The Red River Basin Commission

SHAPING THE BASIN'S FUTURE TOGETHER

City of Winnipeg
Water Conservation:
What Have We Learned?

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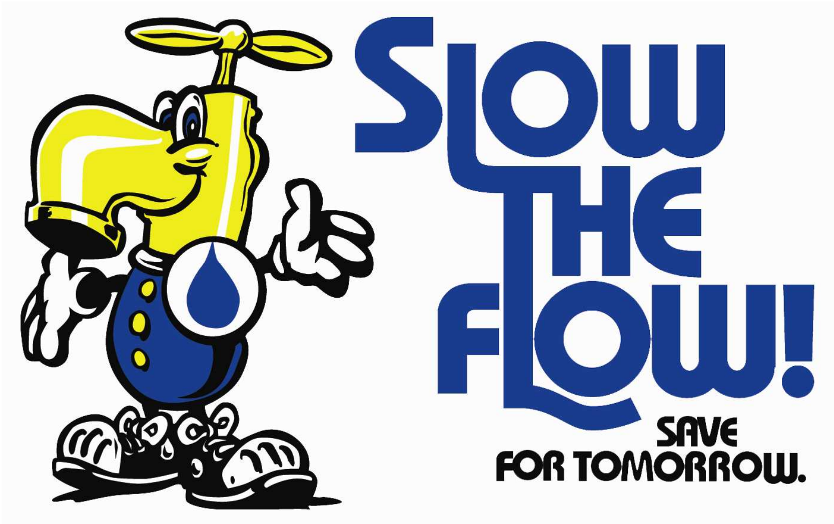
Water and Waste Department
City of Winnipeg

Winnipeg

Mission Statement



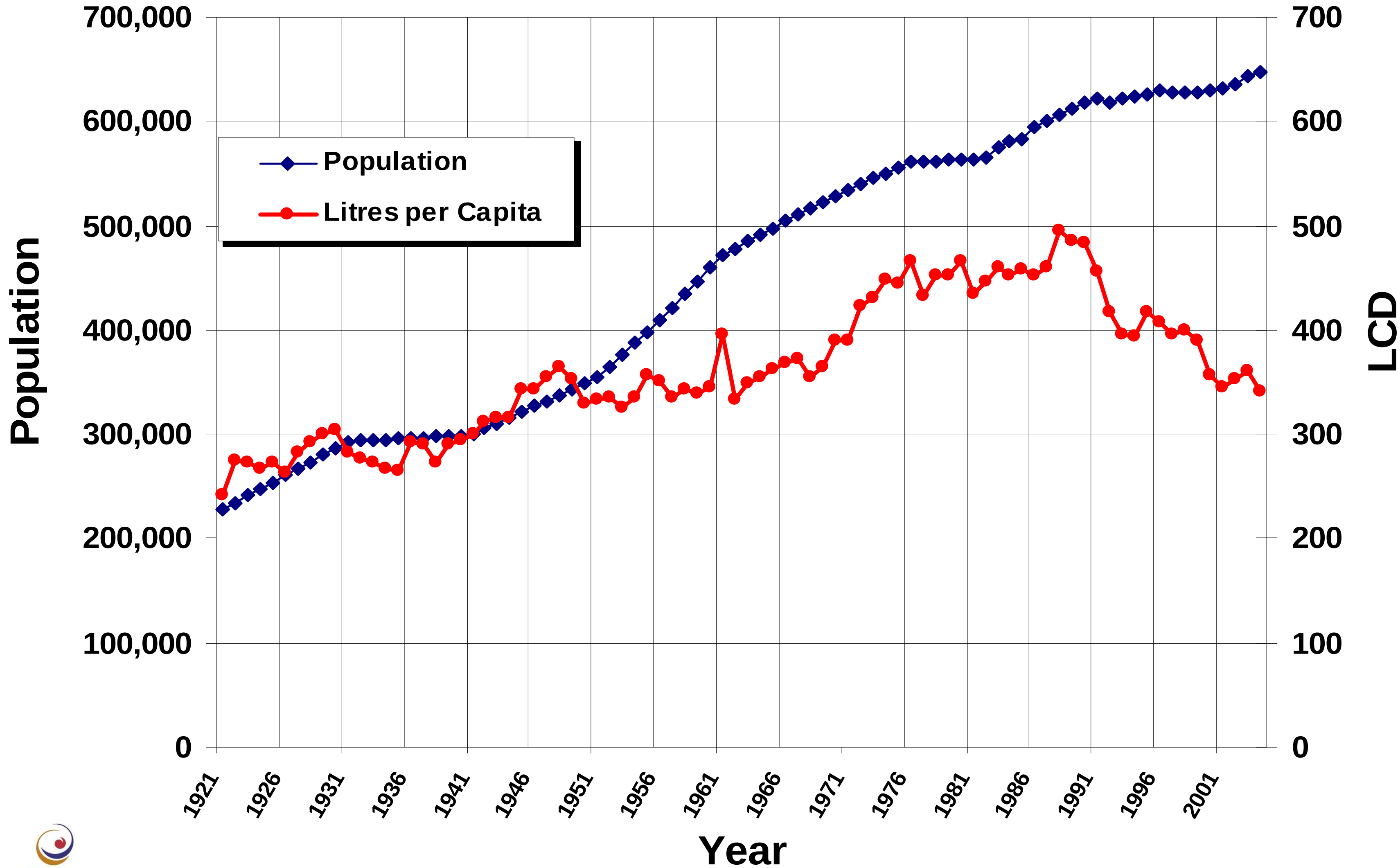
“To increase water use efficiency in Winnipeg without negatively impacting the quality of life enjoyed by Winnipeggers, and to defer expansions to the water supply system.”

Goals

The main goals of the water conservation program are:

- To maintain water demand within the aqueduct capacity, hence avoiding the need to find a new water source
- Provide long-term water conservation solutions, and avoid the "quick-fix" solutions that offer short-term success
- Create a program that achieves sustained awareness of the value of water and defer any water shortage crisis

Winnipeg Historical Water Demand



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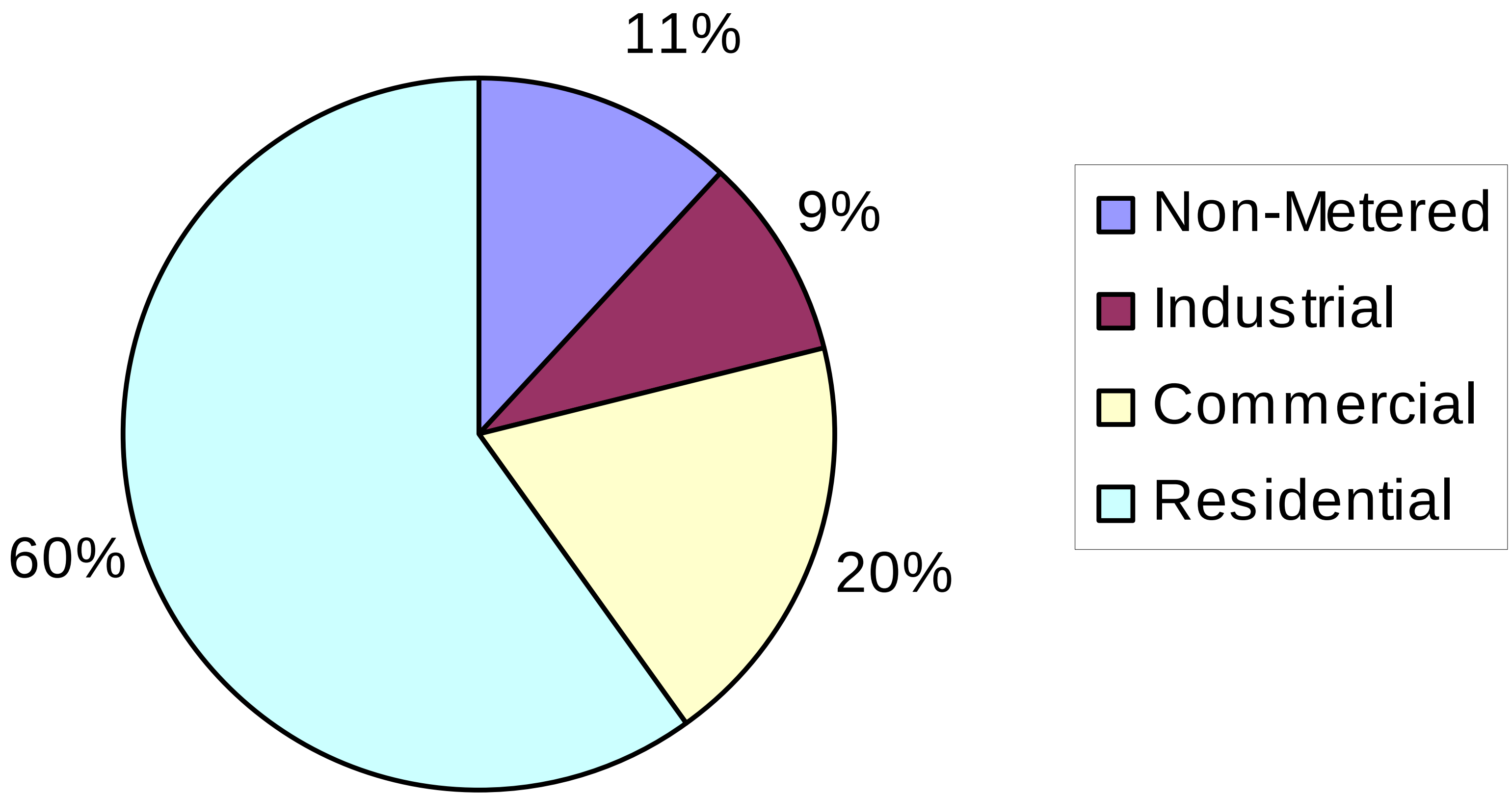
City of Winnipeg - Water Useage by User Group (2007)



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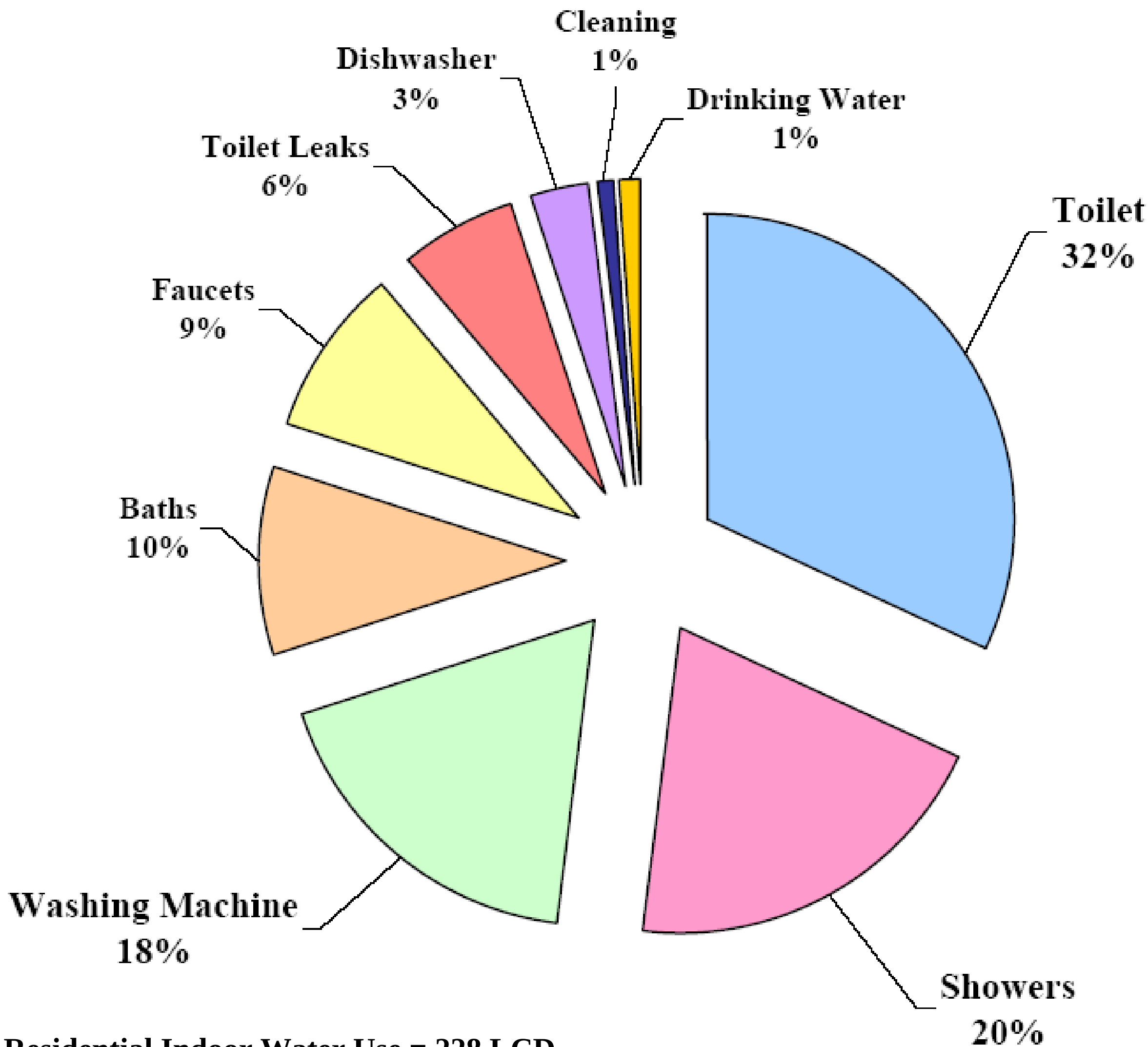
Residential Indoor Water Use



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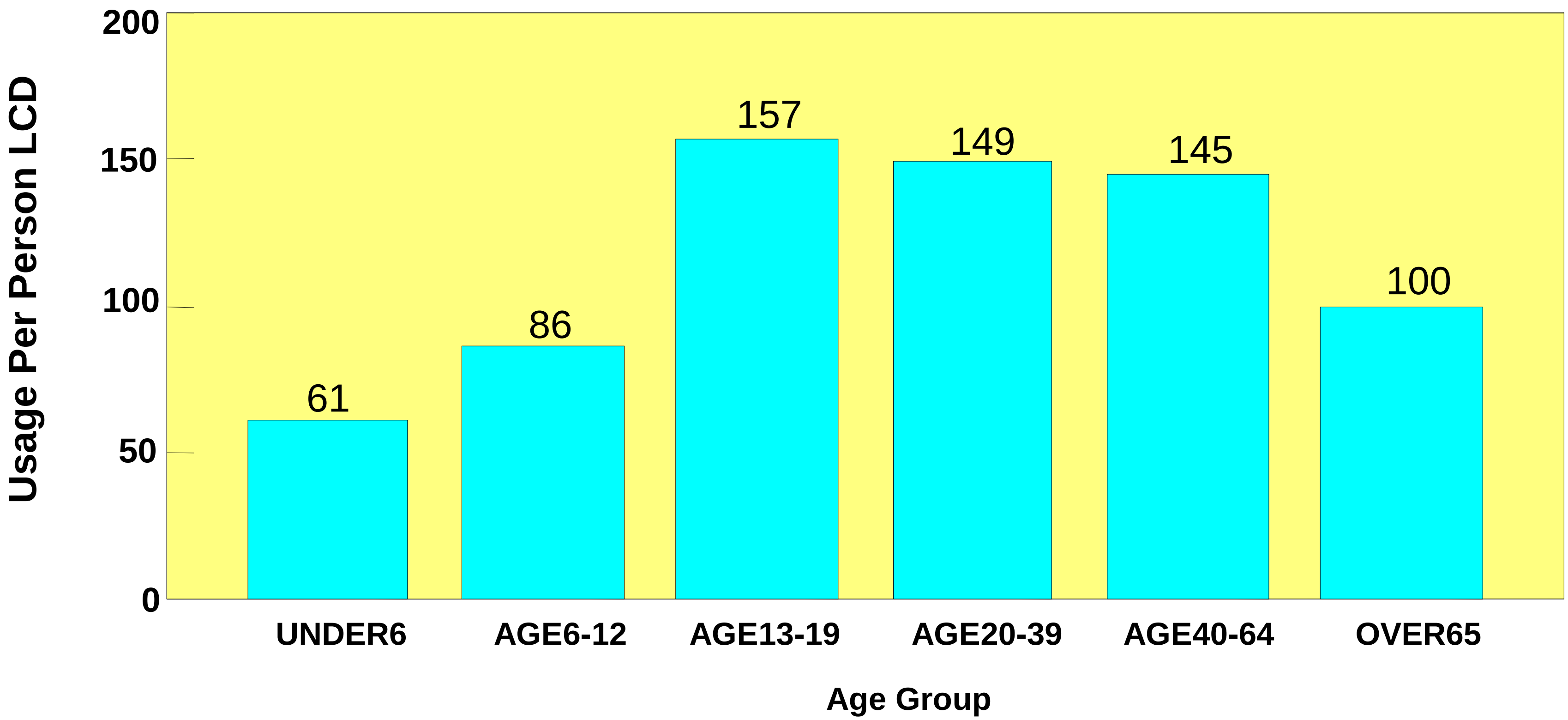
Residential Indoor Water Use = 228 LCD

Source: Wardrop/Tetr*ES*, 1992

Usage per Person in Age Group



Base Usage Per House=221 L/H/D

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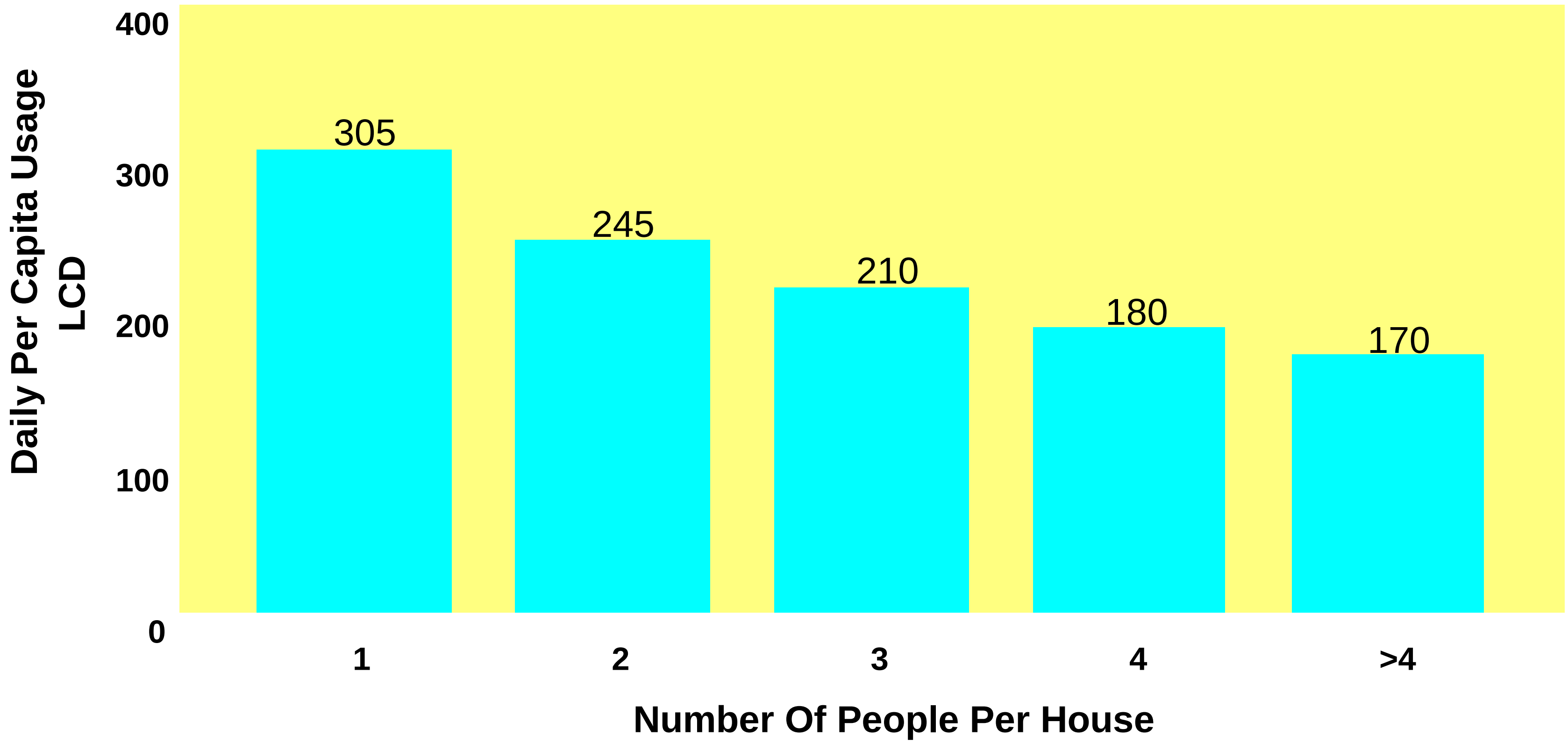
Per Capita Usage with Varying People



What Does This Mean?

	1989	2007
Litres per Capita per Day	486.1 LCD	333.9 LCD
Non-Metered Water	19.7%	11.5%
Residential Indoor Water Consumption	228 LCD	<200 LCD

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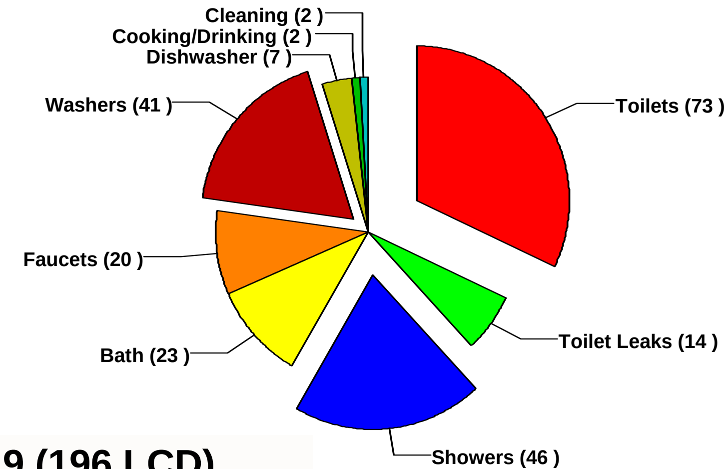
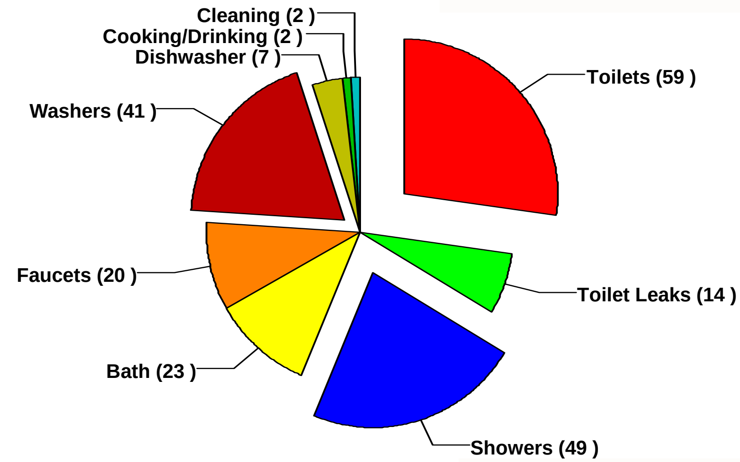
Residential Indoor Water Use

Effects of Technology Change

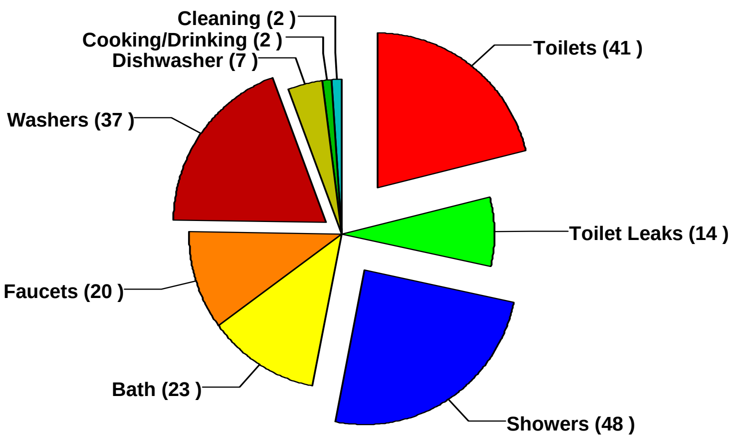
1992 (228 LCD)



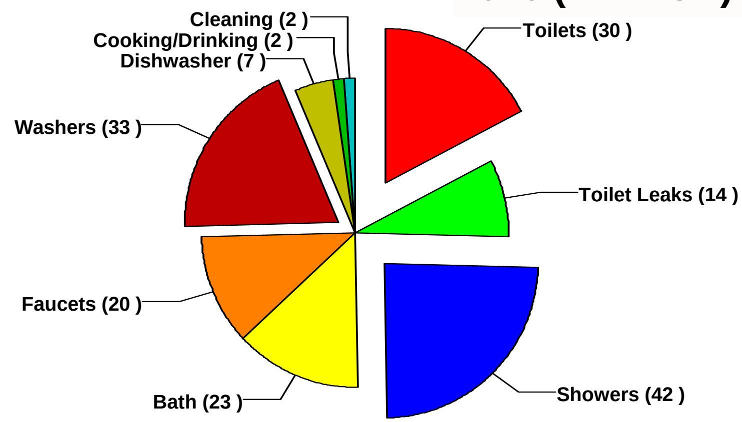
2004 (217 LCD)



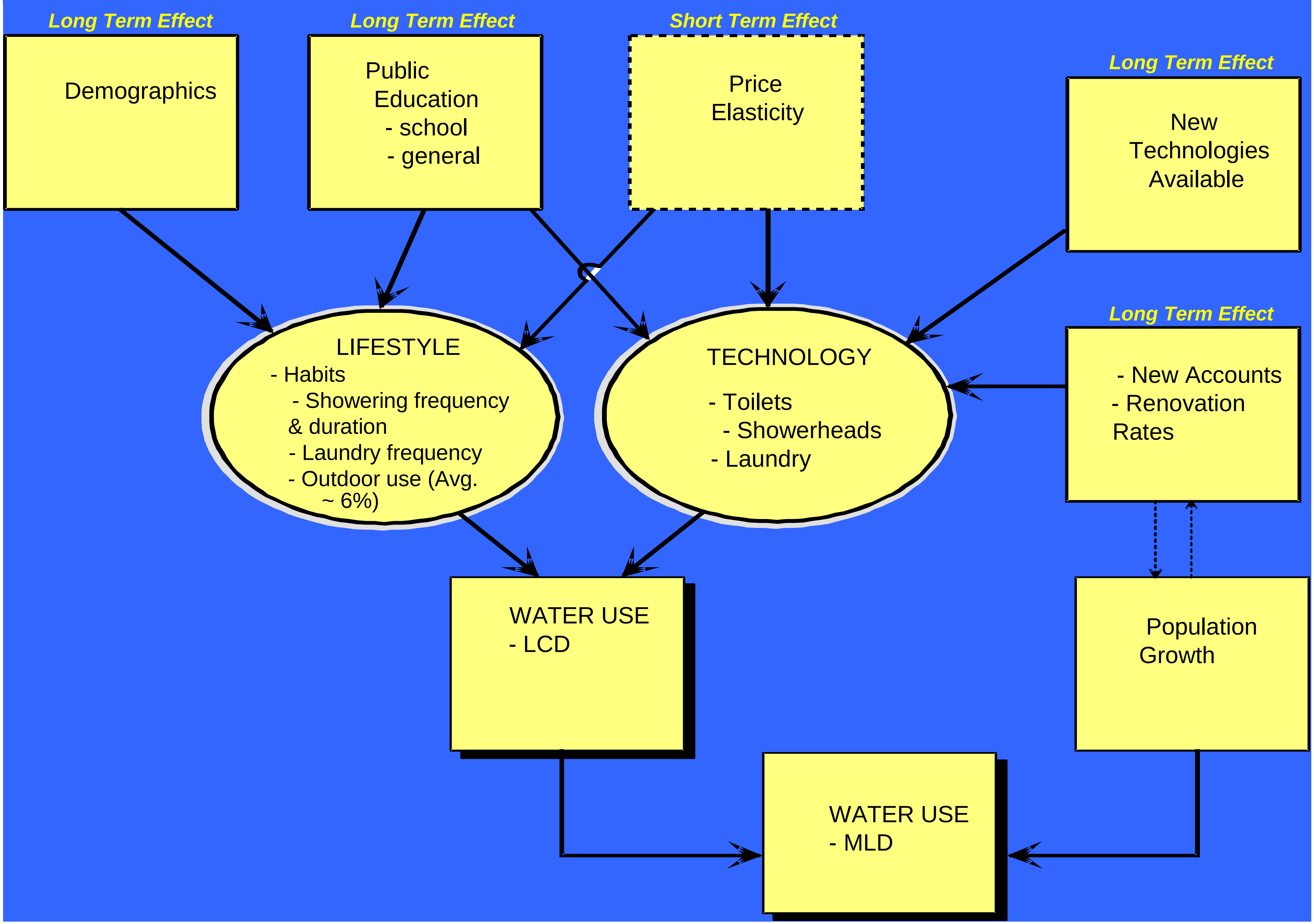
2019 (196 LCD)



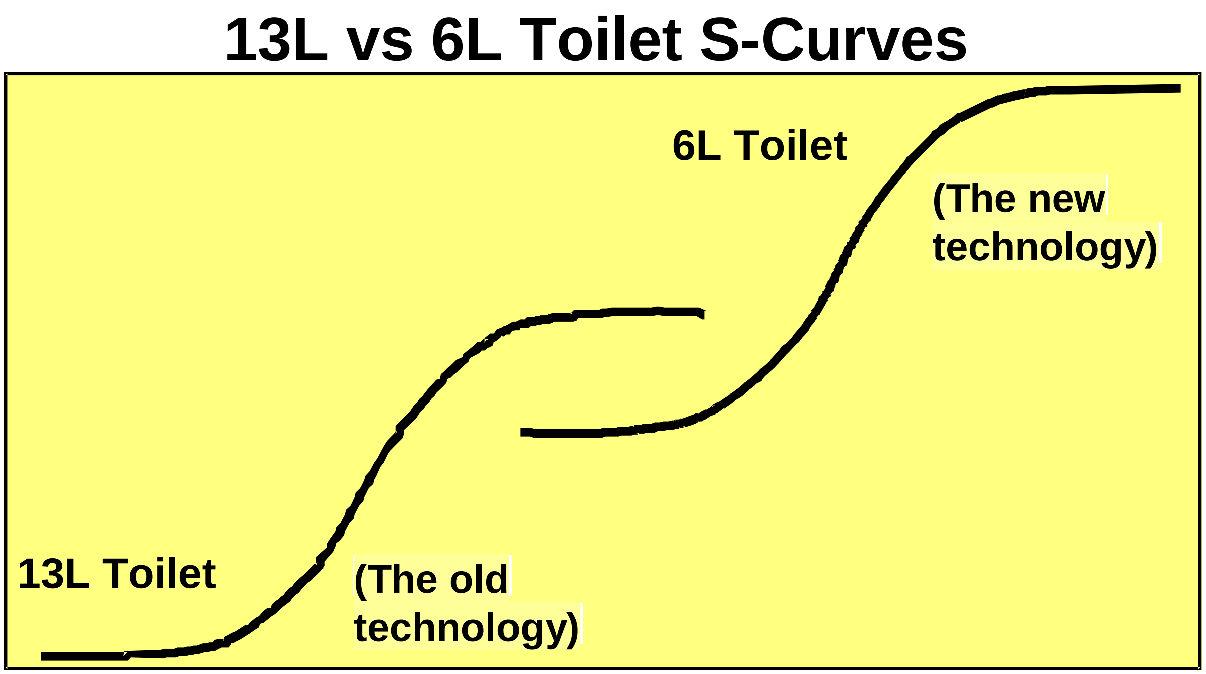
2046 (174 LCD)



Factors Affecting Residential Water Use Projections



Market Change due to Technology Acceptance



Overlapping S-Curves of 13L and 6L toilets (c)

Source: Harry S. Dent Jr.
The Great Boom Ahead
1993

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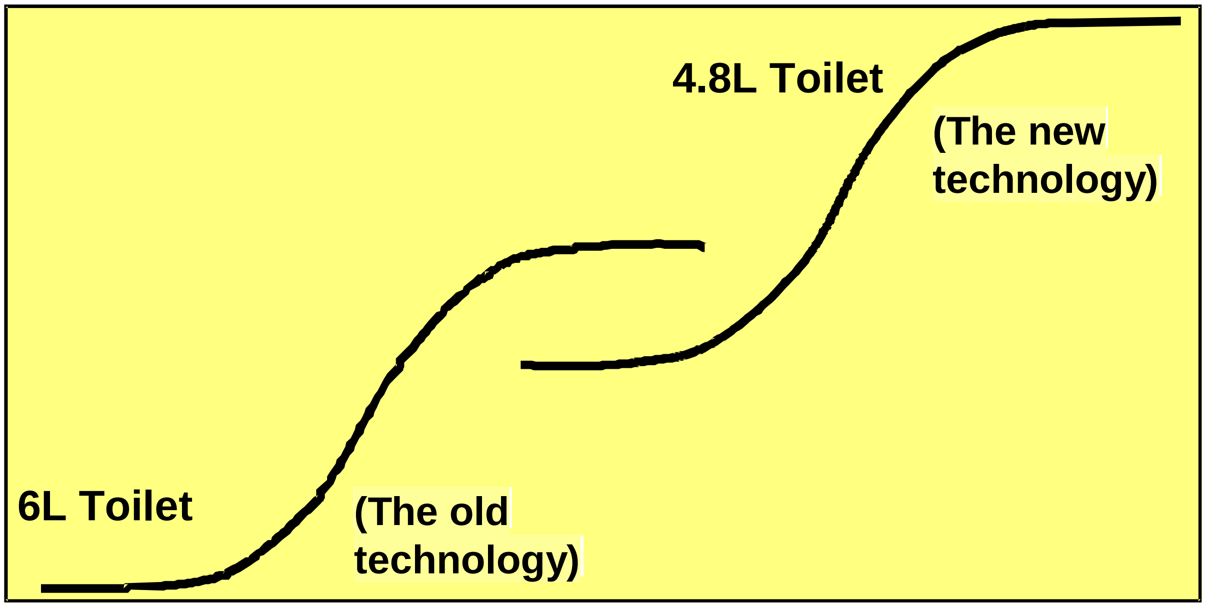
Market Change due to Technology Acceptance

6L vs 4.8L Toilet S-Curves



Overlapping S-Curves of 6L and 4.8L toilets (c)

Source: Harry S. Dent Jr.
The Great Boom Ahead
1993

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Estimated Toilet Sales By Type In Winnipeg (2005)

Winnipeg, Man

	Toilets			
	All Types	13L	6L	Dual Flush
Renovation				
Wholesalers	12,470	1,871	8,729	1,871
est. %age [1]	67%	15%	70%	15%
Retailers	6,142	1,535	3,992	614
est. %age [1]	33%	25%	65%	10%
Est. Total Toilets Sold [2]	**18,612**	**3,406**	**12,721**	**2,485**
Est. %age	**100.0%**	**18.3%**	**68.4%**	**13.4%**
New Construction				
Wholesalers	4,628	694	3,240	694
est. %age [1]	67%	15%	70%	15%
Retailers	2,280	570	1,482	228
est. %age [1]	33%	25%	65%	10%
Est. Total Toilets Sold [2]	**6,908**	**1,264**	**4,722**	**922**
Est. %age	**100.0%**	**18.3%**	**68.4%**	**13.4%**
Combined Total Sold	**25,520**	**4,670**	**17,443**	**3,407**
Est. %age	**100.0%**	**18.3%**	**68.4%**	**13.4%**

[1] industry experts report that approximately 67% of toilets are sold through wholesalers

[2] *Canadian New Construction and Residential Remodeling Reports (2005)*, National Association of Homebuilders Research Center, U.S.; Private Dwellings in Canada (2006 Census); Housing Starts (2005 CMHC)

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Estimated Market Shares of National/ Provincial Total Volume Sales by Type (2005)

LOCATION	All Toilets	13L	6L	Dual Flush
British Columbia	216,070	30,674	175,815	9,581
% of Provincial Total	100%	14.20%	81.40%	4.40%
Alberta	201,299	29,863	151,930	19,506
% of Provincial Total	100%	14.80%	75.50%	9.70%
Saskatchewan	39,470	11,067	26,288	2,116
% of Provincial Total	100%	28.00%	66.60%	5.40%
Manitoba	**46,592**	**11,648**	**28,724**	**6,220**
% of Provincial Total	**100%**	**25.00%**	**61.70%**	**13.40%**
Ontario	553,811	73,056	436,616	44,139
% of Provincial Total	100%	13.20%	78.80%	8.00%
Quebec	374,349	163,978	204,119	6,252
% of Provincial Total	100%	43.80%	54.50%	1.70%
New Brunswick	33,473	19,652	12,924	897
% of Provincial Total	100%	58.70%	38.60%	2.70%
Nova Scotia	42,148	28,808	12,918	421
% of Provincial Total	100%	68.40%	30.70%	1.00%
Prince Edward Island	6,635	5,321	985	328
% of Provincial Total	100%	80.20%	14.90%	5.00%
Newfoundland	22,965	16,219	5,867	879
% of Provincial Total	100%	70.60%	25.50%	3.80%
Canada	**1,536,813**	**390,288**	**1,056,186**	**90,339**
% of National Total	**100%**	**25.40%**	**68.70%**	**5.90%**

Source: Canadian New Construction and Residential Remodeling Reports (2005), National Association of Home Builders Research Center, U.S.; Private Dwellings in Canada (2006 Census); Housing Starts (2005 CMHC); respondent estimates

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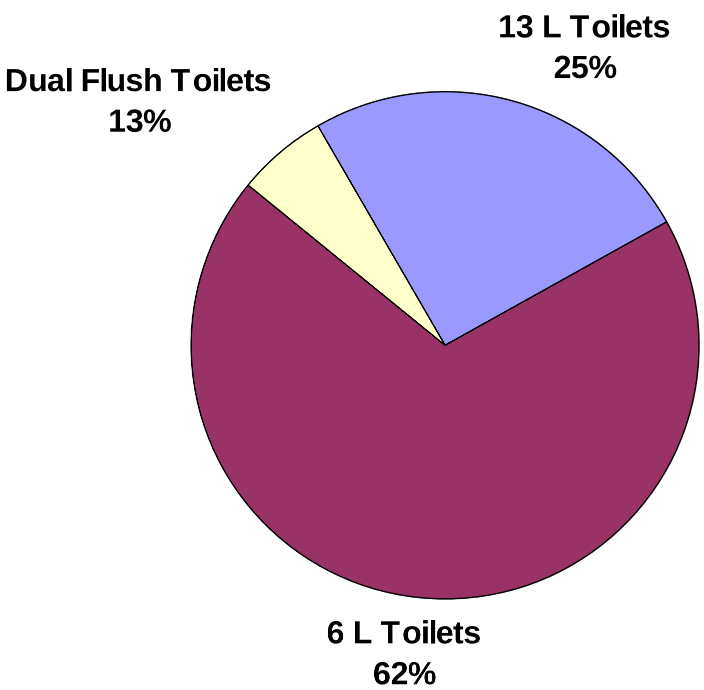
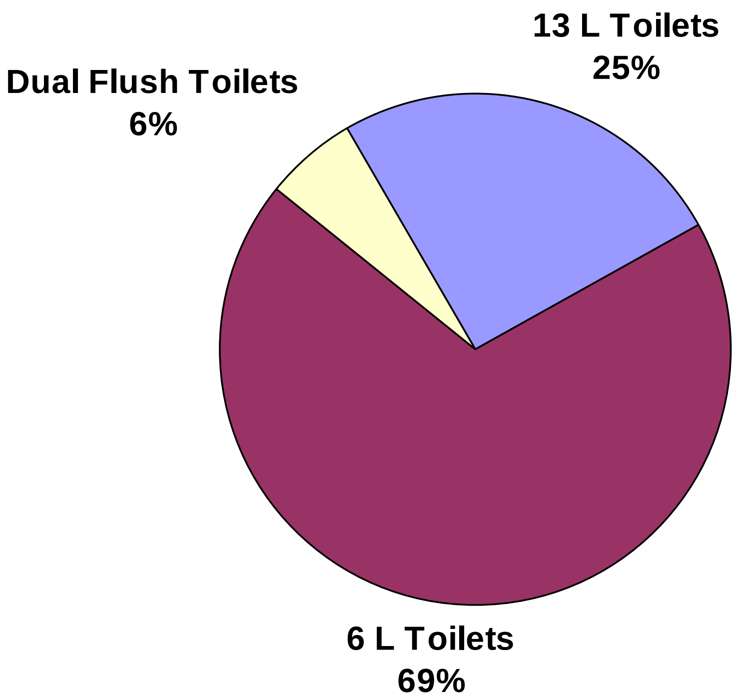
Manitoba vs. Canadian Nation Average Toilet Sales By Type (2005)

Manitoba



Canada



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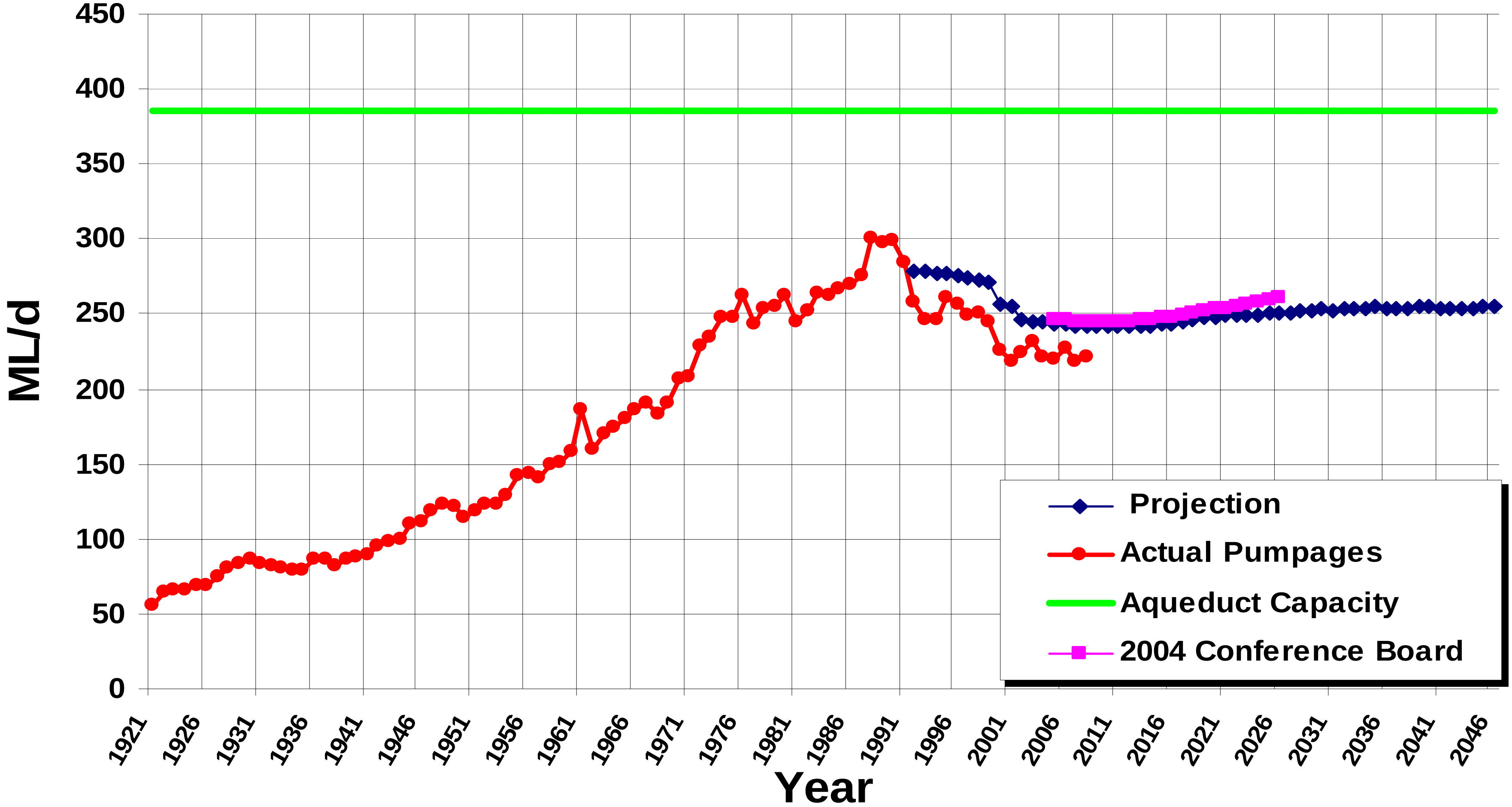
What Does This Mean?

- The toilet accounts for more than 1/3 of the water used in residential homes.
- 6L toilets are still the most popular selling toilets in Manitoba.
- Proposed changes to the Manitoba Building Code should help lower the sales of the 13L toilets by mandating the use of 6L flushing toilets or better in new home construction.
- Manitoba has the highest percentage of dual flush toilet sales in the country at 18.4 %. Alberta is second at 9.7%.
- Dual flush technology toilets will increase their share of the market.

What Does This Mean?

- Residential, Commercial and Industrial customers are using less water today than in 1990
- The trend is toward more water efficient fixtures
- Proposed expansion for supplemental water source has been deferred
- Water treatment plant capacity has been reduced
- Expansion of in-town reservoirs have been deferred

Water Demand Projections



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Thank-You

Acknowledgement: Paul Bortoluzzi, CET.

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