Resiliency1 is a hot topic for utilities right now. But if you don’t live and breathe (and drink) water at work, it’s easy to take it for granted. This is especially true in some areas that don’t experience frequent droughts and have rare service disruptions.

In the United States, we turn on the tap and water comes out; we take a shower and it goes down the drain; and as far as paying for these services, online auto payment programs can easily offer some consumers an “out of sight, out of mind” mentality. All of this is good, as it shows consumer confidence and trust in a utility’s ability to keep water readily available.

In the world of macro-economics, consumer confidence is an indicator of optimism about the overall economy, coupled with how people view their personal financial position. This important metric gives insight into the choice between spending and saving.

During periods of high economic confidence, people are more likely to spend, and the reverse is true during periods of low consumer confidence. Much like filling a bathtub during a hurricane, people save money when they are unsure of the future.

HDR’s article series on water economics, Two-Handed Economics, explores how an economic mindset can help utilities optimize and deliver complex projects with confidence.

The chart on the following page shows aggregate U.S. consumer confidence (blue line) compared with personal savings (red line) over the last 50 years. The lines mirror each other, demonstrating the relationship that as confidence increases the percent of disposal income used for savings decreases, and vice versa.

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1. The ability for a water system to adapt or withstand the effects of catastrophic events, whether natural or human made, and to rapidly return to normal operations.
Water Confidence - A Measurement of Future Expectations for Water Resources

In general, economists call the aggregate spending in an economy “consumption.” This is a major part of the U.S. national economy (over 70%), so the propensity to consume has a significant impact on market performance. Consumption is regularly tracked by politicians, bankers and financial analysts when making fiscal policy, monetary policy and investment decisions. Changes in consumption are heavily correlated to changes in consumer confidence.

So how does this economic indicator tie to water resources? As an industry, it’s important we recognize the role of consumer confidence in water in keeping the U.S. economy stable. Let’s call it “water confidence.”

Water confidence is only one variable in how customers make decisions, however, it is a means to understand: how the water market impacts industries, how the water market can be used as a catalyst for economic stability and growth, and how the water market can be leveraged in planning for resilient infrastructure.

Water = Life

A sudden disruption in water service, quality or supply, especially if prolonged, has a dramatic impact on people’s lives. A lack of water can cause people to make different decisions than they normally would.

One example would be turning to other sources, such as stock piling bottled water initially, causing a “run on the water bank.” Another might be a dramatic decrease in consumption with what is available.

Given these dramatic effects, lack of water confidence itself can have impacts on utilities. The effects will also spread to other local markets, like tourism and food and beverage.

When water confidence is weak, we expect a general overall cyclical downturn. If sustained, these effects can cripple communities.

THERE ARE THREE WAYS WATER EFFECTS ALL ELEMENTS OF THE NATIONAL ECONOMY:

1. As a necessary element in sustaining life,
2. As an input to the production of goods and services, and
3. As a complementary good (a good whose demand is tied to another) with no true substitutes.

Source: Index of Consumer Sentiment Yearly Table by University of Michigan Surveys of Consumers, and Section 2.6 - Personal Income and Its Disposition by Bureau of Economic Analysis, U.S. Department of Commerce.
**Water Affects Most Goods and Services**

Water is used in many (if not most) production processes and is a key element of agriculture. Confidence in access to clean water is essential to these commercial activities, as without it spending habits can be dramatically altered. Should water confidence drop because of a long-term disruption in service, quality, or supply, we may see companies (or complete industries) relocate to areas with high water confidence.

As an example, if a water supply dam were to fail there might be immediate evacuations, curfews, crime and closed businesses. Not only does the short-term impact include lost revenue and wages, it becomes unclear when businesses will reopen. Even once the immediate danger has passed, residents and tourists alike are less likely to eat at restaurants or purchase goods. If water supply is limited, the effect will be that much worse. In a local economy, businesses that use water like coffee shops and restaurants, or businesses that rely on tourism, could suffer in the long-term because of one incident.

But it’s not all negative; confidence in water infrastructure could actually be a source of economic development, as it could attract industrial and residential development.

**Nothing Can Replace Water**

Unlike many goods or services, water has no true substitutes. An often discussed example of substitute goods in economics classes is Pepsi and Coke. These two are in competition for market share and if one goes up in price or disappears, consumers will gravitate towards purchasing the other. This is not true for water, as it has no true substitute. You can’t pick something else that has the same input for agriculture and industry and will sustain life.

After the attacks of 9/11, the U.S. Department of Homeland Security categorized water as one of the key resources that needed to be secured. It’s for this reason that utilities conducted vulnerability assessments and continue to assess risk and resiliency. Securing infrastructure like this promotes higher water confidence.

While having no substitutes, water is a complement to many other goods. If water has a supply issue, there may be a decrease in the demand for complementary goods like reusable water bottles. Depending on the size of the incident, these effects may be contained locally or could reach regional or even national markets.

**Planning for Increasing Confidence**

We’ve now identified some of the short and long-run impacts, but what can those of us in this profession do to maintain stable confidence in water supply and quality both now and in the future? Water confidence is an important driver behind resiliency planning and in understanding how water resources can shape other markets. A few key tools can help give the public confidence in water:

- Public outreach and education on utility investments and operations
- Emergency preparedness
- Public information offices
- Asset management programs with consistent asset renewal and replacement
- Investing in resilient and secure infrastructure
- Redundancy in the system and supply
- Long-term supply planning and working with local industries, businesses, and other customers to provide adequate supply that will meet demand

Ultimately, managing uncertainty will promote water confidence, which is accomplished by understanding and managing several variables that impact water confidence:

- Visibility to condition of the water system and its source water
- Visibility to utility issues and hazardous events
- Information publicly communicated (by utilities or media)
- Past performance during events

I’ve seen first-hand how important it can be to get the right information out to the public. I was part of a water program in South Florida and was there during Hurricane Irma. With a strong public outreach element through social media, city-wide text alerts and media partnerships, the impact of Irma was relatively short-lived in the community. Residents and businesses had adequate time to stock up on secondary water supplies and had information on how to store tap water. They also were provided information on how to contact utility emergency operations in the case of an issue. Promoting this information both before, during and after the event helped maintain public composure and confidence.

**Understanding Confidence in Water Helps Us Make Better Decisions**

Understanding the broader relationship between water confidence and local economies promotes more informed and forward-looking decisions on managing water resources. **Leveraging high water confidence will help utilities invest in resilient infrastructure and create economic growth.** Encouraging confident water consumers will help maintain stability and in the event of an issue, recovery will be that much faster.

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