sustainability

A LEVELHEADED APPROACH

By William Brown

Sustainability, by definition, means ensuring that what we are doing can last. It asks: "Can what we are doing continue well into the future without putting undue burden on future generations and stakeholders?" To be sustainable, the answer has to be "yes" just as much in the economic sense as in the environmental sense. The nation's infrastructure report card shows that U.S. infrastructure systems are in decline—the antithesis of sustainability. This trend has to be reversed.

Reversing infrastructure decline with multilevel planning

Fortunately for utility managers, the U.S. Environmental Protection Agency (EPA) offers some helpful resources on sustainable infrastructure. EPA's Office of Water has published its action plan, and the agency outlines four pillars of sustainability for utilities: better management, full-cost pricing, water efficiency and watershed approach. To achieve true sustainability, planning has to occur at multiple levels.

Level 1: Project

Project-level sustainability planning is important to ensure that a project is implemented in the most sustainable fashion. The various energy, environmental-efficiency and sustainability certifications and indices are positive tools that promote project sustainability if they are applied to appropriately conceived projects. If they are applied to poorly conceived projects, however, one simply makes a nonsustainable project a little greener ("greenwashing" or "putting lipstick on a pig"). While project-level sustainability thinking is absolutely important, there needs to be an appropriate level of sustainability thinking at the higher planning levels to ensure a solid foundation exists for the project concept.

Making every project as green as possible, independent of cost, is not sustainability. Every project feature ought to provide a reasonable return on investment and should be a priority investment. If the payback is measured in geological eras, it probably is not a good investment. It is essential to infuse sustainability thinking in the planning levels where projects are conceived. This is where the biggest gains in sustainability can be had.

Project-level planning is a utility's first step toward achieving true sustainability.

Level 2: Infrastructure System

Sustainability at the infrastructure system level requires that one possess a sound understanding of the infrastructure system (i.e., capacity and condition of assets; repair, renewal and replacement needs; current and future system demands; current and future regulatory requirements; regulatory- and capacity-driven upgrade needs; prioritization of all the needs; and a viable financial plan that includes true cost pricing). In short, a comprehensive asset management plan is necessary.

Level 3: Community

The community level calls for sustainability discussions and a comprehensive master planning process that explores how one infrastructure system integrates with another system, and how they integrate with the community's development plan. Often water, wastewater, storm water and other municipal services are managed independently of one another. The most sustainable solutions require a holistic, integrated approach.

The community's development plan can have a major impact on infrastructure sustainability. Community development plans need to be created with input from the infrastructure system managers and include sustainability goals. The first sustainability question should be: "What is the most sustainable way to develop the community, and how does the public want to balance the social, economic and environmental considerations?"

The public is the beneficiary of public works services, and it is important to educate the public about the trade-offs with the level of service and the consequences of overfunding one municipal service at the expense of another. With the huge backlog of deferred infrastructure needs and limited financial resources, the public needs to be engaged as to whether they want—or can afford—A+ service, or whether they prefer a reduced level of service at a lower cost.

Over the past few years, public works and utility managers have heard, "You have to do more for less." The reply can counter: "The reality is, you get less for less." The public needs to be party to the trade-off and decision-making regarding level of service.

Level 4: Regional

Infrastructure sustainability requires an understanding of regional and watershed issues. The most sustainable solution often requires transcending political boundaries and partnering with neighboring communities. In many cases there are economies of scale for regional solutions and cooperation. The comprehensive master planning process should consider regional issues and the viability of regional solutions.

Level 5: State & Federal

There is a need to engage sustainability thinking at the state and federal level. State and federal regulatory agencies have a history of metering out new regulatory requirements over extended periods of time. Numerous communities have spent millions of dollars upgrading infrastructure systems to achieve compliance with new regulations, only to find that the new facilities are antiquated a short while later by additional regulations.

State and federal agencies have an opportunity and a responsibility to promote sustainability by developing and articulating a long-term vision of the regulatory requirements. Sustainability also may require the regulatory agencies to provide reasonable implementation schedules that are consistent with community affordability considerations.

State and federal agencies have the ability to promote sustainability via various funding/financing programs. Political leaders should be challenged to truly understand and embrace sustainability concepts in the design of any future funding/financing strategies. As a participant in the various grant programs, one also has the opportunity to promote wiser decisions regarding the best use of state and federal grant and loan money. The concept of "free money" from the government has to be better understood.

This money either came from us, the taxpayers, or it is coming from future generations of taxpayers. In neither case is it free. There is no way to rationalize borrowing from future generations as a sustainable practice, and it is difficult to construe grant programs generated from deficit spending as anything other than borrowing from future generations. All grant programs involve one group subsidizing another group. In the design of any grant program, the "who is subsidizing whom" should be defined, and it should be confirmed that this promotes sustainability.

The other aspect of grants that needs to be understood is that there is some inherent inefficiency that reduces the value of our money. If one sends a dollar to his or her local utility for infrastructure improvements, the utility will do a dollar's worth of work. If one sends a dollar to the IRS, he or she sends less than a dollar to the federal funding agency, which may send even less back to the local community with some red tape that drives up the cost of the infrastructure project and results in the dollar accomplishing less work. This inefficiency should be defined for every grant program to promote informed decisions about grant programs. Past grant programs have been hugely important in establishing this country's infrastructure.

Most of the past grant programs were designed to be one-shot deals, with the concept that the local utility would build replacement costs into its rate structure so it could operate sustainably without additional subsidies. Unfortunately, this did not happen in many cases and we now need to develop plans for tackling the backlog of infrastructure work. Holding one's breath waiting for a new grant program to solve this problem is neither wise for one's health nor the health of an infrastructure subsystem.

The sustainability challenge we face will require creative thinking and innovative solutions. In this regard, state and federal agencies can play an important role in promoting research and development and providing incentives to encourage implementation of innovative solutions. Academic institutions also can be key members of the sustainability team effort to research solutions to our challenges.

Level 6: Global

Finally, there is a need to understand how our local decisions impact global sustainability and vice versa. Thomas Freidman, in his book "Hot, Flat and Crowded," makes the case that developing countries are gaining financial wherewithal and that their citizens are beginning to emulate the American dream. The problem is that the world cannot afford to have more countries emulate this model, as this model consumes an excessive level of resources and is not sustainable at larger scales.

We are entering a unique era in which conventional wisdom leads us down the wrong path. We are faced with huge global challenges, the solutions to which most certainly will impact how we promote development and manage our communities and associated infrastructure systems. We have the opportunity and capability to lead the world in developing sustainable solutions to these challenges, but this will require a new way of thinking and the political will to transcend short-term political objectives.

It is a great time to be in the infrastructure business. There are plenty of challenges and opportunities. Let the creative thinking begin. WWD

William Brown, P.E., is president and CEO of Wright-Pierce. Brown can be reached at web@wright-pierce.com.

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