

Water Efficiency Recommendations

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Green Infrastructure

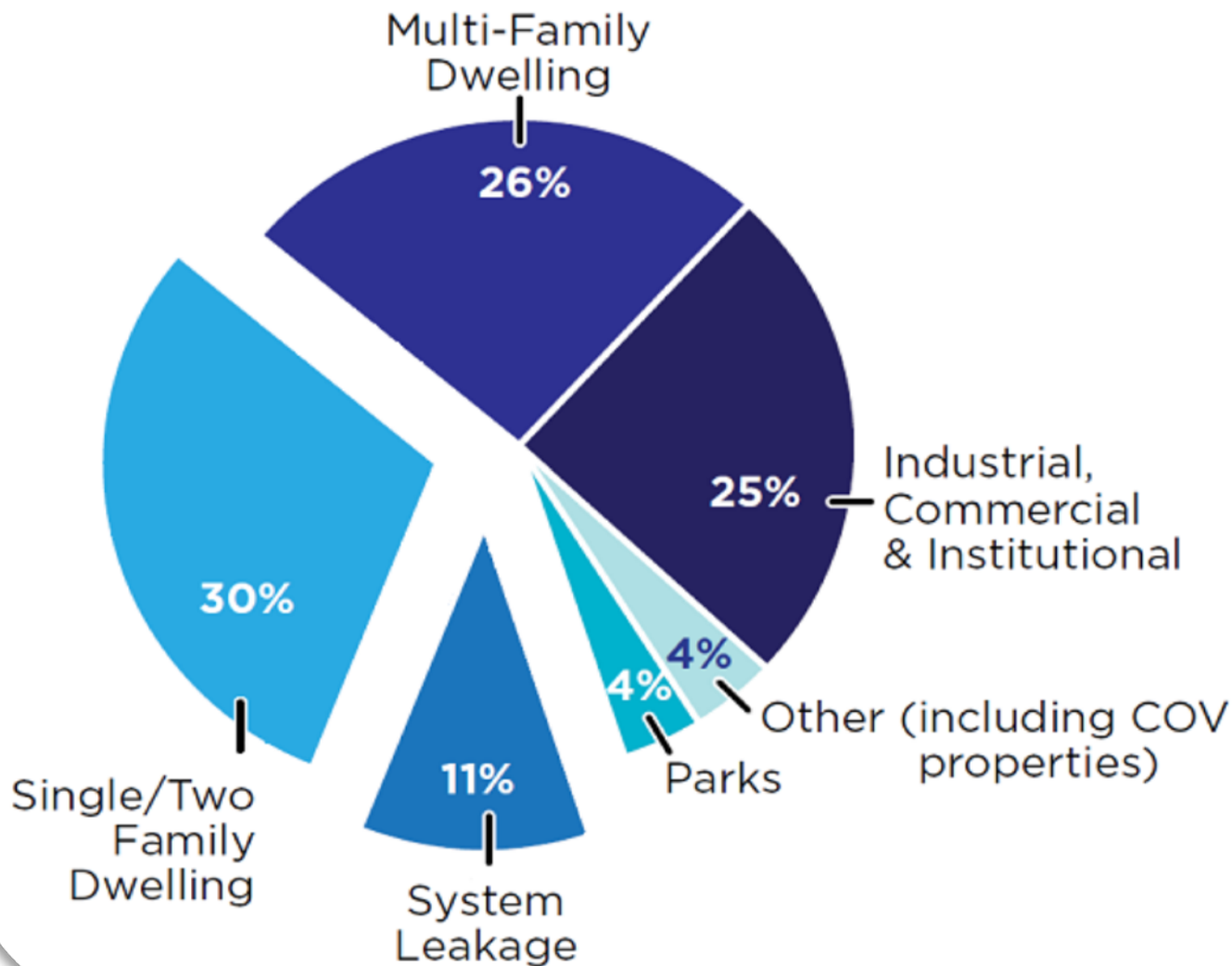
April 12, 2017



Outline

1. Program achievements 2012 to 2016
2. Proposals for Council Consideration
 - Prohibiting Wasteful Uses/Fixtures
 - Amendments to the Waterworks By-law
 - Alignment with the 2015 National Plumbing Code
 - Amendments to the Vancouver Building By-law
3. Look ahead to close the gap

Vancouver Water Usage by Sector



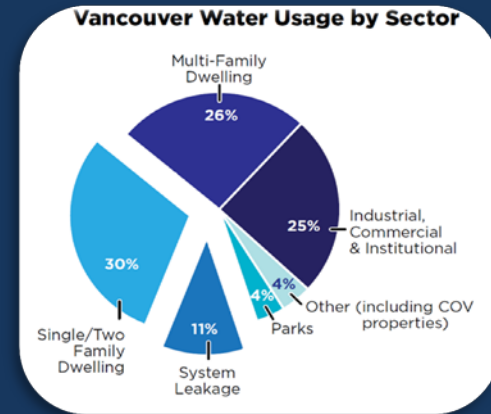
CLEAN WATER – Conservation Target

Reduce per capita water consumption by 33% from 2006.

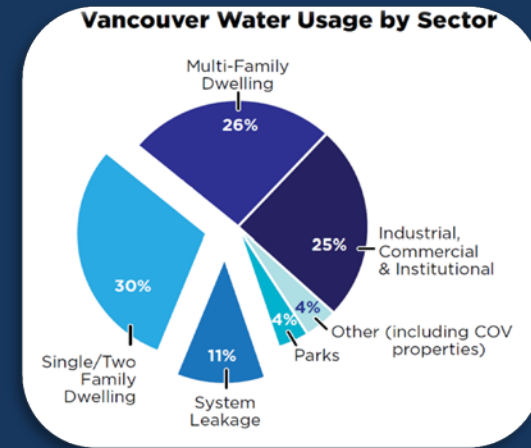
PROGRESS TO DATE : 17% Reduction

Residential Sector

- ✓ Implemented mandatory metering of new SF/DF residences and seasonal pricing for all metered customers
- ✓ Various educational and outreach programs
 - New waterwise website
 - School plays & workshops
 - Green plumber Training
 - Waterwise Garden workshops
- ✓ Rain barrel truckload sales
- ✓ Lawn Sprinkling Patrols & Enforcement
 - Irrigation Ambassadors
- ✓ Rebate & retrofit programs
 - Green Landlord toilet retrofit
 - Toilet & showerhead retrofits in 12 City-owned multi-family rental buildings
 - Laundry machine rebate program with BC Hydro



CLEAN WATER – Conservation Target

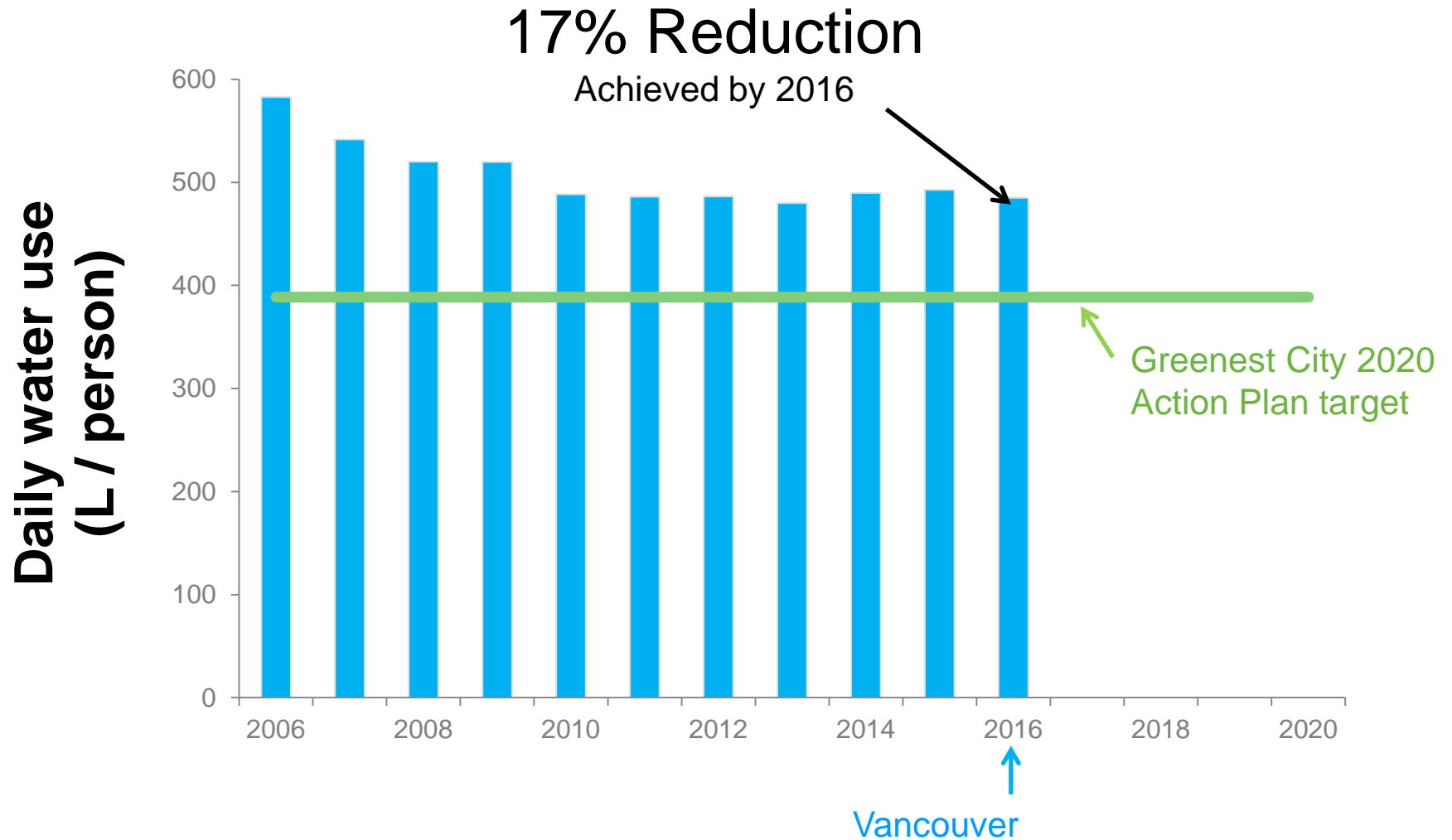


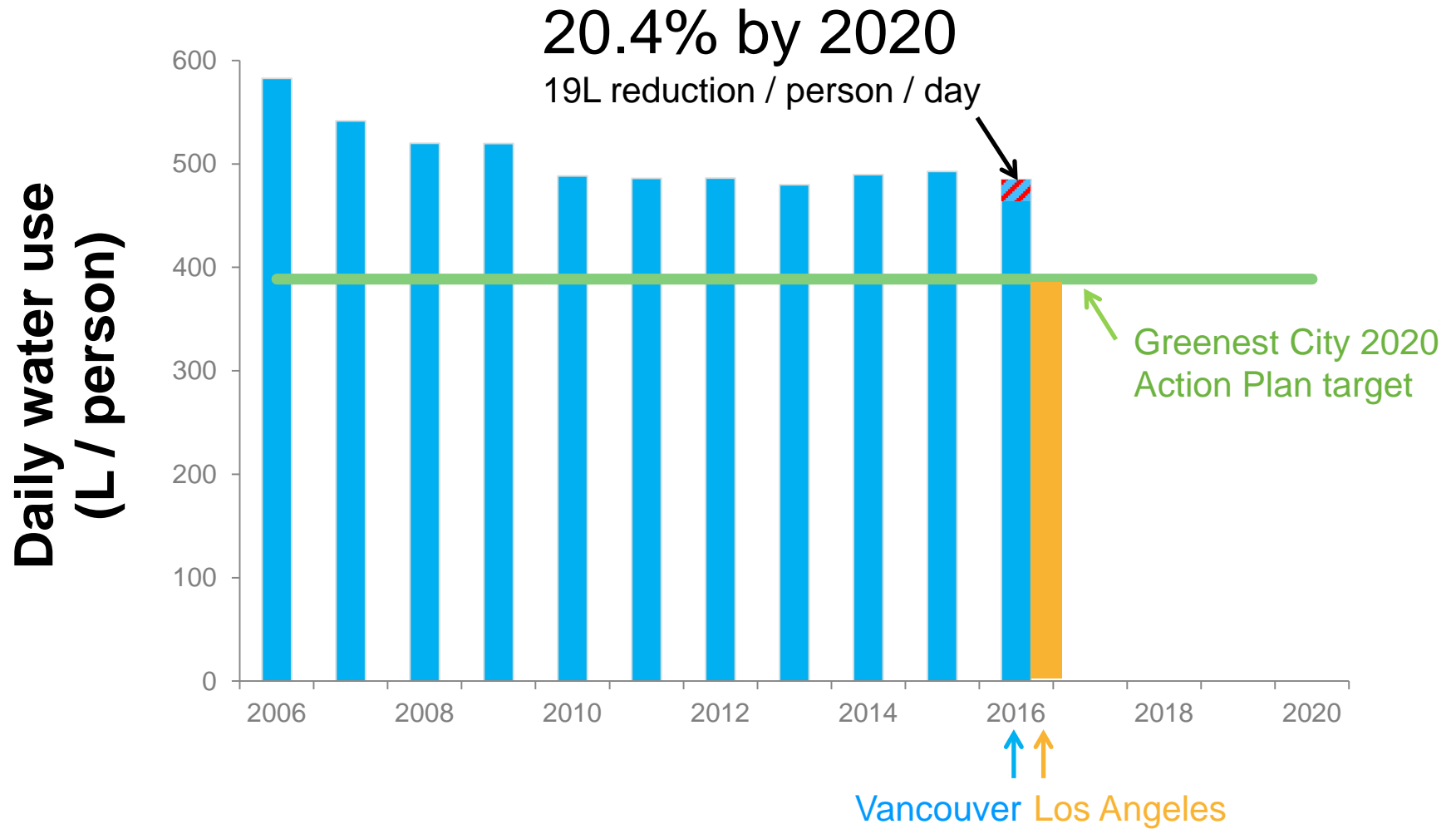
Industrial, Commercial, Institutional Sectors

- ✓ Restaurant Pre-rinse spray valve retrofits and audits (500+)
- ✓ Water audits & fixture retrofits (Healthcare Facilities)
- ✓ Once through cooling systems
 - Prevalence Study & Phase Out Strategy Development (consultant)
- ✓ Working with emerging industries (such as breweries) to develop BMPs

Civic Uses

- ✓ Advanced leak detection of the water system, accelerated leak repairs
- ✓ Adopt 33% Corporate reduction target, Green Operations
- ✓ Developed Corporate Water Reduction Plan
- ✓ Innovative Projects (Parks, Greenest City Scholar, Alternate Sources)





Waterworks By-law Amendments

I couldn't believe once through cooling was still legal.

Joe Weiss

Director of Engineering,
Hyatt Regency Vancouver

President,
Vancouver Tourism Facility Managers Association



Ban ‘Single Pass Systems’

“**Single pass**” system: Cold drinking water runs through commercial equipment in a single pass and is then discharged to the sewer.

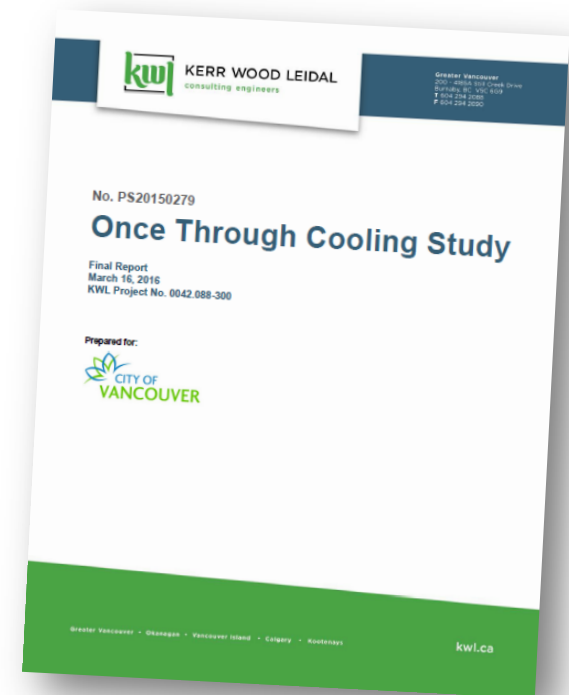
- Examples include commercial air conditioners, coolers, ice machines, and liquid ring vacuum pumps
- Estimated water savings and sewer load reduction (by January 1, 2020):
 - 3.9 billion litres per year OR 3% total consumption
- Phased implementation:
 - Phase 1: prohibit new installations as of by-law enactment
 - Phase 2: require disconnection of existing units by January 1, 2020
 - Time-limited permitting process for emergency OTC systems

Banning other wasteful practices

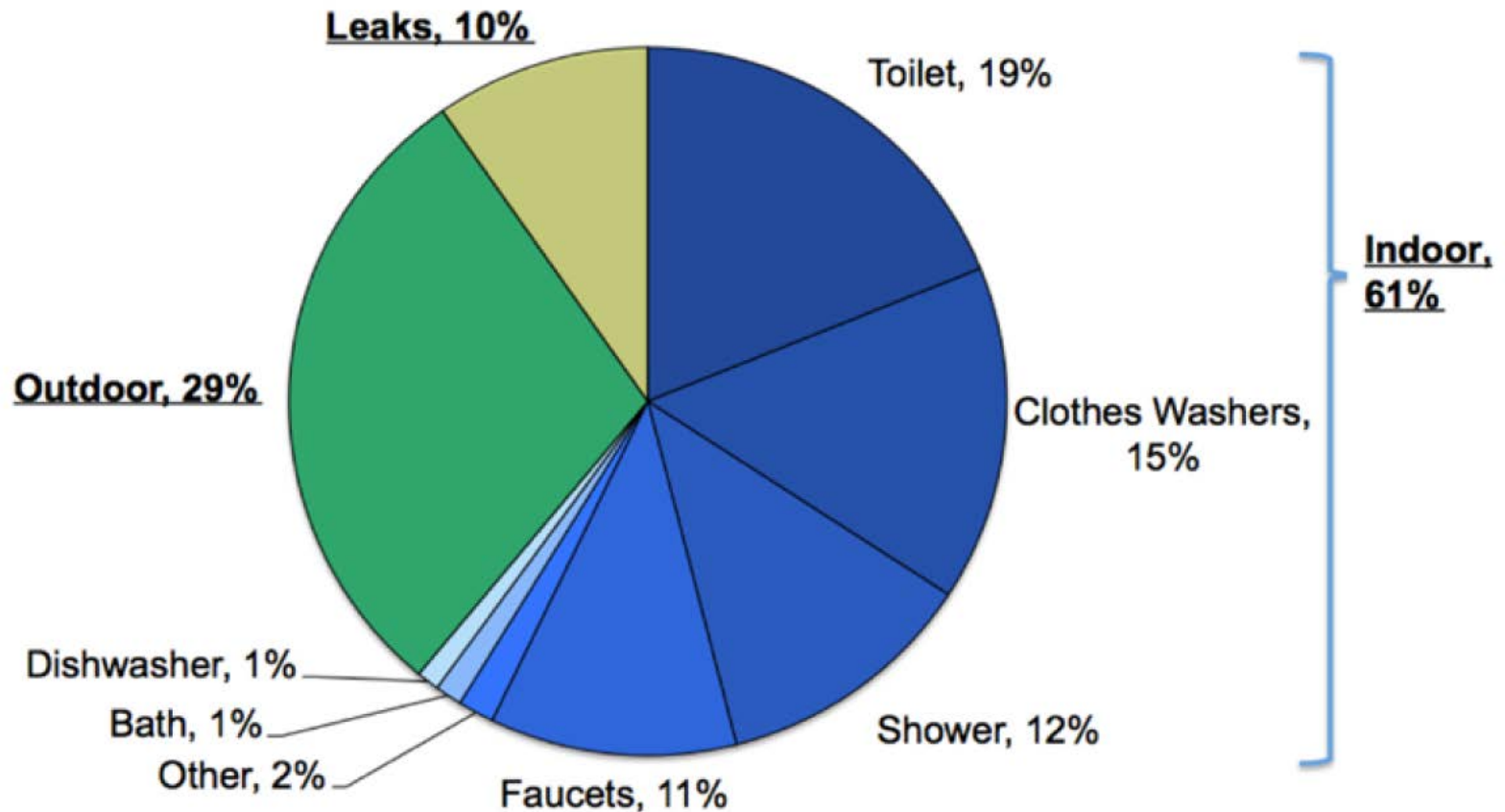
- Rooftop cooling
- Thawing/Freeze Protection

Balances affordability with tactics to achieving Council's GCAP 2020 targets.

- 2016 Prevalence Study quantified overall water use
- Alternative, less water intensive technologies readily available with agreeable payback periods
- Widely supported through consultation
- Aligns with other jurisdictions



Vancouver Building By-law Amendments



Source: B.D. Inskeep & S.Z. Attari "The Water Short List: The Most Effective Actions U.S. Households Can Take to Curb Water Use" *Environment: Science and Policy for Sustainable Development* (July-Aug 2014).

Alignment to 2015 National Plumbing Code

- Not retroactive, applicable for new construction and renovations
- Recommendations
 - Fixture flow limits to align with the 2015 National Plumbing Code:
 - Toilets, Shower heads, Lavatory faucets
 - ADDS:
 - Automated Car/vehicle washes to recycle at least 60% of water
 - Require a pressure reducing valve for certain landscape irrigation systems
 - Prohibit pesticide and other chemical injection via residential irrigation systems
- Estimated savings (by January 1, 2021):
 - 570 million litres per year
 - 2,600 tonnes GHGs per year
 - Savings will increase through attrition

- 2015: Consultation begins. Greenest City External Advisory Committee Meetings
- 2015: Engineering consulting firm retained to examine single pass systems
- August 2016: Public engagement letter summarizing proposals:
 - Sent to > 150 industry associations, utilities, consultants, contractors, manufacturers, wholesalers, suppliers, property managers and others.
 - Further distributed by associations to their members and other groups.
 - Shared with Corporate Communications and 311 Operations.
- September 2016 – February 2017: Continued outreach and follow-up:
 - Presentations, meetings and open house.
 - Staff follow-up with each respondent.
 - Proposals revised based on feedback.

Staff recommend A thru E :

Approve the amendments to the Water Works By-law, to expand the prohibition of non-recirculating uses of drinking water, including certain commercial air conditioners, coolers, ice machines, and liquid ring vacuum pumps, in support of the Greenest City Action Plan,

Approve the amendments to the Vancouver Building By-law to enhance water efficiency requirements pertaining to plumbing fixtures and equipment in support of the Greenest City Action Plan and to create consistency with the 2015 National Plumbing Code

Direct staff to review opportunities to further strengthen performance requirements beyond the 2015 National Plumbing Code for commercial and household fixtures and appliances to support improved water efficiency and receiving water quality, considering full life cycle costs.