



Water: The Challenge & Opportunity

Todd Brady
Global Sustainability Director
Intel Corporation
CAES Industry Energy-Water Workshop
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1969: the beginning...



The “impressionable” years

Lake Powell
1990s



Lake Powell
Today



The State of Water? Half full or half empty?

DAILY NEWS

Colorado River
shortage could hit
Arizona hard

News-wor-thy
Circulation Professionals

-adjective
worthy of media
attention and
public distribution

California
drought:
Brown orders
25 percent water
use reduction

"ALL THE NEWS
YOU NEED TO KNOW"

News·Today

MONDAY, OCTOBER 19 2012
\$4.00 WEEKLY, No. 18422

A sprinkler ban does
not constitute a crisis
in America

"All Our News
We Hope to Print"

The New York Times

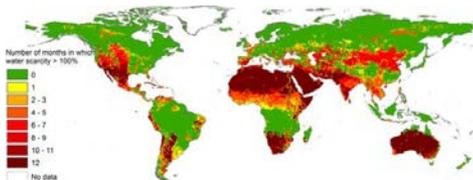
Special Edition
Today's special, plus more
on California's water crisis
in Topeka, Kansas, where
water is rationed and the
drought has hit hard.

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NEW YORK, SATURDAY, JULY 4, 2009

PRICE

**Two-Thirds of the World Faces
Severe Water Shortages**

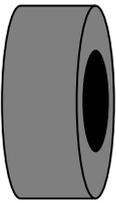
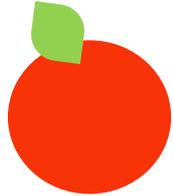
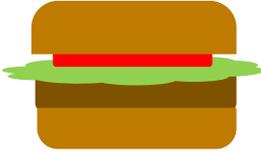


US water use peaked in
1980 at 440B gal/day (source:
USGS)

It depends and the answer is local

intel By the numbers

- Invested over **\$220 million** in water conservation since 1998.
- Saved **50+ billion** gallons of water – enough for 490,000 U.S. homes for one year.
- We still use **~9 billion** gallons of water a year. There is room for ongoing improvement.

ACTION	WATER FOOTPRINT	ACTION	WATER FOOTPRINT
 SHOWER	= 15-25 gal	 TIRES FOR 1 CAR	= 39,090 gal
 ORANGE	= 14 gal	 ¼ lb HAMBURGER	= 660 gal
 Cup of Coffee	= 37 gal	 INTEL CHIP	= ~16 gal

Intel Water Strategy

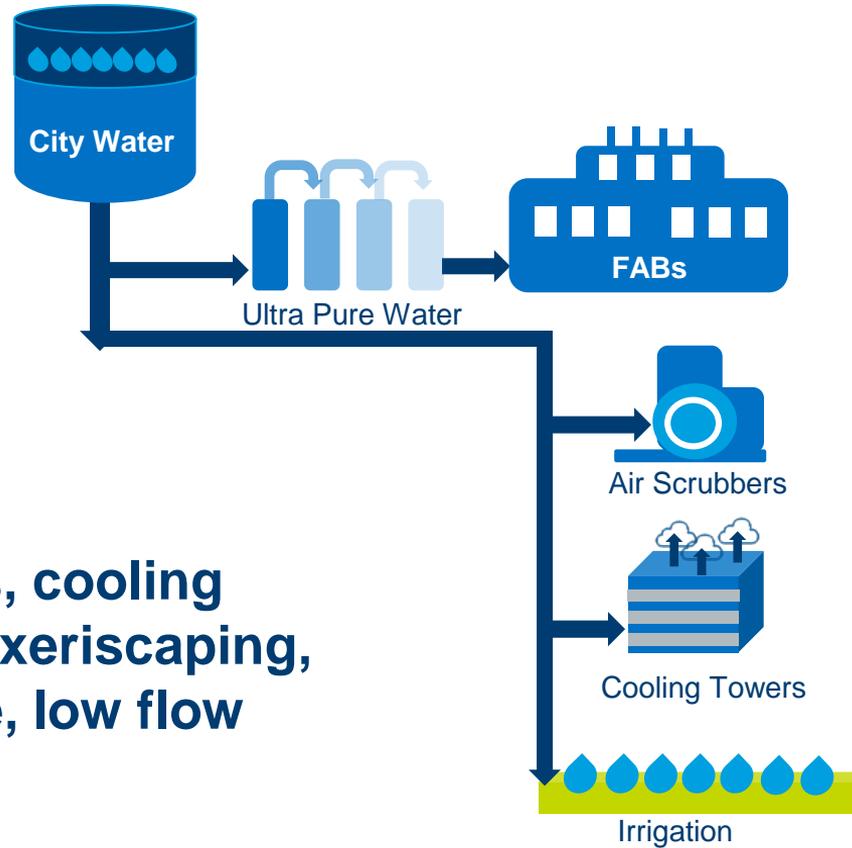


- **Reduce** our water usage
- **Replenish** local watersheds
- **Reimagine** water management through use of technology

Ocotillo campus example



~15%
reduction in
potable water
demand

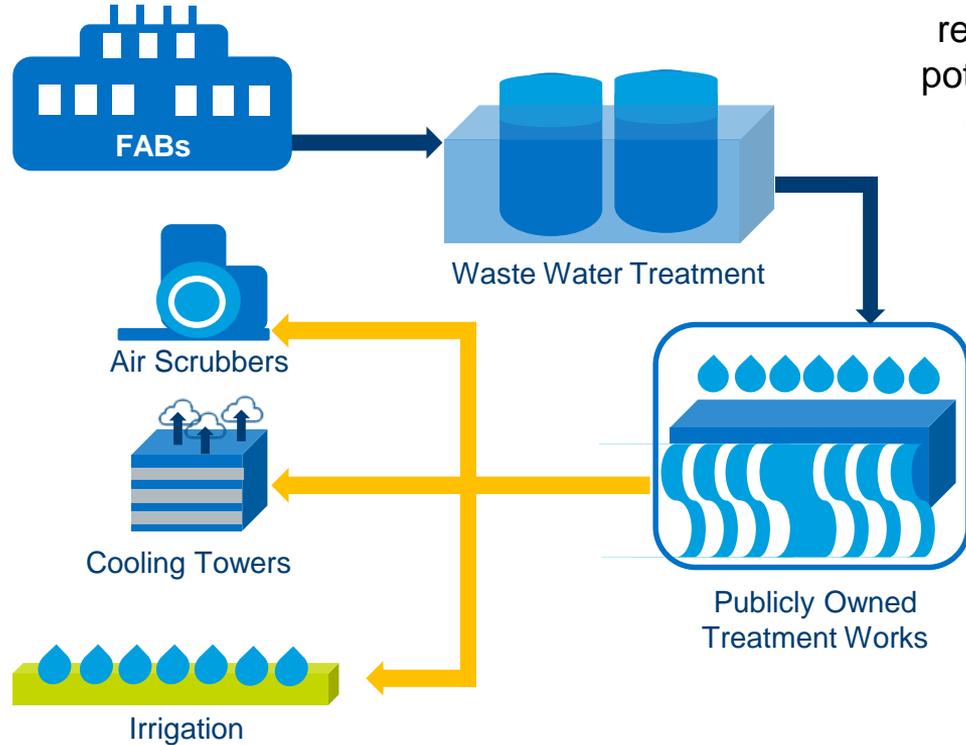


Reduce

UPW improvements, cooling tower optimization, xeriscaping, condensate capture, low flow fixtures

Reduce

Municipal grey water reuse



~20%
reduction in
potable water
demand

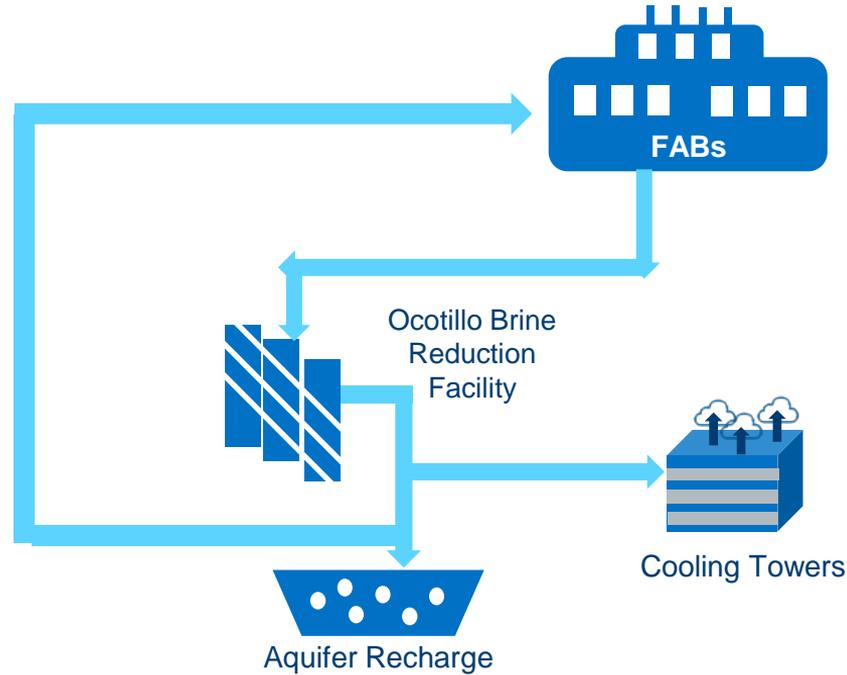
Replenish

Aquifer recharge

Total Impact

~50%
reduction in
potable water
demand

>2B gal
water
recharged to
aquifer



~15%
reduction in
potable water
demand

Reimagine

IT and Agriculture

- US Agriculture accounts for 70-80% of water use.
- IT technologies can monitor, control and optimize water use.

Recent case studies

- Malaysia: water savings with improved rice yields.
- Arizona: water savings through optimized flood irrigation.



Reimagine

Where can technology be used to help address water & energy challenges?

The potential applications are often only limited by our ability to envision the possibilities.





Parting Thought

"Don't be encumbered by history. Go off and do something wonderful."

-Robert Noyce, Intel co-founder



