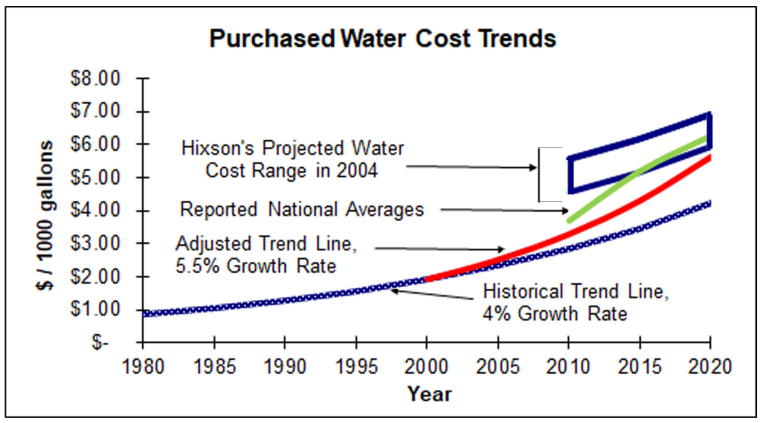
MARCH 2019

from experience

Testing the Waters: Justifying Water Reduction Projects

Over the past two decades that Hixson has been tracking water costs, we have witnessed a 3-to-5 fold increase in potable water costs. In 2004, Hixson research suggested that water would cost $6-$7 per 1000 gallons in 2019, far above the prior historical growth rate of 4% per year. That prediction was based upon trends indicating the need to increase infrastructure spending and improve water security. In fact, the American Water Works Association (AWWA) reported that between 2004 and 2014, the actual annual cost of water rose 5.5% per year nationally. Today, national average water costs vary between $5.00 and $5.90 per 1000 gallons, with wide regional and municipal differences. These water price increases, which frequently include water infrastructure upgrades - in addition to waste water treatment charges, general water scarcity, and expensive tap fees - all impact a company's operating expenses and business continuity. Given these escalating costs and business risks, the economics of incorporating conservation programs to reduce, recover and reuse water continue to be justifiable, providing economic payback and enhancing facility sustainability.



A first-pass evaluation of facility opportunities for water reductions can be assessed by comparing your facility's water demand with industry benchmarks observed by Hixson. (See "Experience in Brief.") This evaluation – a high-level indicator of the magnitude of the opportunity – should then be followed with basic conservation measures: reducing water lost directly to the drain, repairing water and steam leaks, optimizing CIP operations, and using low-flow/high-velocity water for cleaning applications.

The next level of water savings involves recovering a wide variety of relatively clean water sources collected from throughout the facility, and repurposing them for similar or lesser quality applications. Good candidates for water recovery include:

- Process cooling with non-contact water
- CIP final rinse
- RO water system reject
- Bottle or canning cooler blowdown

Before undertaking a water conservation program, it is important to have a good understanding of regulations pertaining to water reuse in a food plant. Reuse water must not contain harmful contaminants that violate food surface contact regulations, foul equipment or cause corrosion. More guidance can be found in Title 9 CFR 416.2(g), 21 CFR 117, and the Pasteurized Milk Ordinance.

experience in brief

Average Water Demands by Food/ Beverage Category (gal/1,000 lbs. product) as observed by Hixson:

Soft Drinks	185
Fruit Drinks	310
Bakery, Fresh	210
Bakery, Frozen	320
Dairy, Fluid	200
Dairy, Cheese	330
Dairy, Ice Cream	380
Meat, Processed	1,500

continuing education

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A Hixson *Food Plant of the Future* Webinar
Save the Date!
May 2, 2019

Look for Hixson at:
Food Automation & Manufacturing (FA&M) Conference
Doral Resort - Miami, FL
April 14-17, 2019

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