose bibs still should have and use a shutoff inside
- kids playing in sprinklers or water toys
- hoses attached year round and laying in the grass (customer can't see water running out the end)
- some customers set up plastic timers and external hardware to control outdoor watering cycles
- 1/2" outdoor lines at 45-50psi can use upwards of 1300 litres per hour ($6.08 per hour!) It all depends what is on the end of their hose!

Swimming Pools

- Our GIS map shows 10 swimming pools
- I would encourage customers to call in when they fill for the season, several owners have talked about using a bulk water truck to fill (no sewage charges).
- the majority of swimming pools are manually filled and not controlled by any mechanical devices.

Irrigation

- 3/4” i.d and 7/8” o.d. or 1/2" i.d. and 5/8” o.d. water supply line or -1/4” i.d. and 3/8” o.d. water supply micro line (depends on yard size, sprinkler type and number of zones)
- the volume on these lines can often exceed more water than a single person uses in an entire month in just one hour of use.
- as the irrigation systems age cracks can occur, even lines can come apart
- 3/4" irrigation lines at 50psi can use upwards of 2000 litres per hour ($9.64 per hour!)
- 1/2" irrigation lines at 50psi can use upwards of 1300 litres per hour ($6.08 per hour!)
- Solenoid Valve

LEAK DETECTION

There are three areas a customer can look at for leak detection:

- Meter Reading (Take a photo and count how fast the numbers are progressing, start by shutting off outside taps and then toilets one by one)
  Meter Water Indicator (SR IIs have a red wheel and iPerls have the Circle with a Plus symbol)
- Waste Water Pipes that lead to the basement (makes a nice echo BUT only works on leaks from upstairs!)

SOLENOID VALVES

- The water is “live” or “open” to dishwashers, washing machines, humidifiers, etc.
- The solenoid valve opens and closes based on a timer or electrical signal from the controls.
- The solenoid valve can become stuck or damaged overtime with use, our water carries several minerals that can erode and/or build-up inside the valve.