

# This presentation premiered at WaterSmart Innovations

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# **Unintended Consequences of Increasing Water Use Efficiency**

## **Water Smart Innovations 2010**

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# Where Have We Been?

- Reducing flow rates, fill volumes and flush volumes of water using fixtures and appliances for many years.
- Several large communities in the United States keep water deliveries at levels equal to and in some cases less than those from the early 1990s while accommodating growth in their populations.
- At the same time new water and wastewater treatment and delivery infrastructure are being planned and built, often without taking water use efficiency into account.
- We can expect these trends to continue.

# Unintended Consequences?

1. What will be the impacts at the water supply and treatment facilities if total water consumption is reduced significantly?
2. If buildings need less water (both indoors and outdoors) how much will retention time in the water supply piping increase and what impact will this have on the quality of the water delivered to our buildings ?

# Unintended Consequences?

3. How long will retention times increase in the water distribution piping within the building and what will be the impact on indoor water quality?
4. What will be the impact to the waste water collection and treatment system as less water is used within the building, or as grey water is diverted from the sewage drains, increasing the percent of total solids that enters the waste water stream?