| Table 1 – Description of Current Standards and Efficiency Options | | |
|---|---|---|
| **Product** | **Current Standard** | **Efficiency Option** |
| Toilet | 6 litres per flush (required by OBC) | 4.8 litres or less per flush (effective flush volume).<br><br>Called high-efficiency toilets (HETs). Can be either single-flush or dual-flush toilets. The "effective flush volume" is the rated flush volume of a single-flush toilet or the average of two reduced flushes plus one full flush for dual-flush toilets. Only HETs are eligible to be certified by the U.S. EPA's WaterSense water efficient product labeling program. WaterSense toilets must not only flush with 4.8L or less, they must meet a performance criteria beyond that required by the OBC, i.e., they must flush at least 350g of solid waste plus 4 balls of 6 sheets of toilet paper as per MaP testing[1]. A loading of 350g is considered to be the 99$^{th}$ percentile of loadings for people eating a normal diet. |
| Toilet | 6 litres per flush (required by OBC) | 3 litres per flush.<br><br>New advancements in technology have enabled a Canadian company to design a single-flush toilet that operates with only 3 litres of water. This WaterSense-approved toilet uses a patented design to "push" and "pull" waste from the toilet simultaneously using only gravity (i.e., the toilet is not pressure-assisted). This toilet represents the "best in class" fixture regarding water savings (i.e., it offers the highest level of water savings available in the marketplace). |
| Showerhead | 9.5 Lpm | 7.6 Lpm.<br><br>While it is possible to manufacturer showerheads with flow rates much less than 7.6 Lpm, there is obviously a relationship between flow rate and customer acceptance (performance). A study completed in 2007 at the University of Waterloo identified that, while the student volunteers in the study preferred showerheads with higher flow rates, they were also satisfied with showerheads flowing at only 7.6 Lpm. Since showerheads are relatively easy to remove and replace, homeowners that are not |

[1] MaP (or Maximum Performance) testing uses a very realistic test media consisting of extruded soybean paste to simulate human feces. The results of this testing are considered to be very indicative of "real world" toilet flushing performance and, therefore, a good indicator of consumer satisfaction.

| Table 1 – Description of Current Standards and Efficiency Options | | |
|---|---|---|
| **Product** | **Current Standard** | **Efficiency Option** |
| | | satisfied with ultra-low-flow showerheads may remove them and replace them with the much more common 9.5 Lpm models. The U.S. EPA's WaterSense requirement for showerheads is a flow rate of 7.6 Lpm. While this flow rate provides additional water savings, it is not sufficiently low as to expose the consumer to possible thermal shock or scalding[2]. |
| Kitchen Faucets / Aerators | 8.35 Lpm | 8.35 Lpm<br><br>No change to current standards are recommended for kitchen faucets and aerators as a large percentage of related water is used to fill pots, jugs, sinks, etc., and, therefore, this fixtures offers no significant additional water savings. |
| Bathroom Faucets / Aerators | 8.35 Lpm | 8.35 Lpm (if no hot water recirculation system is installed)<br><br>No change to current standards are recommended for bathroom faucets and aerators if the home is not constructed with a hot water recirculation system for 2 reasons:<br>1. studies have identified that consumers typically do not operate bathroom faucets at flow rates greater than about 4 Lpm (regardless of the maximum flow rate offered by the fixture), therefore, no additional water savings would be expected unless the maximum flow rate was reduced below 4 Lpm.<br>2. lower flow rates would simply result in longer wait times for hot water. |
| Bathroom Faucets / Aerators | 8.35 Lpm | 2.0 Lpm (if hot water recirculation system is installed)<br><br>In the U.S.A. the maximum flow rate for commercial faucets is 0.5 gallons per minute (1.9 Lpm). There is a widespread acceptance of this flow rate by end users. Since virtually all commercial facilities employ hot water recirculation systems, there is |

[2] The shower flow / pressure balancing values required in all new construction are not tested at extremely low flow rates and, therefore, there is some uncertainty regarding how well they will protect the end user against potential thermal shock or scalding if extremely low flow showerheads are installed.

| Table 1 – Description of Current Standards and Efficiency Options | | |
|---|---|---|
| **Product** | **Current Standard** | **Efficiency Option** |
| | | almost no wait times for hot water. Since there is very little "container filling" associated with bathroom faucets, a maximum flow rate of 1.9 Lpm should meet most consumer requirements as long as a hot water recirculation system is installed to prevent longer wait times for hot water. |
| Clothes washers | No Standard, but many top-loading models use 120 L or more to wash a full load | Water Factor <= 6.0<br><br>As of January 1, 2011 the U.S. EPA's Energy Star program will require clothes washers to have Water Factors of no more than 6.0. This means that washers cannot use more than 6.0 U.S. gallons (22.7 L) per cubic foot of capacity.<br><br>Competition in the marketplace has prompted many manufacturers to develop models with Water Factors as low as 3.0. There are currently more than 150 models of clothes washers with Water Factors of less than 5.0. |
| Dishwashers | No Standard, but many top-loading models use 30 L or more to wash a full load | Maximum Water Use = 19.7 L/cycle (standard size dishwasher – 8 or more place settings, equates to 5 gallons per cycle).<br><br>The maximum water use as per the 2007 Energy Star requirement is 19.7 L/cycle, although there are some models in the marketplace that can exceed this level of efficiency.<br><br>Dishwashers use very little water per cycle and they are used just an average of 4 times per week, so there is very little water savings associated with reducing water use further. |
| Humidifiers | No Standard, but many flow-through models waste 100 L or more to drain each day during the heating season. | 2 L/day to drain.<br><br>Not all new homes are fitted with whole-home, furnace-mount humidifiers, but when they are the builder tends to install flow-through models to avoid the potential health problems associated with standing water in reservoir-type units (e.g., drum or wicking models).<br><br>Unfortunately, these types of humidifiers tend to discharge far more water to the |

| Table 1 – Description of Current Standards and Efficiency Options | | |
|---|---|---|
| **Product** | **Current Standard** | **Efficiency Option** |
| | | drain than is evaporated to the air in the home.<br><br>At least one model of whole-home, furnace-mount humidifiers (Desert Springs rotary disc model) avoids the issues associated with standing water while discharging only about 2 litres of water per day to drain. What's more, this model of humidifier does not require replacement of media (most flow-through models require replacement of media at least once per heating season at a cost of between $10 and $20 per replacement). |
| Hot Water Recirculation Systems | No Standard at this time. | Water is typically wasted as home owners "wait" for hot water to arrive at their showerhead or bathroom lavatory sink. Most people turn on the shower, and then wait until the water reaches the desired temperature before beginning bathing. While the water leaving the water heater (either tank or on-demand) is hot, as it travels through the piping to the shower stall it pushes the ambient temperature water in the line ahead of it and out the showerhead and down the drain. It must also heat the water supply piping, meaning that even the initial "hot water" from the heater is no longer hot when it arrives at the shower and it too is wasted down the drain.<br><br>A new system employs a small pump that recirculates the ambient temperature water in the piping *back to the water heater vs. down the drain*. With this method, virtually no water is wasted waiting for hot water to arrive at the fixture. The pump is activated by a switch that is operated by the homeowner just prior to them taking a shower. The pump only operates for a minute or so, just long enough to bring the hot water to the fixture. There are two types of systems, one system requires a dedicated return line for the recirculated water while the other system recirculates the ambient temperature water back to the water heater via the cold water lines in the home. This latter type of system uses a sensor located at the fixture to turn the pump off as soon as a temperature increase is "sensed" at the fixture (thus the water in the cold water line remains at ambient temperature). |
| Rainwater Harvesting | No Standard but savings is dependent upon frequency and intensity of rainfall | Rainwater can be used for irrigation, laundry, and toilet flushing. In Ontario, rainwater harvesting is largely confined to the approximately two-thirds of the year where freezing does not occur. Rainwater storage systems must be large enough to take advantage of rainfall during major events (e.g., precipitation of greater than |

| Table 1 – Description of Current Standards and Efficiency Options | | |
|---|---|---|
| **Product** | **Current Standard** | **Efficiency Option** |
| | events, and size of storage tanks. | 25mm per day). While rainbarrels are generally considered too small to be effective for rainwater harvesting, cisterns (which can hold 1,000 litres of water or more) could be used to meet a significant portion of a home's water needs. |
| Greywater Reuse | No Standard but average home produces approximately 270 L/day based on water from both the clothes washer and showers. | Greywater can be used for irrigation, laundry, and toilet flushing. In Ontario, the use of greywater is limited to toilet flushing. |
| Xeriscaping – water efficient landscaping | Landscapes are typically sodded (e.g., with Kentucky Bluegrass). Occasionally small flower beds are included. | Landscapes should be non-water-intensive. This could involve use of drought resistant turfgrasses, hardscapes (such as decks or patios), natural or native species landscapes, and more, etc. |