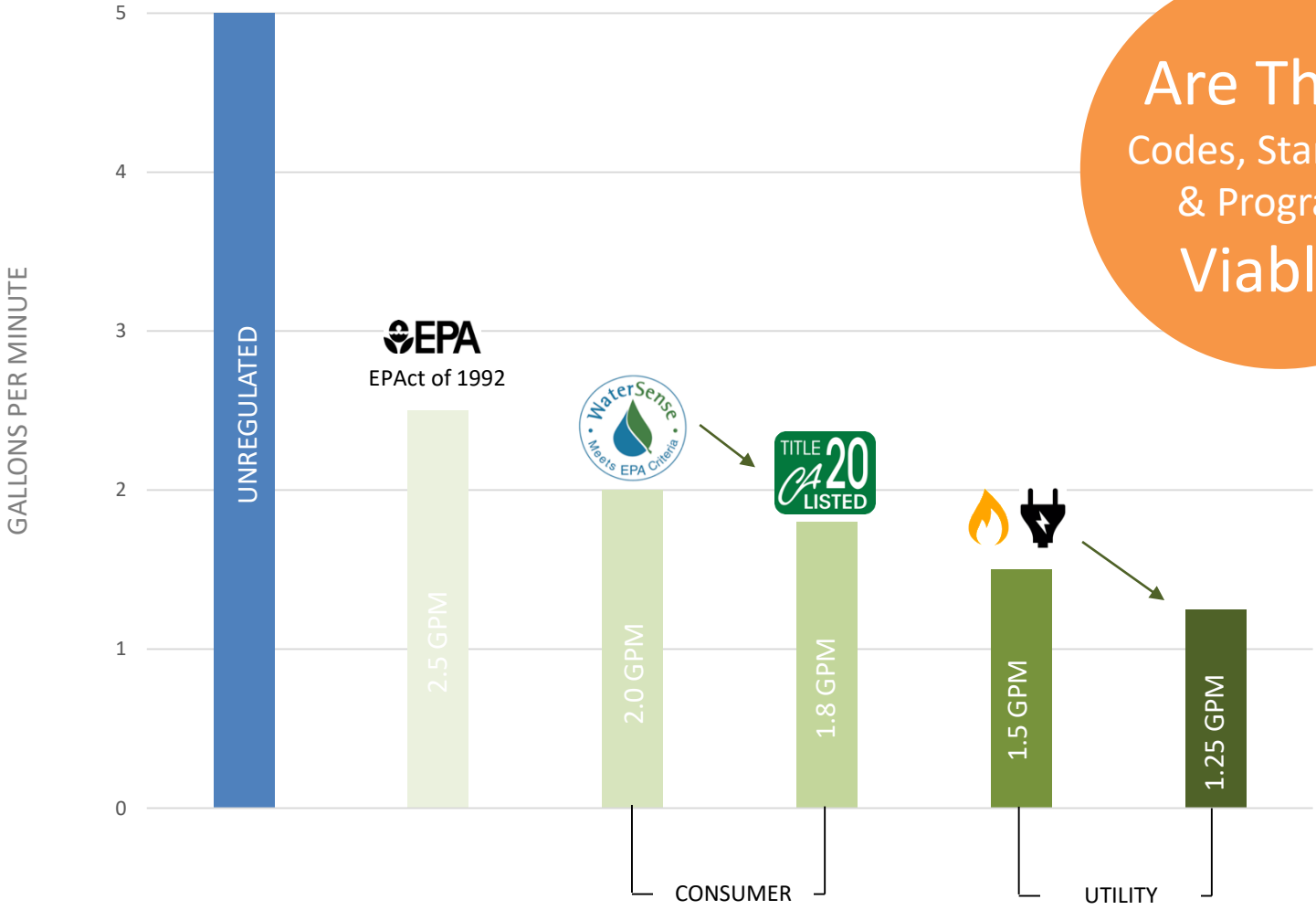


evolve™
TECHNOLOGIES

How Low Can We Go
With Showerhead Flow
In Existing Buildings?

Showerhead Flow Trends – Now Sub 2.0 In All Markets

Consumer market is rapidly moving to 1.8 gpm while conservation/weatherization programs consider targeting 1.25 gpm.

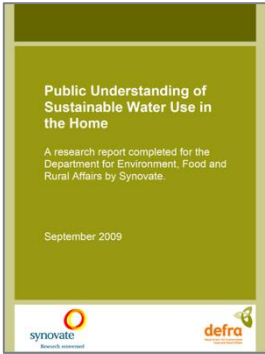


Are These Codes, Standards & Programs Viable?

Most Consumers Don't Want Low Flow Shower Heads



Sponsored ⓘ
Shower Head - Rainfall High Pressure 6" - Rain High Flow Fixed Luxury Chrome Showerhead - Removable Water Restrictor - Adjustable Metal Swivel Ball Joint - For the Best Relaxation and Spa
 by SomovWorld
\$29⁹⁹ ✓prime
 Get it by **Tomorrow, Mar 17**
 FREE Shipping on eligible orders
 ★★★★★ 1,392



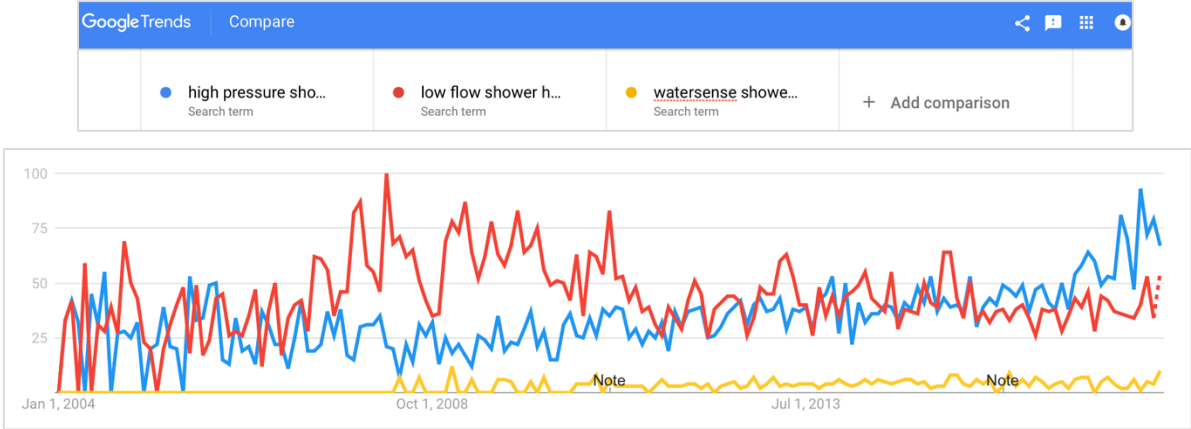
POWER SHOWERS

“Power showers are what most participants aspire to owning. When it comes to showers a powerful water flow is important, many participants do not like what they describe as “a trickle / dribble”, they want it to be hot and powerful.”

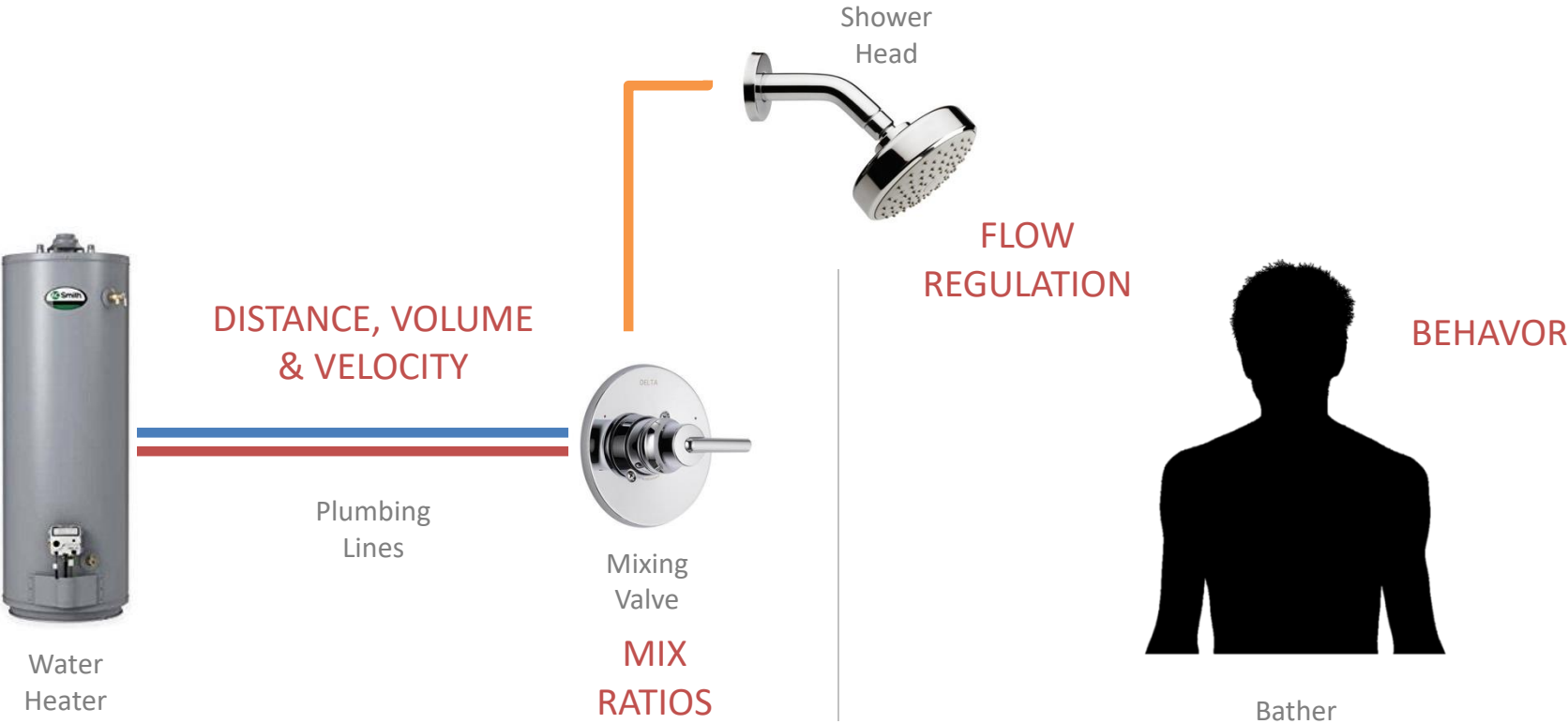
NO DESIRE FOR SHOWER EFFICIENCY

“When asked about the possibility of buying water efficient showers, most participants were not positive. This is because there is a general feeling that water efficient showers may not be as good in terms of power and therefore effectiveness.”

NO WATERSENSE - LOW FLOW PEAKED 10 YR AGO – HIGH PRESSURE GROWTH



The Anatomy Of A Shower & Key Considerations

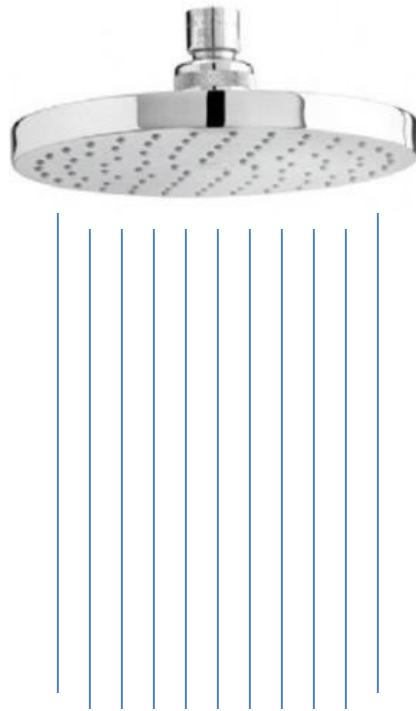


Structural

Behavioral

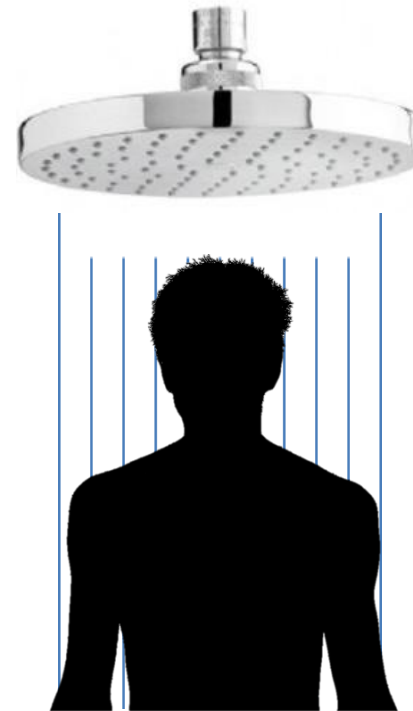
20% - 30% Of Shower Is Wasted Before Bathing Begins

In 2004 and 2011 papers Jim Lutz at Lawrence Berkeley National Lab indicates that shower warm-up waste falls in the 20% - 30% range.



~ 2 Minutes
Of This

WARM-UP WASTE

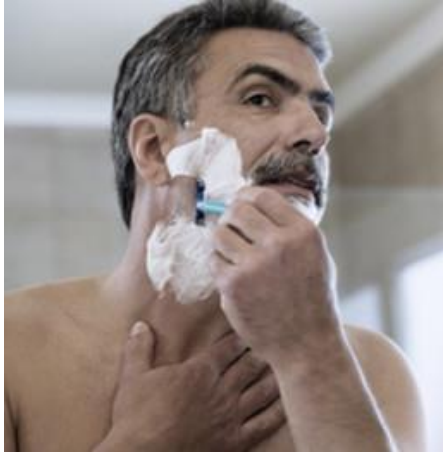


~ 6 Minutes
Of This

BATHING USE

Structure Drives Behavior – Behavioral Waste

Behavioral waste occurs when bathers use their time comfortably and efficiently while waiting for hot water to reach the shower. Activities include brushing teeth, using the washroom, picking out clothes, drinking coffee ...



71%

do other stuff while waiting for hot water to reach the shower



52%

do more than one thing as part of their warm-up routine



60%

say routine, not presence of hot water, dictates time spent away from shower

1 MINUTE LONGER
than it takes for hot water to arrive

Impact of Lower Flow Rates On Existing Structures

At lower flow rates, 50% - 100% more water must clear the pipe than is actually sitting in the pipe before hot water reaches the shower.

PLUG FLOW (+ 5 gpm)

distance < 1 foot



0% - 10%
more than
volume of pipe

LONG BULLET (1-3 gpm)

distance 5 – 10 feet



10% - 50%
more than
volume of pipe

HOT SLIDES UP OVER COLD (<1 gpm)

distance + 20 feet



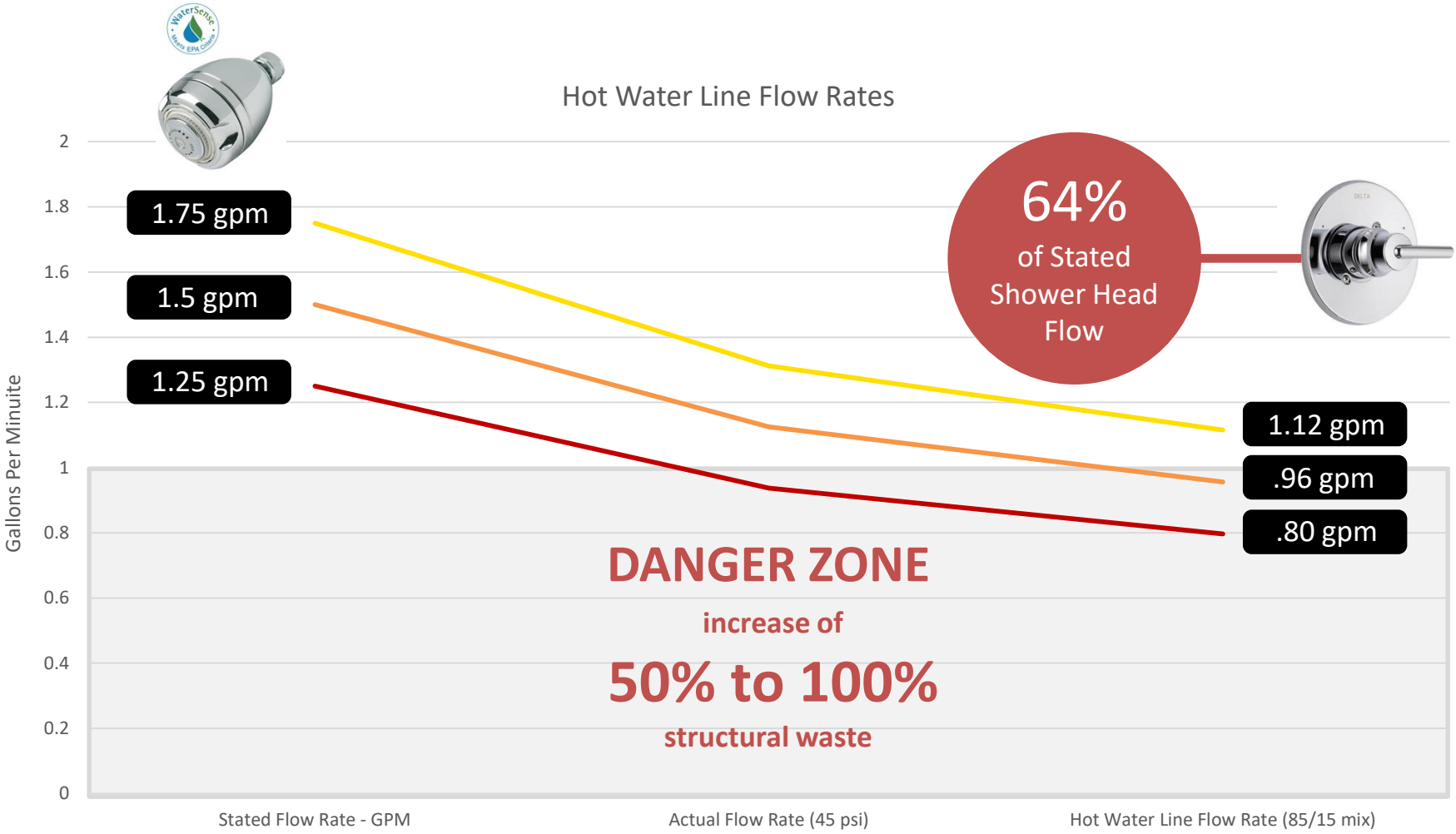
50% - 100%
more than
volume of pipe



SOURCE: Koeller, J (2007) Residential Hot Water Distribution Potential Best Management Practices.pdf

Frequent Flow Rates < 1 gpm on Hot Water Line

At lower flow rates, 50% - 100% more water must clear the pipe than is actually sitting in the pipe before hot water reaches the shower.

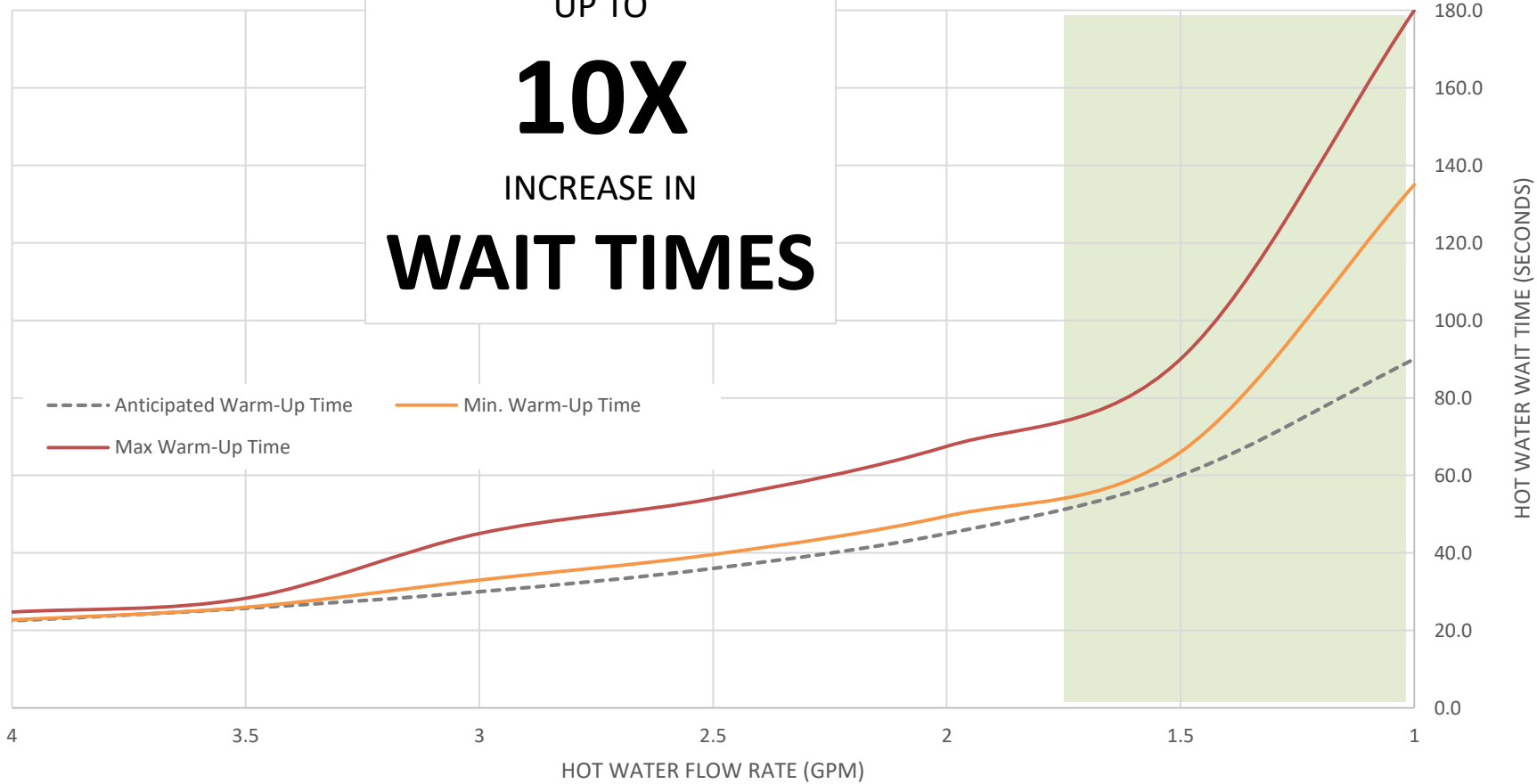


20 Second Waits Are Becoming 3 Min.

Waits that were 20 seconds in 1990 are rapidly approaching 3 min.



UP TO
10X
INCREASE IN
WAIT TIMES



SOURCE: Gary Klein, Estimates for hot water volume to purge 1-2 gallons (1.5gal avg.). Koeller, J (2007) Residential Hot Water Distribution Potential Best Management Practices.pdf

Structural & Behavioral Solutions

Reduce Structural Waste & Tighten WaterSense Performance

Evolve ShowerStart TSV

★★★★☆ 257 customer reviews | 26 answered questions
 Amazon's Choice for "evolve shower head"



Tighten WaterSense Flow Performance

	Specified Flow	Min @ 45 PSI	Min @ 20 PSI
CURRENT STANDARD	Stated @ 80 PSI	75%	60%
	1.5 gpm	1.12 gpm	.9 gpm
ACHIEVABLE TODAY (WaterSense Test Report Data From Evolve Showerhead)	Stated @ 80 PSI	93%	87%
	1.5 gpm	1.4 gpm	1.3 gpm



- High quality pressure compensating flow regulation is available today – less than 13% drop off from 80 – 20 psi.
- Don't allow actual flow rates to drop below 1.25 gpm



On Demand Hot Water Pump



SHOWER START
 Evolve Showerheads SS-2107CP-US Roadrunner II Water-Saving Shower-Head, Chrome Polish
 ★★★★★ 95 customer reviews | 11 answered questions

Conclusion