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State of the Water Industry Report 2011

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MARIPAT MURPHY

State of the Industry Report 2011: Economic stagnation dampens industry outlook

WITH THE ECONOMIC OUTLOOK
STILL UNCERTAIN, FINANCES—
ESPECIALLY AS THEY RELATE TO
INFRASTRUCTURE REHABILITATION—
ARE WEIGHING HEAVILY ON WATER
INDUSTRY PROFESSIONALS.

The appendix referred to in this article can be found online in the October issue of e-JOURNAL AWWA at www.awwa.org/files/secure/index.cfm?FileID=201194.

What's the "weather" like within the water and wastewater industry? If this year's annual State of the Industry (SOTI) study is any barometer, the forecast calls for continued storms, with little letup in sight.

Since 2004, the SOTI survey has polled water professionals to solicit their perceptions about the current and future state of the industry and the issues of greatest concern to them. In 2011, the topic clouding every aspect of the industry was the continuing struggling economy. It has been three full years since that October day when President George W. Bush signed the Emergency Economic Stabilization Act of 2008. As almost everyone can agree, whatever "stabilization" may have taken place, the US economy remains shaky. As the inimitable Will Rogers once observed, "Last year we said, 'Things can't go on like this.' And they didn't; they got worse."

Given that no industry operates in an economic vacuum, it's not surprising that SOTI survey results reflect today's financial realities. But whereas other business sectors can cut costs by shutting down smaller plants, eliminating unprofitable product lines, and outsourcing manufacturing and other components to factories overseas, the water industry cannot. The product it delivers is not just essential to public health but fundamental to life itself; it cannot be eliminated or stricken from the family budget. As one SOTI respondent put it, "Foreclosure lets you walk away, but you can't walk away from needing water."

Despite the fact that its product is an invaluable commodity, however, the industry is limited in how much it can charge for water, and rates rarely reflect the actual cost of production and operations. At the same time, slashed budgets and fewer financing alternatives signal potentially dire consequences for aging infrastructure in need of rehabilitation and repair.

In addition to assessing the current industry "weather," SOTI results provide direction for AWWA and its members, help reset priorities so that critical issues

move to the forefront, and offer an early warning system of dark clouds on the horizon. Although AWWA can no more cure the ailing economy than a meteorologist can disperse a thunderstorm, the organization is using its muscle and resources to advocate on behalf of the industry; work for balanced, reasonable regulatory actions; and provide education and training through e-learning and webcasts, publications, and conferences and workshops (see the sidebar on page 51).

“It goes without saying that the past few years have presented unprecedented challenges to the water community,” said AWWA Executive Director David LaFrance. “Poor economic conditions have resulted in slower growth, foreclosures, reduced overall water consumption, and resistance to water rate increases. These realities force water utilities to slash budgets, delay important capital projects, and basically do more with less. As utilities are forced to cut back, so are the related industry partners that help support the utilities. It is a vicious cycle.”

SOTI STUDY IS DATA-DRIVEN, RESPONDENT-LED

Study focuses on three main objectives. In collecting and analyzing data drawn from professionals on the front lines of the water industry, the SOTI survey serves three primary objectives:

- develop key insights into the critical concerns confronting the water industry,
- zero in on issues that are not adequately addressed so that these can receive appropriate attention and resources, and
- discern trends within the industry (such as emerging issues and patterns of capital spending) and track these over time.

SOTI participants are randomly recruited from among the AWWA membership. The SOTI survey went online in 2009 in order to simplify participation, eliminate printing and mailing costs, and minimize

environmental impacts. This year e-mails were sent to more than 17,000 AWWA members inviting them to take part in the 2011 study. Nearly 2,100 water professionals elected to submit responses before the survey closed in April.

This random sample included representatives from every sector of the industry. As in previous surveys, the group tended to be experienced professionals; 80% had worked in the industry for more than a decade, and of this number, 57% claimed more than 20 years of experience. The largest industry sector represented was utilities (57%), almost 90% of them publicly owned. The next largest group at 28% consisted of service providers, i.e., companies and consultants supplying products

participants to opine, prognosticate, vent, and suggest their own solutions.

RESPONSES REFLECT DEEPENING PESSIMISM AND FRUSTRATION

Soundness ratings dip, but the issues deemed critical remain the same. Each year, the SOTI survey kicks off with two broad questions about the state of the industry today and five years into the future. Participants are asked to rate their perceptions of industry soundness on a seven-point scale, from 1 (not at all sound) to 7 (very sound). Over the history of the SOTI study, responses to these questions have provided a snapshot of the industry at a moment in time.

To pinpoint the factors driving the soundness ratings, the survey then poses a series of questions about the

AWWA is using its muscle and resources to advocate on behalf of the industry; work for balanced, reasonable regulatory actions; and provide education and training through e-learning and webcasts, publications, and conferences and workshops.

or services to the industry. The remaining respondents came from government or regulatory agencies, academia, and research.

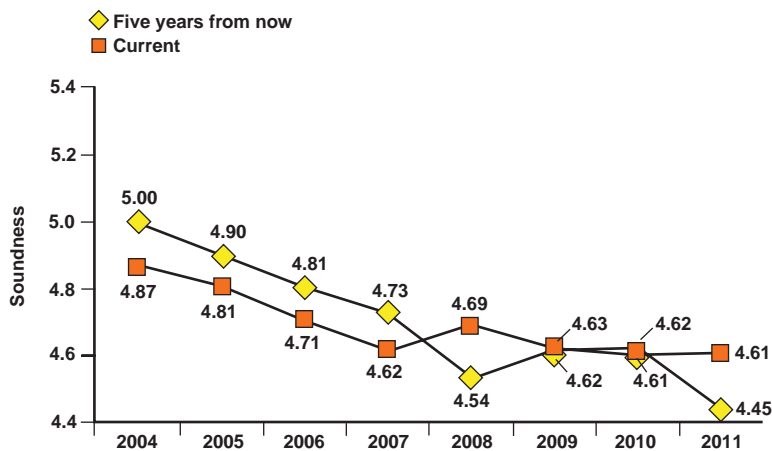
What sets the SOTI survey apart from many questionnaire-based studies is the extent to which it is respondent-led. Rather than supply a list of preselected “critical issues” to choose from—which could subtly shade responses and potentially sway results—the SOTI survey asks participants to share their personal perspectives, describing in their own words the concerns that matter most to them. In some respects, this aspect of the survey is a complicating factor because the raw responses must be analyzed for common threads and assigned to issue sectors so they can be tabulated across the survey. However, this hallmark of the SOTI study provides an opportunity for

issues confronting the water industry. Specifically, respondents are asked to identify

- the most pressing issues facing the industry in the near term (one to two years),
- the issues likely to be critical in the long term (three to five years), and
- the issues they perceive as inadequately addressed.

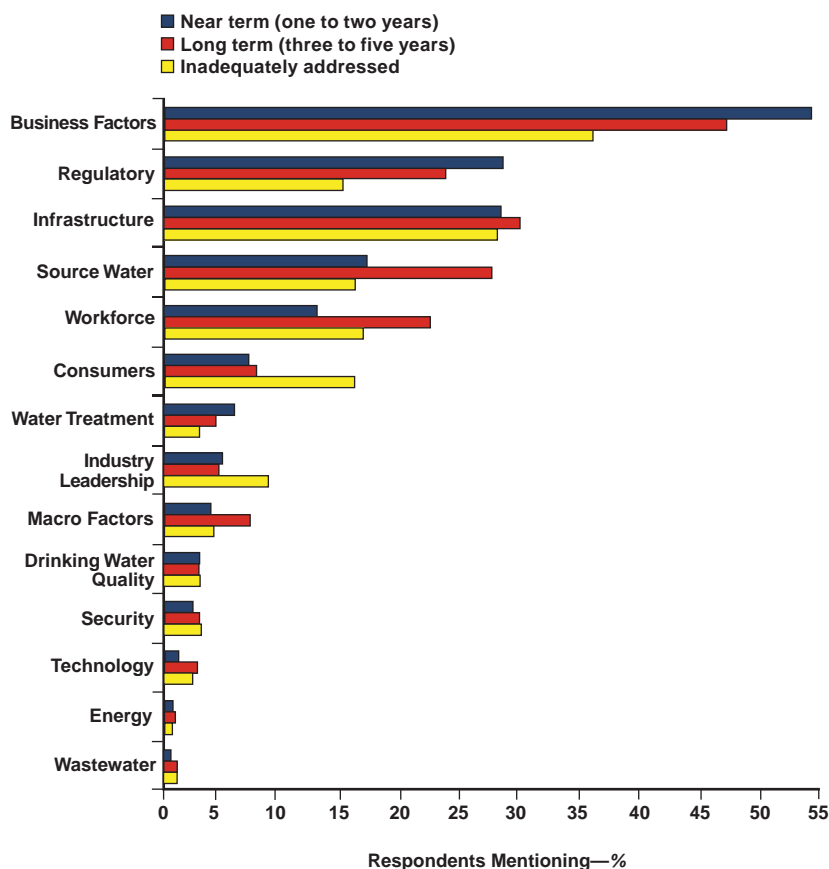
US responses. For the past three years, perceptions about the current state of the US water industry have been flat with a ranking of about 4.6. Respondents see the industry as they see the economy—in the doldrums. With regard to the future state of the industry, however, continued market uncertainty coupled with a barrage of industry concerns demanding immediate funding have made many US respondents pessimistic about the long-term forecast.

FIGURE 1 Soundness trend for the US water industry



Respondents rated industry soundness on a scale from 1 (not at all sound) to 7 (very sound).

FIGURE 2 Summary of issues as cited by US water industry respondents



In 2011, ratings for industry soundness five years from now sank to their lowest levels in the survey's eight-year history (Figure 1).

The reasons for this gloomy outlook are apparent in Figure 2, which summarizes the critical issues cited by US water industry professionals. For the third year running, business factors dominated the rankings, but this year it was cited by more survey participants than ever before and held the top spot across all three categories, i.e., near term, long term, and inadequately addressed. In 2011, the business factors category was rated the top issue in the next one to two years by more than 50% of respondents, the top issue over the next three to five years by 45%, and an inadequately addressed issue by nearly 35%. Regulatory issues edged infrastructure as the second greatest critical concern in the near term, but infrastructure was ranked higher as an issue in the long term and one that is inadequately addressed. Source water and workforce matters were perceived as issues of concern three to five years down the road.

Most of the issues ranked by survey respondents are too complex to be limited to a single category, however. For example, respondents' comments about infrastructure and regulatory issues often cited business factors as well, because replacement of aging pipes and upgrades to comply with new regulations require funding. To avoid duplication during tabulation of survey responses, however, comments that cited both the physical and financial aspects of infrastructure were tabulated as a single vote (in the business factors category). Thus the infrastructure category shown in Figure 2 reflects only comments about the physical condition of these assets, when in reality, infrastructure is also a financial issue and was, in fact, a prime component of the business factors category as shown in the figure. It is telling that when the financing components of infrastructure and regulatory issues are assigned to their

respective categories, infrastructure shoots to the top issue spot and to a greater extent this year than in the past (Figure 3). Reflecting their concerns about failing infrastructure and the dearth of funds for rehabilitation, more than 40% of US respondents considered it a critical issue in

Canadian water industry both today and five years from now were above the 5 mark. This optimism can likely be traced to Canada's stable economy and relative insulation from the financial vagaries that have beleaguered other nations (*Business Insider*, 2011; *Seattle Times*, 2010).

issue in the short term. However, source water rivaled business factors as a top concern among Canadian professionals, who ranked it second overall and the leading concern three to five years from now. For these respondents, workforce issues (coming in at number three) merited more attention than infrastructure (ranked fourth). Canadian responses continued to indicate that regulatory matters are of less concern than in the United States; even so, after slipping to seventh place in the 2010 survey, regulatory issues returned to the ranks of Canada's top five issues in 2011.

Utility and service provider responses. The SOTI study classifies as a utility any entity—public or private—engaged in water production or water/wastewater treatment, including water wholesalers. The service provider category consists of manufacturers, distributors, distributors' representatives, technical services companies, and consultants—in essence, anyone supplying products and services to utilities.

Funding for infrastructure is tenuous at many utilities, with only 11% reporting that their existing plans will cover their entire infrastructure funding needs and nearly a quarter stating that less than 20% of their needs will be met.

the near and long term and one that has not been adequately addressed.

Over the years of the SOTI survey, the top eight issues cited by US respondents have shifted up and down in the rankings (Figure 4). For example, in 2004, the study's inaugural year, security was a predominant concern but has dropped steadily ever since and is now ranked last among the top eight issues for all three categories, i.e., near term, long term, and inadequately addressed. Over the past few years, rankings for business factors have been particularly volatile, reflecting the unremitting economic turmoil. Respondents in 2011 viewed regulatory and workforce issues as growing more critical in the coming years and inadequately addressed (Figure 4, parts B and C).

Canadian response. Since 2006, when the SOTI study first solicited the Canadian perspective on the water industry, Canadian participants consistently have rated the soundness of their industry higher than their US counterparts (Figure 5). On the same 1-to-7 scale, Canadian respondents have always expressed a sunnier view of industry soundness in the future; although ratings fell from a high of 5.45 in 2007 and have been relatively flat the past three years, never have they dipped below a 5. This year, for the first time, soundness ratings for the

Just like their US colleagues, however, Canadian water professionals have issues to contend with, citing the same top five concerns as their US counterparts but ranking them somewhat differently (Figure 6). As in the US rankings, Canadian survey participants assigned business factors the top spot and deemed it the leading

FIGURE 3 Top five issues cited by US respondents (with financing distributed by issue area)

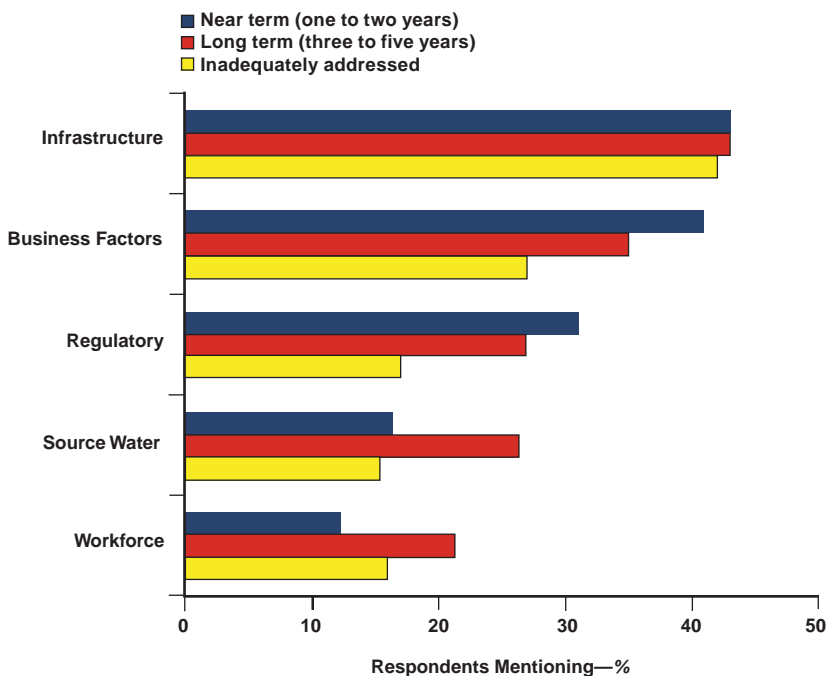
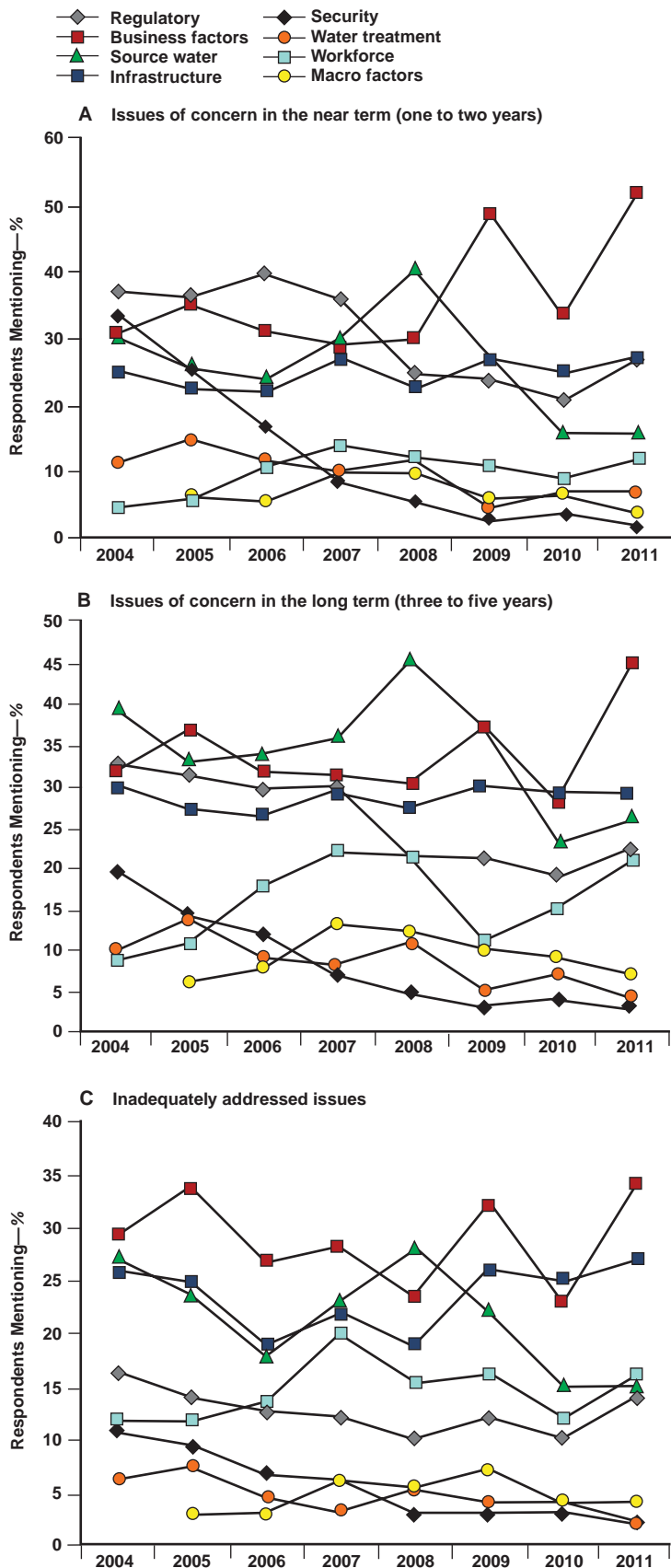


FIGURE 4 Trends for top eight issues cited by US respondents



The majority of the water professionals who elect to participate in the annual SOTI survey are water utility personnel and industry service providers. This year, they constituted 85% of survey respondents, about the same percentage as in 2010.

As in previous years, utilities and service providers responded almost identically in their ranking of the top issues (Figures 7 and 8, respectively). One difference was that service providers rated regulatory matters one slot lower than the utility contingent—not altogether surprising given that this concern has less import for them than for utilities. Treatment issues, which service providers had ranked as the fifth most critical issue in 2010, slipped to the eighth slot.

Regional perspectives. In addition to tabulating results by national and industry sectors, the SOTI study analyzes results across regions. Just as the SOTI survey as a whole reflects the national climate, results for individual regions shine a light on areas that may have taken harder hits in terms of the economic downturn, climate shifts, or geographic disadvantages. The regional categories for the SOTI study mirror AWWA membership regions.

- Region 1: Connecticut, Delaware, Maryland, New Jersey, New York, Pennsylvania, New England, Atlantic Canada, and Quebec;

- Region 2: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia, and Puerto Rico;

- Region 3: Illinois, Indiana, Iowa, Michigan, Minnesota, North Dakota, Ohio, South Dakota, Wisconsin, and Ontario;

- Region 4: Arizona, Arkansas, Colorado, Kansas, Louisiana, Missouri, Nebraska, New Mexico, Oklahoma, Texas, Utah, Wyoming, south/east Idaho, and Mexico;

- Region 5: Alaska, California, Hawaii, Montana, Nevada, Oregon, Washington, north/west Idaho, British Columbia, and western Canada.

Table 1 shows overall soundness of the industry as perceived by respondents in the five regions. As in the last several SOTI studies, respondents from region 3 proved to be the most optimistic, perhaps reflecting a characteristic inherent to the Midwest. Region 2's southern respondents also perceived industry soundness in brighter hues than the sample as a whole, whereas region 1 (the northeast) and region 4 (mountain and southwest states) took a dimmer view of industry soundness both today and five years from now. Compared with soundness results for the total sample, region 5

and macro (climate) issues higher than the sample as a whole.

SURVEY COMMENTS BREAK DOWN WHAT'S BEHIND INDIVIDUAL ISSUES

Responses reveal the developments driving the five most pressing concerns. Business factors. The specific aspects that kept business factors in the forefront of industry issues in 2011 boiled down to four primary factors. For US and Canadian respondents as well as utilities and service providers, the number one worry was the financing of repairs, replacements, and upgrades for

Another major influence on the business factors category was the imbalance between the rates charged for water and the increasing costs of production. Expenses and the lack of funding options to meet them also contributed significantly to business factors. For all four respondent groups (US, Canada, utilities, and service providers), the finances associated with regulatory compliance appeared to be less of a headache. Still, for one region 2 utility professional, the issue came down to “balancing the cost of our product while maintaining compliance in an increasingly restrictive regulatory environment. I often think there is a disconnect between the ‘calculated’ regulatory cost versus the ‘actual’ cost of regulating new contaminants.”

Infrastructure. SOTI participants were clearly concerned about the age of their distribution systems and the likelihood of failure. They rarely mentioned the subject without bemoaning the lack of funds to resolve the problem. Their comments call to mind the archetypal disaster movie in which experts and workers on the front lines warn of an imminent danger but can't convince anyone to take them seriously. The politicians and government officials brush aside the dire predictions, the media briefly shines a spotlight before flitting off to the next “hot” topic, and the public goes about its daily life, blissfully unaware that the world as they know it is about to change. Here are some sample comments from SOTI respondents:

- “The ticking bomb related to failing infrastructure—it is just a

What sets the State of the Industry survey apart from many questionnaire-based studies is the extent to which it is respondent-led.

responses were split: more pessimistic about the industry's current soundness and more optimistic about the future.

As for the key issue areas, some regional differences surfaced here as well (Table 2). For example, respondents from region 1—home to older metropolitan centers and aging distribution systems—expressed more concern about infrastructure and water treatment than the overall sample. Responses from regions 2 and 3 cited business factors and regulatory issues more often than other regions. Survey participants from regions 4 and 5, where water can be scarce and demands heavy, rated source water

aging and deteriorating infrastructure. Putting off needed rehabilitation may be the easier and more politically expedient course, but the delay troubled SOTI respondents. A consultant from region 5 summed up the situation. “As state and federal budgets continue to experience critical shortfalls, cuts are being made everywhere, including infrastructure funding. Water systems are not being maintained or upgraded, and the failure of system components is becoming a normal occurrence. Often when system components fail, they are provided with a temporary fix just to get by until the next issue.”

TABLE 1 Overall soundness of the industry by region

Time	Total Sample	Region 1	Region 2	Region 3	Region 4	Region 5
Current	4.60	4.54	4.64	4.67	4.57	4.59
Five years from now	4.44	4.33	4.50	4.44	4.31	4.57

Respondents rated industry soundness on a scale from 1 (not at all sound) to 7 (very sound).

matter of time and it will affect every community in the U.S.”

- “The infrastructure is failing in almost all small communities and rural water districts. This will have a very significant effect on quality of life and financial viability in small communities. It appears that Congress has not really been able to wrap their brains around the implications of the problem, and this will be a huge issue in the future.”

- “Overall infrastructure upkeep, expansion, etc.—it relates to the entire system, not just water and wastewater. While the professional organizations, AWWA included, have been warning about the need, the general public has taken an ostrich approach.”

- “The pipes we installed 100 years ago had an estimated life of 100 years. Should I say more?”

Regulatory factors. Across the board, the concerns driving this category were compliance with new regulations and the quality and/or scientific basis for these laws promulgated by the US Environmental Pro-

[the same] as they started out, and planning for these changes can be a moving target.” When a contaminant is proven not to be a problem, noted a region 4 utility respondent, “it stays on the books and in the requirements

Now more than ever before, utilities need to price treated water to fully recover not only operational costs but also to meet regulatory requirements and ensure timely infrastructure maintenance replacement.

tection Agency (USEPA) and other entities. According to a utility professional from region 1, “Changing federal standards are always problematic in that the final regulations are rarely

because it literally takes an act of Congress to get an item removed.”

As far as the basis for regulations, another utility professional decried “the creation of regulations based on

TABLE 2 Near-term, long-term, and inadequately addressed issues by region

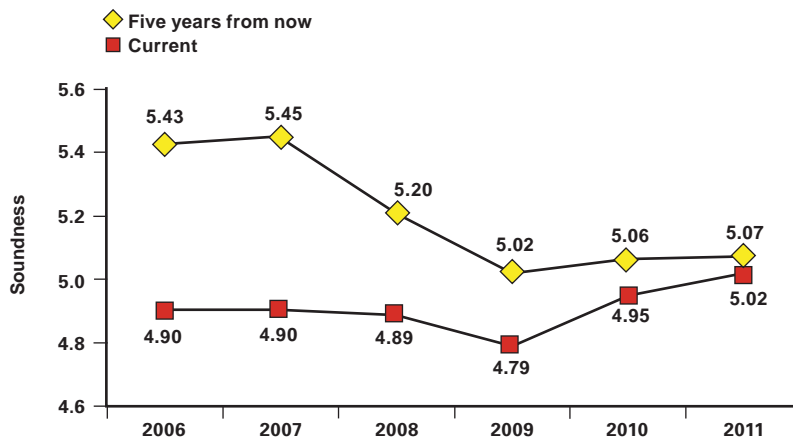
Region	Issues Critical in the Near Term (One to Two Years)—% of respondents mentioning									
	Business Factors	Infrastructure	Source Water	Regulatory	Workforce	Macro Factors	Water Treatment	Consumers	Security	Water Quality
Region 1	49	35	15	20	13	4	9	7	4	3
Region 2	56	24	17	30	13	3	4	6	1	2
Region 3	55	25	14	29	12	4	4	10	2	3
Region 4	48	29	16	27	13	3	6	9	3	4
Region 5	49	22	26	23	17	7	5	5	2	3
Average	51	27	18	26	14	4	6	7	2	3
Region	Issues Critical in the Long Term (Three to Five Years)—% of respondents mentioning									
	Business Factors	Infrastructure	Source Water	Regulatory	Workforce	Macro Factors	Water Treatment	Consumers	Security	Water Quality
Region 1	42	36	24	19	22	10	4	7	3	5
Region 2	49	26	28	24	21	6	5	10	2	3
Region 3	48	25	22	25	23	4	2	10	3	3
Region 4	42	25	32	20	24	9	4	8	5	3
Region 5	40	29	33	18	22	7	6	5	1	1
Average	44	28	28	21	22	7	4	8	3	3
Region	Inadequately Address Issues—% of respondents mentioning									
	Business Factors	Infrastructure	Source Water	Regulatory	Workforce	Macro Factors	Water Treatment	Consumers	Security	Water Quality
Region 1	35	34	12	15	18	4	4	15	2	1
Region 2	37	24	16	13	18	5	1	18	4	2
Region 3	36	26	11	9	14	3	3	18	4	3
Region 4	38	24	18	17	14	6	2	13	4	5
Region 5	26	27	19	13	19	5	5	12	2	4
Average	34	27	16	14	16	4	3	15	3	3

emotion versus science.” And one SOTI participant in a government position wrote, “The agency is promulgating regulations based not on cost-benefit but seemingly on the advance of detection technology.”

Rarely were regulations mentioned without a comment about associated costs, often about the consequences for other utility priorities. A utility respondent from region 3 warned, “By not throttling back the pace at which regulatory requirements are introduced in the face of struggling economics and a lack of federal funding to address regulatory mandates, utilities will be forced to defer needed preventive maintenance, and the risk of severe failures will rise.”

Source water. The breakout for this perennial top-five issue consisted of four primary factors: source water protection, water supply/shortages, conservation, and water reuse. Respondents drew attention to the deterioration of source water through such practices as hydrofracking, which can compromise infrastructure integrity and uses chemicals that may threaten water quality (Osborn et al, 2011; Rush, 2010). They also voiced concern about the fate and transport of such contaminants as pharmaceuticals and personal care products, which may render supplies more difficult (and therefore more costly) to treat. “Most treatment systems cannot remove these,” wrote a manufacturer’s representative in region 5, “and cost of treatment is very, very expensive for trace contaminants.” A university respondent from region 5 felt that providers do not want to gather information about changes in source water quality “for fear of obtaining ‘bad’ information that they will have to share with their constituents and with regulators. Most utilities focus on engineering fixes (i.e., treatment plant operations) rather than comprehensive studies that can help determine how, when, and where water quality is being impacted.”

FIGURE 5 Soundness trend for the Canadian water industry



Respondents rated industry soundness on a scale from 1 (not at all sound) to 7 (very sound).

FIGURE 6 Summary of issues as cited by Canadian water industry respondents

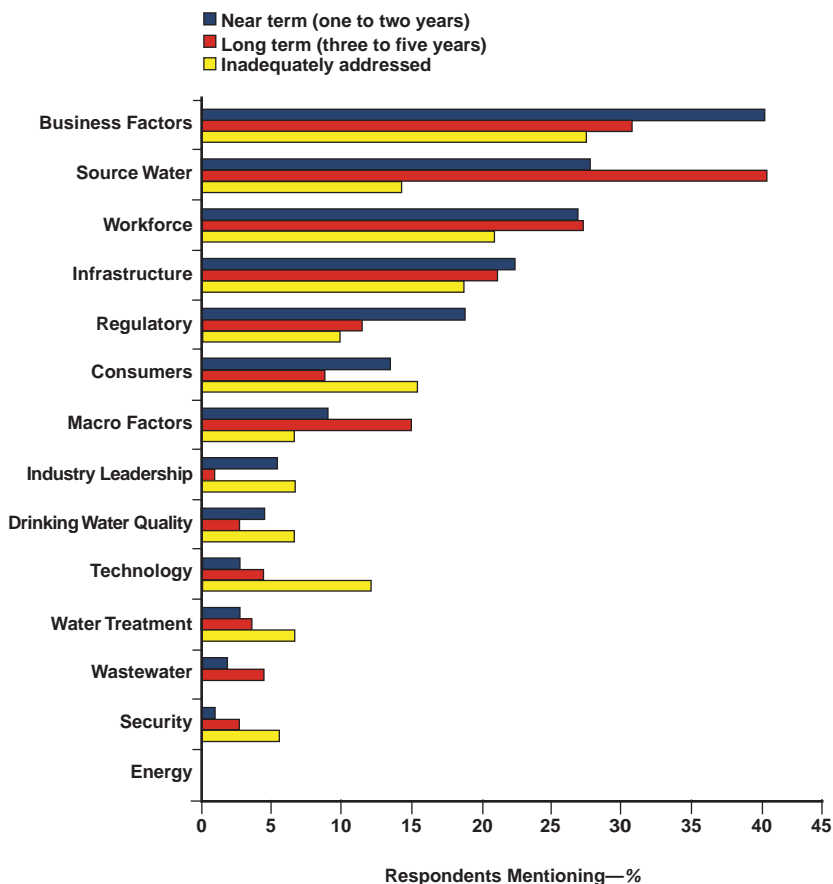


FIGURE 7 Summary of issues as cited by utility respondents

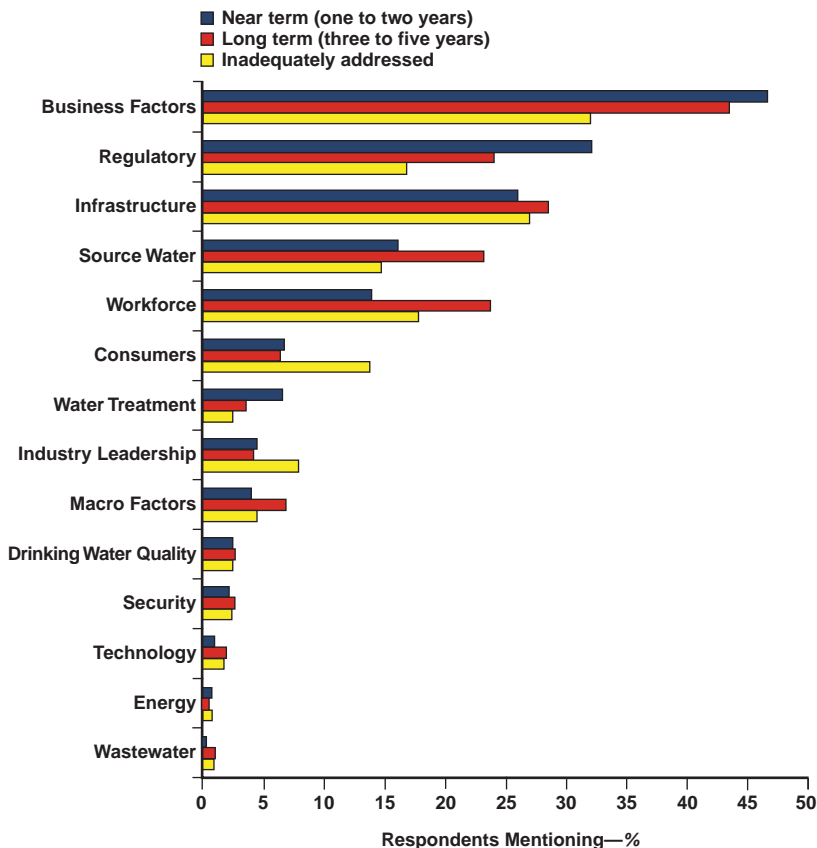
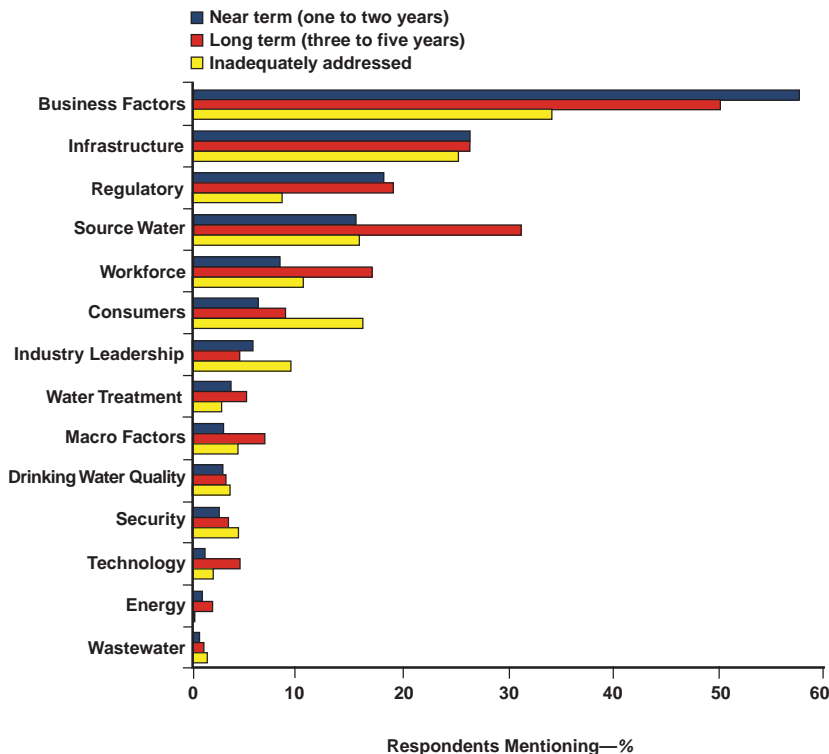


FIGURE 8 Summary of issues as cited by service provider respondents



Drought and depletion of aquifers and fresh water sources are diminishing supplies even as demand is growing. For SOTI respondents, these developments underscored the need for conservation and education as well as some limitations on growth. “Conservation is going to become the most important issue,” observed a region 2 utility professional. “There should be a regional focus on conservation and restrictions on growth in areas with no long-term water plan.” According to a government employee in region 3, the industry must figure out “how to educate people that water is not a renewable resource and should be conserved. Instead, the focus is on how to meet demand, rather than how to make demand lower.”

The industry itself came in for criticism, with one consultant calling for increased “water efficiency and conservation. The water industry continues to fail to fully exploit the potential for new supplies through eradicating system and customer water waste.” Water reuse also had its advocates including this utility professional from region 5. “The amount of water available is driving increasing water reuse considerations. Recycled water will become more popular as we have already hit all the ‘easy’ conservation methods.”

Workforce. Survey participants were eloquent about workforce issues, including the dearth of qualified workers, limited salaries, a perceived lack of prestige associated with the industry, the loss of industry knowledge as the current cohort of workers ages and retires, and the need for training and certification. “Water plant staffing and operator education and competency are going to start having a greater effect as experienced staff retire,” wrote a utility professional in region 2. “Several plants in my area (south Florida) don’t have any operators under 45, so even if they recruit new talent at the plant level, there’s a huge gap in the workforce that will cause problems for many years.”



AWWA in Action—How the Association Responds to SOTI Survey Results

The data provided by the State of the Industry (SOTI) survey are more than just numbers or statistics that delineate industry soundness and critical concerns. Study results also focus attention on the key issues demanding resources and funding from the water industry and action on the part of AWWA and its membership. Here is a selection of activities that the association has recently undertaken to address two of the top five critical issues. A more complete rundown of AWWA's response to the five most urgent concerns is available in the online appendix at www.awwa.org/files/secure/index.cfm?FileID=201194.

INFRASTRUCTURE

Water Infrastructure Finance and Innovation Authority. Responding to industry concerns about infrastructure, AWWA developed a proposal for a promising new entity, the Water Infrastructure Finance and Innovation Authority (WIFIA), modeled after the Transportation Infrastructure Finance and Innovation Act. If developing legislation were enacted by Congress, WIFIA would provide low-interest loans and/or credit guarantees to larger water and wastewater projects at long-term US Treasury rates. In addition, the authority would lend to State Revolving Funds (SRFs) seeking to enlarge their capital base. On the basis of current market conditions, the savings for projects and SRFs would be significant compared with municipal or state bonds.

2011 Washington, D.C., Fly-In. To promote the concept with members of Congress, AWWA made the WIFIA the cornerstone of the 2011 Washington, D.C., Fly-In, held in cooperation with the Water Environment Federation (WEF). Almost 200 AWWA and WEF members descended on more than 400 Congressional representatives with materials and focused messages on infrastructure funding. Both AWWA and WEF are committed to working together on the 2012 Fly-In and are encouraging their memberships to advance the WIFIA concept by meeting with elected representatives in their district offices.

Additional action. Other programming addressing the infrastructure crisis included association conferences; e-learning and webcasts on infrastructure and its maintenance; AWWA standards and manuals of practice; books on infrastructure financing, replacement, and asset management; and articles in association periodicals.

REGULATORY ISSUES

Under Administrator Lisa Jackson, appointed by President Obama in 2009, the US Environmental Protection Agency (USEPA) has issued a series of decisions that may affect water providers in the years ahead. AWWA efforts in Washington center on informing regulators by filling knowledge gaps, participating in stakeholder groups, and

working for rules that are reasonable and balanced from scientific and cost perspectives.

Total Coliform Rule. When water providers needed their voices represented in the recent revision of the Total Coliform Rule (TCR), AWWA worked through an official federal advisory committee to put forth recommendations that are now reflected in the proposed TCR revisions. The association provided negotiator training for all water utility representatives on the committee, held regular meetings and conference calls for the group, and provided detailed technical analyses throughout the process. Carrie Lewis, superintendent of the Milwaukee Water Works and AWWA's lead negotiator in the rule-making noted, "Although the TCR effort cost AWWA almost half a million dollars over a two-year period, the savings to US utilities are incalculable." In 2015, when the final revised TCR takes full effect, water systems will be better positioned to effectively communicate with their customers and take practical steps to resolve water quality challenges.

Lead and Copper Rule. In 2010, the Centers for Disease Control and Prevention raised concerns about the safety of partial lead service line replacements, and USEPA accelerated the pace of its Long-Term Lead and Copper Rule revisions. Last year AWWA continued to advocate for "getting the lead out" while stressing the limits utilities face in addressing lead service lines and plumbing on customers' property. AWWA members have actively participated in every public stakeholder opportunity, and the association's comprehensive "Strategies to Obtain Acceptance of Complete Lead Service Line Replacement" suggested practical steps utilities can take to encourage customers to replace the portion of the lead service line under their control.

Additional action. AWWA has also been in the forefront in working with USEPA on the complex technical issues surrounding hexavalent chromium and perchlorate, informing the agency's actions on regulation of contaminants as groups, and keeping association members in the loop about fluoride. In 2010, AWWA engaged USEPA on its program to integrate Federal Insecticide Fungicide and Rodenticide Act and Clean Water Act management of aquatic pesticides such as those used by water utilities to control algae. The association also organized a coalition of water organizations to educate agency staff about the role of aquatic pesticides in water resource management. Also in 2010, USEPA guidance adopted the water audit strategy developed by AWWA and the International Water Association. AWWA continues to keep members up to speed on current regulations and upcoming regulatory developments by publishing comprehensive guidebooks and timely articles in association periodicals.

A Canadian university respondent observed that the “retirement of baby boomers may result in quicker than usual promotions through the ranks, and this may affect levels of experience. On the plus side, younger workers with higher degrees of comfort with computer systems, robotics, etc., will move into positions with responsibility. . . . Past trends show that as job availability increases, fewer students progress to higher levels of education. This could impact college and university programs as well the overall level of highly trained workers.”

Some respondents acknowledged that the industry itself bore some of the blame, citing lack of proper succession planning and educating young people about available opportunities. According to a region 1 water wholesaler, “A source of bright, eager young operators needs to be developed in ways we have not done to date.”

“Lesser” issues should not be overlooked. Even as the five most pressing issues draw the industry’s focus and funding, there were additional concerns that SOTI survey respondents deemed worth mentioning

and deserving of attention. Given that these challenges are inextricably linked to others facing water providers today, many respondents felt that the industry ignores them at its peril.

Consumers. With an eye toward much-needed rate increases that reflect the true cost of water, respondents continued to call for greater efforts to educate consumers (and public officials) about the value of water, conservation, and the infrastructure crisis. “Public awareness of the cost to treat water and maintain systems is very poor,” noted a consultant, “and the public will fight any rate increases yet will continue to waste water due to lack of understanding.” Another consultant complained that “most Americans pay less for water than for the cell phone or cable bills, yet they believe they pay too much for water. For the state of the water industry to improve, we all need to work to change this mindset so that critical projects can be adequately funded.”

Water treatment. For many SOTI survey participants, treatment concerns centered on the higher levels of treatment required and the associated costs. As respondents pointed out, the demand for cleaner drinking water and the increased regulations have significant financial implications for municipalities. Asked a consultant from region 3, “Is the cost to upgrade worth it or is there a better resolution such as decentralized treatment?” A utility respondent in region 4 questioned the higher treatment standards themselves. “When do we get to the plateau of treatment that allows us to level our treatment process and not constantly be looking to overcome the next requirements placed on us? When is the water clean enough?”

Industry leadership. Whereas last year US participants in the SOTI survey ranked leadership next to the bottom of the issue ratings, in 2011 leadership issues rose to the middle of the pack. The reason may be that as times get tougher, effective leadership is

FIGURE 9 Costs (after capital projects) covered by utility rates and operating income

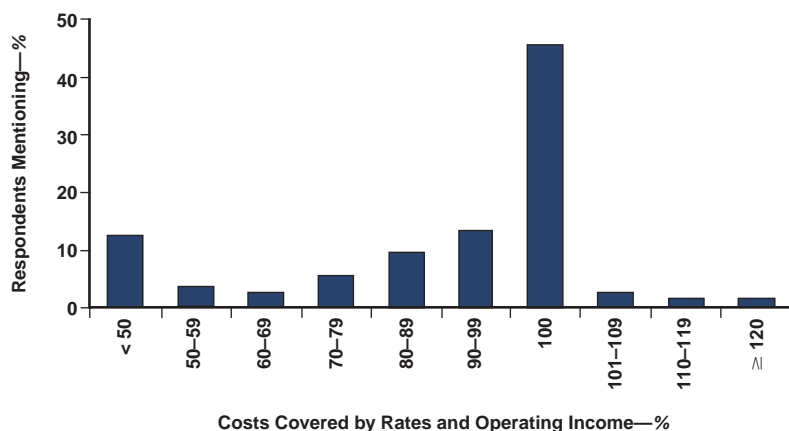
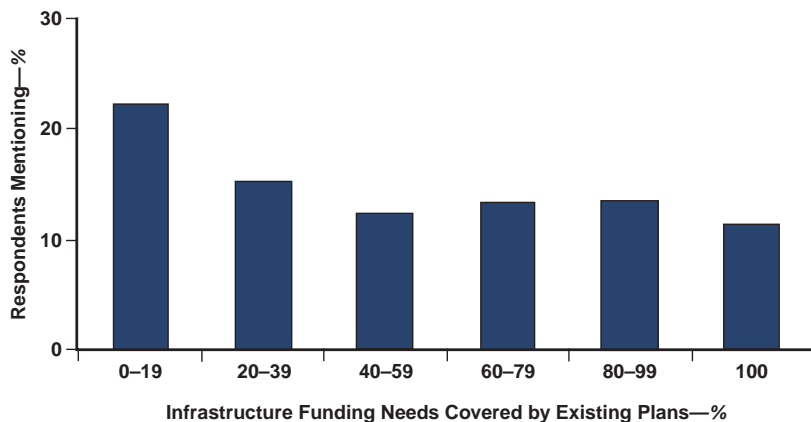


FIGURE 10 Infrastructure funding needs covered by existing plans



needed more than ever. According to a region 5 respondent, “Industry leaders are not proactively making capital commitments when the demands are real and the funding is uncertain. Captains of the water industry (private and public) are leav-

ing, and nobody wants to take on a political decision involving rate-payer impact.” A former utility manager/director commented that “rarely does anyone look at the ‘Big Picture’—their only concern is with what they do in their comfort zone. How can a general manager, director, superintendent, etc., know where to go if they don’t know where they are?”

In 2011, US ratings for industry soundness
five years from now sank to their lowest levels
in the survey’s eight-year history.

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Macro factors. The macro category comprises developments that are beyond the direct control of the water industry yet carry significant consequences for its operations. As in previous years, macro issues—which include global warming, climate change, and population growth and demand—were ranked higher by Canadian survey participants than those in the United States. According to a Canadian government respondent, “Climate change adaptation and mitigation will likely be of much more significant concern to the industry in the long term than it appears to be now, for things like pipe system planning, infrastructure renewal, maintenance and repair costs from possibly more damaging storms, and dealing with seawater intrusion into freshwater aquifers, among other issues.” US survey participants also registered concern, with one consultant predicting that “dwindling water supplies in many population growth areas will hamper economic development, and this will be made more

severe by climate change.” A respondent working in technical services noted, “Because of the budget deficit, utilities are acting in a response mode (addressing infrastructure issues) and not planning and preparing for the demographic,

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environmental, and climate change-related needs. Utilities may have to scramble to catch up.”

Most of the participants in the annual SOTI study come from the ranks of the utility personnel who treat and deliver water and the service providers who supply goods and services to support them. Asked to rate their concern about the current national economy on a scale of 1 (not at all concerned) to 5 (very concerned), about the same percentage of both groups (approximately 67%) registered 4s and 5s.

Utilities in particular are finding it increasingly difficult to keep their heads above water. Utility sources of capital (Table 3) showed an increased reliance on bonds, following a two-year period in which dependency on bonds was down. Operations and tap fees were expected to provide more than half of capital funds, with bonds representing another quarter of funding. The remaining needs were expected to be met by loans, grants, and other sources (often reserved funds).

Now more than ever before, utilities need to price treated water to fully recover not only operational costs but also to meet regulatory requirements and ensure timely infrastructure maintenance

and replacement. Currently only about half of utilities can cover all of their costs (after capital projects) through rates and operating income (Figure 9). At the opposite end of the spectrum, 12% of utilities reported that less than 50% of their costs are covered.

The need for realistic pricing becomes even more essential in a hard economy. Utilities are seeing industrial and residential users conserve more to save money, thus decreasing utility revenues. In many cases, the customer base is taking a hit as businesses shut down and customers lose their homes to foreclosure. Although the majority of utilities reported having instituted rate increases in the past two years, some 24% have not and about 13% of these have not raised their rates in more than five years.

Funding for infrastructure is tenuous at many utilities, with only 11% reporting that their existing plans will cover their entire infrastructure funding needs and nearly a quarter stating that less than 20% of their needs will be met (Figure 10). When utilities were asked to rate the condition of the various components of their infrastructure, raw/incoming distribution and treated/downstream distribution received the lowest scores.

The SOTI questionnaire also explored utility attitudes about regulations and consolidation. Asked to

TABLE 3 Utility-expected sources of capital for 2011

Source of Capital	Percentage Expected in 2011
Operations (excluding tap fees)	43
Tap fees	11
Bonds	24
State revolving loans	7
Other loans/debt	6
Grants	4
Other	5

rate their levels of concern about various regulatory issues, water providers seemed more wary of the ambiguous “emerging contaminant” category than known contaminants that have been working their way through the regulatory development process. The survey also included a series of statements about regulatory issues and asked respondents to what extent they agreed or disagreed. Respondents advocated for more cost–benefit analyses when future regulations are being considered and in general saw no need for additional regulation. For the statement “Current regulations are appropriately supported by scientific data and perspective,” utility personnel were fairly evenly split, with just slightly more agreeing than disagreeing. They also tended to believe that they are able to adequately handle the current set of regulations.

The majority of utility professionals did not envision consolidation in their future, with only 20% seeing it as a likely prospect. Within this group, most (58%) believed they were more likely to be absorbed into a larger utility, whereas 26% thought their utility would absorb a smaller utility or utilities, and 16% felt the consolidation process could go either way.

On average, utilities anticipated upping their capital spending just slightly this year. As would be expected, the most pressing needs—infrastructure rehabilitation/replace-ment and improvement to meet regulations—took priority over increasing storage capacity and capacity expansion. Among service providers, aside from slight increases in online advertising and presence at smaller regional conferences and conventions, spending on upcoming major marketing and sales efforts was projected to stay at about 2010 levels. With regard to expenses they have in common, utilities and service providers anticipated spending slightly more on salaries and workforce training while cutting back on out-of-town travel and conferences/conventions.

CONCLUSION

The first five SOTI reports looked ahead and focused on charting a course for a brighter tomorrow. By the 2009 survey, participants were vocal about their economic stresses but still optimistic. In 2010, there was hope that financial woes would soon lessen, but even that glimmer of optimism has been extinguished as the economic recovery drags on. Yet, with all the frustrations and worries expressed by 2011 SOTI participants, their comments also communicated something more:

- pride in their industry and the essential service it provides,
- determination to do whatever it takes to continue to deliver high-quality water to the public, and
- willingness to try technological advances and explore innovative approaches.

Several respondents stressed that now is the time to wholly commit to integrated water resource management as a means of fostering sustainability. Many were aware that their job today was not only to serve as water’s stewards but as industry advocates as well.

The SOTI study is all about perception, i.e., how water professionals perceive their industry and its challenges. It is said that even a subtle shift in perception can make the difference in overcoming obstacles. If AWWA and its members work together to turn the industry’s challenges into opportunities, the industry should be able to weather the vagaries of these uncertain times and emerge stronger when the skies clear. “It’s clear from this year’s report that the tough times are not over by a long shot,” said AWWA President Jerry Stevens. “The key for water professionals in the short term will be to manage their limited resources to address real risks and real needs. AWWA will be there to assist them in understanding the water landscape, prioritizing their needs, and achieving long-term sustainability.”

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ABOUT THE AUTHOR



Maripat Murphy is a contributing editor to JOURNAL AWWA and has written on a variety of water-related topics for AWWA

publications. A Denver-based consultant, she provides writing and editing services to corporations, professional associations, nonprofit organizations, and individuals. She holds a BA degree from Princeton (N.J.) University. Murphy can be reached at mpmnc@estreet.com.

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