Thematic Week: Water and City

Thematic Axis: Sustainable Financial Tools and Their Effect on Demand

Title of the Paper: Beyond Privatization: Lessons from the upper Midwestern United States and the Canadian Province of Ontario

Paper Author: Gary Wolff, P.E., Ph.D.[1]
[1] Vice Chairman, California State Water Resources Control Board, and Research Affiliate, Pacific Institute for Studies in Development, Environment and Security, 654 13th Street, Oakland California USA 95814, electronic mail: gw@pacinst.org telephone: 510 823 3935, facsimile: 510 886 8403

Summary:

Water managers face significant challenges meeting the water supply, wastewater collection and treatment, and stormwater management needs of the communities they serve. Numerous solutions have been proposed, including private sector involvement, known generally as privatization or public-private partnerships.

The debate over privatization has overshadowed discussion of the determinants of performance. Research on water systems in the upper midwestern United States of Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin, and the Canadian Province of Ontario, demonstrates that 'public versus private' is not the bright line that separates success from failure. Instead, performance depends on effective staffing, consistent public support for sufficient funding, better asset management systems, performance measures and rewards, and more stakeholder involvement and transparency. These lessons extrapolate to other regions of the United States, and beyond.

This paper summarizes research and examples that will assist urban and rural municipal-level decision-makers to assess problems, identify possible solutions, and choose among those solutions. It provides practical information about improving the effectiveness of water, wastewater, and stormwater governance systems, whether public or private.

Key-words: Privatization, public-private partnerships, water utility restructuring

1. Introduction

Four related challenges are prompting water utility restructuring in the United States (US) and Canada, according to our research: chronic under-investment, new regulatory standards and requirements, heightened national security concerns, and limited financial resources.

Water-related services are capital-intensive compared to other utilities such as electricity, natural gas, and telecommunications. Measured by the ratio of net utility plant capital costs to annual operating revenues, water utilities are more than twice as capital-intensive as electricity and nearly three times as capital-intensive as natural gas (NRC, 2002). Due to many years of under-investment – often in underground assets like water pipes and sewers – the US Environmental Protection Agency estimates that $68 billion of water and wastewater infrastructure investment is needed over the next twenty years in the seven US states covered in our research (Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin).

Municipalities and drinking water utilities are still responding to the 1996 amendments to the Safe Drinking Water Act (SDWA), and a significant number of upper Midwestern US community water systems still do not meet all EPA health-based standards. These states also face the challenge of ensuring safe water to over 41,000 non-community water systems (e.g., schools, rest stops), roughly 40 percent of the non-community water systems in the entire US. These non-community systems typically serve a limited number of people on a year round basis and require extensive technical assistance relative to the number of people served. Further, these states contain 358 of the roughly 750 combined wastewater/storm water systems in the US. Many of these systems have not yet met minimum federal standards for preventing discharges or received approval for long-term plans to prevent storm water overflows.

The US EPA "Action Plan" (2004), a collaborative effort between the EPA, federal partners, the water industry, public organizations, and the emergency response community, identifies critical research and technical support needs in the area of infrastructure protection. Implementation of the plan will affect nearly every municipality in the US, almost certainly without full federal funding. National League of Cities financial survey (Pagano, 2004) found that (74%) of responding financial officers in the Midwest felt economic conditions were deteriorating rather than improving. The US economy has weakened since then. Even those Cities and Special Districts that pay for water services through rates (rather than through taxes) are reluctant to raise rates, both because it is politically unpopular and because water and wastewater rates have increased on average two percentage points faster than the rate of inflation since at least 1998. Average rate increases of about 3% above the rate of inflation for the next 20 years could fund current estimates of needed improvements. Some communities, however, cannot afford to pay that much and other communities require even higher rate increases to meet their needs.

Numerous strategies have been proposed to meet these challenges, including privatization, regionalization, consolidation, and municipalization. Privatization of water and wastewater services has and is being hotly debated (see Gleick et al., 2002, for a discussion of the many variations of private involvement, and for some specific suggestions about how to simultaneously manage water as an economic and a social good). Proponents have typically argued that the private sector will deliver more or better services per dollar of cost and often claim that private sector involvement is the best solution for all challenges. Opponents argue that the profit motive will eventually lead to higher rather than lower costs; that workers will lose their jobs or benefits; and that local control over decisions will be diminished or lost. Proponents argue that water services should be supplied by businesses, like food or energy and other essential goods. Opponents often feel that water is too essential and fundamental a public good to allow much private involvement.

The number of contracts for operation of publicly owned assets tripled in the US between 1997 and 2002 (Reinhardt, 2003). The three largest contracts in the US for operation of publicly owned wastewater assets are located in the Upper Midwest: Gary and Indianapolis, Indiana; and the Milwaukee, Wisconsin, Metropolitan Sanitation District (MMSD) One of the largest, most recent, and most closely watched contracts for operation of publicly owned water assets in the US is also in the region: Indianapolis, Indiana. At least six large or medium-sized companies operate in the region, including the three largest water companies in the world: Veolia Environnment, United Water, and American Water. Nonetheless, the heightened interest in privatization has not led to widespread privatization of water systems. Our research found only about 90 contracts for private operation of the more than 4,000 publicly owned systems in the region. There are also nearly 4,000 small privately owned water systems in the region, mostly in situations where water is incidental to the business, such as mobile home parks or homeowners associations. These small systems probably serve only 15% of the population in the region. However, most small systems are below the state-by-state size thresholds for economic regulation. Only about 200 investor-owned water and wastewater systems are economically regulated in the upper Midwestern focus area of this study.

2. Materials and Methods

Wolff and Palaniappan (2004) suggested that 'public versus private' is not the primary determinant of water and wastewater utility performance, based on examples from around the world. We investigated this thesis in more detail through case studies in the upper Midwestern US and the Canadian Province of Ontario. The case study work reviewed published and private documents (e.g., contracts and local laws), and included telephone interviews with elected and appointed governing officials, utility managers and employees, and external stakeholders (e.g. unions and customers). The full research effort is described in Wolff and Hallstein (2005).

3. Results and Discussion

Our research found six characteristics of high-performance organizations, all of which may be present in public or private (or mixed) forms of organization. Five of the determinants are permanent features of successful organizations: effective staffing, consistently sufficient funding, detailed asset management systems, performance measurements and rewards aligned to organizational objectives, and decision processes that are transparent and open to the public.

The sixth determinant is relevant to the process of restructuring. Successful organizations avoid what we call "false starts." The false start is typically a situation where one or more community leaders decide they know the problem and the answer (often, "hire a private company"), and then push that solution through the political process. Because many members of the community are not yet clear that a problem exists, what its symptoms are, what the causes of the symptoms are, and what the range of solution options is, they are often disengaged from the restructuring process, at least initially. When they become involved, they are often disgruntled because these questions have not been answered. Political and legal fights may then erupt, often focused around the role of the private sector. Lawsuits may be filed or referenda to restrict the power of elected officials may be placed on the ballot. For example, New Orleans, Louisiana and Stockton, California voters approved referenda that require direct approval of the voters for city contracts in excess of a specified dollar sum. Both referenda were in response to false starts in water system restructuring.

Specific examples of the six determinants of success are presented below in the form of "Do" and "Don't" lessons. The lessons summarize the best and worst practices that we found.

The value of our research is that it can help communities learn from the experiences of others. There are many ways to succeed so long as major mistakes discovered in other venues are avoided.

Effective Staffing

Do improve worker productivity and reduce excess jobs (if any) by investing in human resources. There are many reasons that public agencies can develop too many or the "wrong categories" of staff over time. Paradoxically, investing in people can be the best way to effectively reduce a workforce, either through attrition or transfer to more appropriate jobs elsewhere in government service. The Akron Public Utilities Bureau in Northeast, Ohio learned that training tailored to their employees and their jobs, including development of a specialized training program with a local university, was an effective way to reduce labor costs with no harm, and many benefits, for workers.

Do consider outsourcing non-core functions. Hiring a private contractor to operate an entire system can be an appropriate solution. But so can outsourcing of non-core functions rather than the entire operation. The Butler County, Ohio Department of Environment Services helped control its operating costs by outsourcing payment processing, a non-core function that others are more efficient at doing.

Do communicate clearly with workers and unions, if large numbers of jobs are transferred between employers (e.g., public to private, or private to private during a contract transition). The Milwaukee Municipal Sanitation District (MMSD) developed a standard form contract that was reviewed and approved by the union prior to solicitation of proposals for operations. The Indianapolis wastewater utility contract had similarly effective and clear communications. Unfortunately, the Indianapolis water utility transition involved conflicting communications about benefit levels for workers that created tension that could have been avoided. (The operations contract called for the value of benefits to be maintained, while the Mayor had previously stated that the specific benefit package would be unchanged.).

Do plan for the additional contract management resources if outsourcing, especially full operational contracts. As a taskforce of the National Research Council (2002) has pointed out, the skills to manage a contract are entirely different from those required to manage an operation. The MMSD budgeted for a contract management team staffed at a level equivalent to 3-4 full time employees (FTEs). This expense was small compared with their anticipated savings of $1 million per month.

Do not assume that companies or managers within one company are the same. The particular people involved in any situation are a critical element of success or failure. The MMSD contract requires that replacement of the local private company manager must be approved by MMSD, an action that has taken place once without event. The Indianapolis contract for water operations does not have this type of clause, and some citizens in Indianapolis have blamed changes in the private company senior management team for a variety of problems. We cannot evaluate the accuracy of these claims, but note that it is not unusual in some types of contracts to specify named persons who will perform the contracted for services, precisely because the choice of manager or professional can be critical to getting the desired results.

Ensure Consistent and Adequate Funding

Do control costs by looking for and capturing economies of scale and scope. Small communities are perhaps the most challenged, financially, in the focus area of this study. One very effective way to reduce cost is to identify and capture economies of scale or scope, through cooperative arrangements or outright consolidation with other public agencies or private companies. The Lansing Board of Water and Light achieved greater economies of scale in its core

operations through a combination of retail contracts to manage other operations, wholesale contracts to re-sell water, and asset transfers from other municipalities to the Board. Some other functions, primarily in distribution, remained with the towns. The "hub and spoke" area project with Veolia has allowed the towns of St. Michael, Albertville, and Hanover to benefit from the economies of scale within Veolia.

Do control costs through innovative procurement structures. One of the drivers of private sector involvement has been the potential for cost reduction from using the design-build (DB) approach rather than the traditional design-bid-build (DBB) approach. But DB involves some risks that DBB does not, which is one reason that DB is not legal in some states. The design-build-operate (DBO) approach is one way of addressing the risk issue associated with DB, but there are other innovative procurement structures that may also reduce cost and manage risk effectively. Sioux City, Iowa is using a design-operate (DO) approach rather than DBO, because DB is illegal in Iowa. And a DB approach, with an option to award an operational contract if the DB work is completed in a superlative manner, has been used in Cle Elum, Washington. The incentive "power" of the operational option was apparently used successfully to offset the incentive for DB contractors to use lower-quality materials or otherwise cut corners in design and construction.

Do maintain financial credibility by discussing the value of water services with customers periodically. Customers are well aware of the bills they receive. They think less often about the benefits of the services they receive. Discussing with customers the value of these services, and the value of other services that might be provided, provides a pathway for continuous improvement in the services offered. It also builds a mutual understanding of the cost of maintaining the system, which in turn makes rate increases when needed much more politically palatable. This communication effort should be part of an ongoing, permanent communication program, as in some examples discussed below.

Do not fail to control costs by assuming that bigger is always better. Economies of scale are important to identify and capture. But they do not always exist or sometimes exist but are difficult to capture. They may not be relevant to all functions or services, or the effort to develop economies of scale may not have a large impact on the organization if the costs represent a very small portion of the overall organization's costs. Focus on functions where there are clear economies of scale and where the impact is greatest on the overall financials. Newport, Kentucky, for example, sold its system to another public agency in an attempt to reduce costs through consolidation but has since incurred large rate increases.

Do not fail to control costs by underestimating potential contract risks. Entering into a contract involves risk, just as getting married creates a risk of divorce that does not exist for single people. A good contract is essential; but enforcing or defending even a good contract can be costly. Advocates of private contracts sometimes claim that the private utility or private operator is assuming all risks. That is simply not possible. For example, although the transfer of operational risk to the private contractor in the City of Stockton, California water/wastewater/storm water agreement was quite impressive, the City was nonetheless involved in litigation over the contract for years, and subsequently terminated the contract. Entering into the contract created a risk that did not exist prior to the contract award.

Manage Assets Better

Do inspect all assets, especially underground, periodically and especially if considering a contract. One of the biggest drivers of future water utility costs is the current poor condition of assets, especially underground assets that have not been visually or otherwise inspected in many years. Atlanta, Georgia found to its regret that the relatively unknown condition of its underground water assets was a constant source of tension with the company hired to run its water system;

eventually, the contract was terminated at least in part due to arguments over who should bear the costs of repairing these assets. Even if an operational contract is not being considered, periodic inspection of every asset in the system is one of the most important steps a utility can take to control future costs.

Do tailor the asset management system to the needs of your utility. Well more than half the cost of most water systems is related to capital investments and their maintenance. If you do not know their condition based on direct observation or testing – especially underground assets – neither public nor private operators will be able to control costs or prevent unexpected service problems. That said, it would be inappropriate for a small rural system to employ fully developed risk management tools, just as it would be inappropriate for a very large utility to be satisfied with an accurate inventory of assets. A large city with millions of customers such as Detroit, Michigan, for example, used a relatively complex combination of risk-based asset management tools to create its capital improvement plan; in contrast, a small utility such as Mesa Consolidated in California, with fewer than 25,000 accounts, has limited itself to ongoing asset inspection and tracking.

Do not under-invest in capital projects because it is easier to do so. This decision is usually in part a public decision, even when a private operator or utility is involved. It takes political will to make long-term investments. It is difficult to raise rates. Nonetheless, that is sometimes necessary. Greater efficiency or other techniques to reduce cost cannot solve all problems without rate increases. The MMSD, for example, seems to controlled costs by hiring a private contractor but also needed to spend $2.2 billion, plus interest, to upgrade wet weather sewer facilities. While not easy, the officials of MMWD were able to work with their community to develop support for these expenditures.

Do not sell public assets without a buyback clause in the contract. As Pekin, Illinois has discovered, using eminent domain to condemn and purchase the assets of an investor-owned water utility is not simple. Although Peoria, Illinois has recently chosen to not purchase the assets of the investor-owned water utility that serves them, because the appraised value was too high, their right to purchase those assets was established by an old contract in which they sold the original public system to the predecessor of the current investor-owned utility. Their situation, legally, has been easier than that of Pekin. Newport, Kentucky recently sold its water system to a regional agency, which has since raised rates far more than was expected at the time of sale. If Newport had the authority to repurchase those assets, they would have more options to control recent or future rate increases.

Do not think excluding the private sector from water system operations or management maximizes public control. Certainly ownership of assets and responsibility for day-to-day operations are dimensions of control. But inadequate skill or poor knowledge of the condition of assets, which means they might break or fail to operate unexpectedly, are also dimensions of control. Excluding the private sector does not address all factors that reduce control over the system. For example, in the Atlanta, Georgia water contract, neither the city nor the private contractor had much control over costs associated with deteriorating underground assets. Increased control of assets requires at minimum that you know with certainty the condition of your assets, regardless of ownership.

Measure and Reward Performance

Do measure and reward or penalize performance. Management structures that do not measure and reward achievement of performance objectives inevitably become inefficient. Performance bonuses are one way of rewarding private companies, as is allowing them to keep any cost reductions they achieve below a fixed fee that is paid for their services. Performance penalties in a contract, such as those for odor complaints in the Sioux City contract, are also beneficial. But

performance measurement, rewards, and penalties are also appropriate in public systems. The City of Baltimore Citistat system has saved more than $100 million since its inception in 2001. An example from the water department is that overtime for meter readers has declined to zero for three consecutive years without a reduction in the quality of service. Louisville Water, a public corporation, has used bonuses at all levels of the utility to increase efficiency and to create a culture of performance among its staff. In the case of public utilities, even if bonuses are not legal or appropriate, promotions and continued employment can be clearly linked to achievement of performance objectives. In all cases, these measures and rewards need to be tightly linked to the overall strategic goals of the municipality or organization.

Do focus performance specifications on critical issues. It is not possible to measure every performance dimension, especially in smaller communities. But one can focus performance specifications, and rewards or penalties if appropriate, on the most critical issues identified in the best practice process described above. In Sioux City, Iowa, for example, the contract for operation of a new wastewater treatment facility includes an 18-page specification addressing odor control.

Do report performance measures to the public periodically. Public reporting of performance measures is an effective way to keep managers, both public and private, on their toes. The Australian water industry has used this technique to ensure that its publicly owned water corporations are nonetheless subject to competitive pressure from the public. If a water retailer, for example, is slower in responding to customer complaints than other retailers in other cities, citizens and businesses will know that and can question whether it is reasonable or not, given local circumstances.

Do consider preparing operational specifications suitable for a contract, even if private operation is not being considered. When Hamilton, Ontario did not obtain acceptable bids for continued operation of a system that had been operated privately for more than a decade, they decided to operate the system with public forces in accordance with specifications they had prepared for solicitation of bids. The existence of the specifications created greater accountability for the public operation than would normally exist. Although this situation was accidental in Hamilton's case, it suggests that preparation of operational specifications for a system may be beneficial even when private operation is not being considered. Doing so can serve as an objective basis for performance measurements and rewards or penalties, as described above.

Make Decisions in Open and Transparent Processes with Public Participation

Do maintain public involvement and communications on a permanent basis, not just during restructuring. Public involvement and communications is important on a permanent basis, not just during restructuring. Both Butler County and Akron, Ohio have developed extensive communications plans and procedures that they report have been well worth the effort, both during and since they restructured their water systems. All of the problem discussed in this manual, but especially labor relations and the issue of inadequate public support for needed investments, will be easier to solve if continuous communications have been taking place. The public is unlikely to respond positively when asked to support a rate increase if they have not heard from you in years.

Do avoid even the appearance of corruption. Even the appearance of corruption can create enormous costs for a community. For example, people may refuse to support rate increases even though they know new capital facilities are needed. One way to prevent even the appearance of corruption is to strictly adhere to a formally adopted decision process. Hamilton, Ontario did this and has survived a difficult transition – including some legal challenges – with minimal cost and political upheaval. Another way to prevent corruption is to be certain that sufficient time, competition, and public notice are involved with restructuring decisions. Some of these characteristics were not part of the decision process in Lafayette, Indiana; Stockton, California; or

Indianapolis, Indiana. All three communities have subsequently become embroiled in costly legal and political issues, including accusations of corruption.

Do periodic third-party assessments. External review is more credible than internal review, although the latter is also important. The City of New Orleans and the MMSD have successfully used third-party reviews to improve their performance and to build credibility across a wide range of stakeholders. The technical advisory committees (TAC) in the City of Indianapolis were specified in the operating contracts for this purpose. The TAC for the wastewater contract seems to have functioned reasonably well in that regard, but initial understaffing and commitment to the TAC function in the water contract has been a problem. Contracts should include a requirement for this type of review, and public agencies should commit to periodic external review as well. Unfortunately, the contracts we reviewed did not include this type of requirement.

Do exceed minimum legal requirements. In some states, contracts for municipal operations are not necessarily public documents. Similarly, codes of conduct for municipal employees are often not required by law. But exceeding the minimum legal requirements can be greatly enhance the credibility of a utility or government agency, creating "social capital" that is valuable when a serious problem emerges. The City of Toronto, for example, recently fired employees for violating a code of conduct related to possible corruption, even though the employees had not yet been indicted or convicted. Similarly, there is much to be gained and little to be lost by making all final City contracts public.

Avoid False Starts

Do involve people with a wide variety of background and agendas in the analysis of symptoms and root causes. People's perspectives naturally tend to reflect their professional training and may also reflect their own personal agendas (e.g., job security). A widely representative group of people will tend to synthesize these perspectives into more robust, and perhaps unexpected, solutions. Broad participation also builds support for potentially controversial solutions and reduces the cost of defending decisions after they are made. The Lansing Board of Water and Light successfully used a task force to develop a regional solution that captures economies of scale but maintains local control.

Do identify exactly which problem symptoms restructuring must solve. For example, the Milwaukee Metropolitan Sewerage District (MMSD) knew their primary challenge was to control the cost of constructing and operating new facilities to reduce combined sewer overflows. Consequently, they focused on solutions that seemed likely to control cost and reduce financial risks. Detroit, Michigan knows that their asset base is very large and costly; consequently, they are focused on developing a better understanding of the condition of their assets and development of plans for future repair, maintenance, replacement, or expansion of assets.

Do figure out community willingness to pay for various levels of service improvements when improvements are planned (i.e., at least qualitatively compare benefits with costs). "Technocrats" often decide the level of service they think involves a reasonable balance of benefits with costs. For example, the MMSD has spent more than $2.2 billion to reduce sewer overflows from 50+ per year to around 2-3 per year. And Sioux City, Iowa's specifications for odor control at their new wastewater treatment plant suggest that no more than six odor complaints per year are acceptable. But in Milwaukee, some citizens have perceived even a few overflows per year as too many, and some citizens in Sioux City may feel the implicit standard for odor control is too lax. An important part of the restructuring process is to be sure community members are aware of the benefit-cost trade-offs involved in selecting a targeted service level, and that the final choice of service level reflects community values not just technical expert opinions.

Do figure out affordability for community and sub-groups if current or future rates are believed to be too high. Unless a community knows who will have a hard time paying projected future rates, it cannot work effectively to prevent that hardship from occurring. In addition, affordability includes some subjective opinions, so clear descriptions of assumptions and results of analysis are especially important.

Do not jump to solutions before considering symptoms, causes, and the full range of solution options. Stockton, California had minimal community involvement prior to issuance of a request for proposals. That is, the decision that a private operator was the best solution was made without the informed consent of a wide range of stakeholders. This is an example of the "false start" problem described in the best practice process, above. The consequence has been a costly court battle and approval of a citizen referendum that requires all future large contracts to obtain citizen approval. This is arguably a poor way to run a city, but a majority of citizens felt it was the only way they could affect the political process.

Do not assume the private sector is inherently more efficient or less costly. A number of statistical analyses reject this claim (see Byrnes, et. al., 1986; Fox and Hofler, 1986, and Estache and Rossi, 2002). There are cost factors that both drive up and drive down private company costs relative to public agency costs. When cost savings exist, they result from some specific circumstance that can be identified and evaluated, not an inherent advantage of private over public.

Do not assume public agencies can be as efficient as private ones without a strong culture of performance and rewards for performance. Although it is true that many of the methods of improving efficiency can be executed by private companies or public agencies, implementing such changes in public agencies requires a strong culture of performance that is too often absent. In both Akron and Butler, Ohio, the key to achieving better performance was to undertake time-consuming and challenging culture changes, with some mistakes along the way.

Do not let estimates of cost savings dominate decisions. There is more than one reason a community might want (or not want) private involvement in their water system. Estimates of future cost savings from any course of action, private involvement or otherwise, are uncertain for a variety of reasons and become more uncertain during the planning period (e.g., 10-30 years). It is important to make such estimates and to include them in the decision process. But the "fallacy of misplaced concreteness" should be avoided. Estimates are only as good as the assumptions and data involved and are only one dimension of an important decision with non-financial consequences for the community. Promising enormous savings, then having to raise rates later because the assumptions underlying the estimates turned out to be incorrect,undermines community support for needed investments over time. For example, about $38 million of estimated operational savings in the 20-year Stockton contract resulted from assumed future rates of inflation well below the average actual rate in the last 20 years. If future inflation were like past inflation, none of these operational savings would materialize; in fact, private operation would cost about $2 million more than public operation was estimated to cost (Wolff, 2002).

Do not assume the private sector can or will carry risks at lower cost than public sector. This may have been true a few years ago when private companies were very eager to enter the water market, but the "appetite for risk" of private companies seems to have recently declined dramatically. Both Sioux City, Iowa, and Hamilton, Ontario report companies asking for significant payments if they are to take on risks normally carried by the municipal owner of assets. In Hamilton, the final decision to return to public operation was driven in large part by the fact that the "risk premium" included in the one proposal that met all technical standards was approximately $25 million per year, which was equal in size to the city's previous annual payment for private operation and its own estimate of the annual cost for operation with public forces.

Companies may be capable or willing to bear risks for less than a municipality can, but there should be a plausible rationale for that rather than assumption (e.g., preferential rates from insurers due to a company's operating history or size).

4. Conclusions

The choice of public versus private utility governance structure is important because it involves social values such as public health, affordability of essential services, and the general approach of each community to satisfaction of basic needs. However, the debate over water privatization has overshadowed discussion of methods for achieving real, tangible performance improvements regardless of whether the utility is public, investor-owned, or somewhere in between. While values and beliefs certainly have their place in any decision about utility restructuring, allowing values and beliefs to overshadow the factual and analytical part of the decision often leads to costly outcomes that polarize and divide communities. Experience in the upper Midwestern US and the Canadian Province of Ontario shows that with respect to performance – how much or how many services get delivered per dollar of rates paid by customers – the choice of public versus private is not nearly as relevant as the six determinants of success this paper describes and illustrates through specific examples.

5. References

Byrnes, Patricia, Shawna Grosskopf, and Kathy Hayes. 1986. Efficiency and Ownership: Further Evidence. Review of Economics and Statistics 68(2): 337-341

Estache, Antonio, Martin A. Rossi. 2002. How Different is the Efficiency of Public and Private Water Companies in Asia? The World Bank Economic Review 16 (1): 139-148

Fox, W., R. Hofler. 1986. Using Homothetic Composed Error Frontiers to Measure Water Utility Efficiency. Southern Economic Journal 53 (2): 461-77

Gleick, Peter H., Gary Wolff, Elizabeth L. Chalecki, and Rachel Reyes. 2002. The New Economy of Water: The Risks and Benefits of Globalization and Privatization of Fresh Water. Pacific Institute for Studies in Development, Environment, and Security: Oakland, California, 48 pp.

National Research Council (NRC). 2002. Privatization of water services in the United States: an assessment of issues and experience. National Academy Press: Washington, D.C.

Pagano, Michael A. 2004. City Fiscal Conditions in 2004. National League of Cities: Washington.

Reinhardt, William G. 2003. PWF's Seventh Annual Outsourcing Survey. Public Works Financing: 1

US EPA. 2004. Water Security Research and Technical Support Action Plan. Environmental Protection Agency: Washington, DC.

Wolff, Gary, and Meena Palaniappan. 2004. Public or Private Water Management? Cutting the Gordian Knot. Journal of Water Resources Planning and Management. January/February.

Wolff, Gary, and Eric Hallstein, 2005, Beyond Privatization: Restructuring Water Systems to Improve Performance, Pacific Institute for Studies in Development, Environment, and Security: Oakland, California. 112 pp. Available: www.pacinst.org