Title: Privatization and Water Service Provision in the United States: A Recommendation for Expanded Oversight and the Development and Adoption of Best Practices

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Abstract: There is much debate in the literature about the strengths and weakness of water service provision privatization. Much of the literature has focused on water privatization in developing countries. In contrast this paper will provide an overview of privatization in the United States with a focus on lessons learned and recommendations on how issues such as equity and sustainability should be addressed moving forward. The debate about water privatization highlights questions of a philosophical and ethical nature, raises questions about who has decision power regarding access and equity and questions if there are incentives for private corporations to pursue sustainability. What is missing are recommendations for how to start addressing these questions. How does one being to address the issues surrounding privatization of water provision services? This paper aims to provide recommendations for oversight that goes beyond financial controls and water contaminants to include environmental and social issues and recommends best practices be adopted by water service providers in the development of contracts between municipal entities and private corporations to ensure that environmental and social issues are considered from the beginning.

Key Words: Privatization, Sustainability, Best Practices

Introduction

"Water is a gift from God."
"Yes….but (s)*he forgot to lay the pipes"* (Glennon 2009).

Access to safe and reliable drinking water is what often separates the United States from developing nations throughout the world. Drinking water is provided to individuals in the United States in a number of ways. Publicly owned and operated municipal systems are where a small majority of Americans (number of individuals) get their water today, though the majority of community water systems (water providers) are small and privately owned (See Figure 1) (Community Water Survey 2002). Privatization can be done in a variety of ways and result in a variety of outcomes. While a move to privatize is often done for perceived increases in efficiency, questions around the private sectors ability to handle issues of equity and conservation are raised. Privatization also raises questions of a philosophical and ethical nature. Is water solely a commodity and who decides the value of water? Should everyone have equal access? What should be reserved for the environment? This paper provides suggestions on how to start addressing these issues within the area of municipal water providers considering the privatization of water provision services with an aim to provide recommendations that work for the United States but should be considered anytime a government entity is faced with the question of turning to water service privatization.

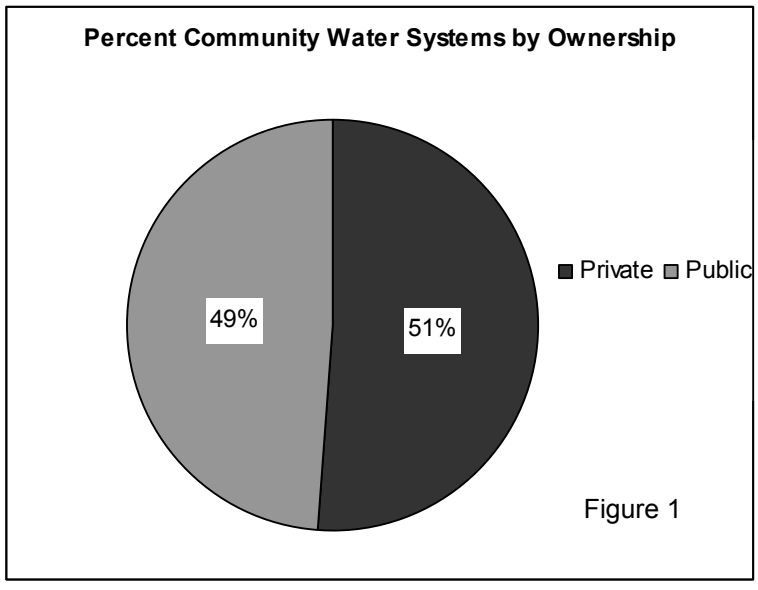

Figure 1

*Information for Figure 1 provided by the Community Water Survey 2000

Privatization in the United States

Today the water distribution systems delivering the most water (see Figure 2) in the United States are publicly owned and operated, but this has not always been the case. Water privatization grew quickly in industrialized nations as the benefits of water connections for public health and firefighting capabilities in urban areas became apparent. Early in the nineteenth century the majority of the population was provided water by private companies. Several

problems arose with private water utilities delivering service to the public. Water service was often provided to wealthier parts of an area while ignoring the poorer areas. Private companies often failed to invest enough capital in infrastructure systems to ensure equal and adequate distribution to all residents within the service area. Profit maximization often took precedence over water quantity and quality leading to failing systems and dissatisfied customers. At the end of the nineteenth century local municipalities began to take over water provision services when it became widely recognized by the municipalities that private companies were not providing adequate service to citizens. "By the year 2000, private companies served only 15% of the American public" (Glennon 2005). Recently the trend in water service provision appears to be turning back towards municipalities allowing or seeking private companies to take over water service provision once again (Glennon 2005).

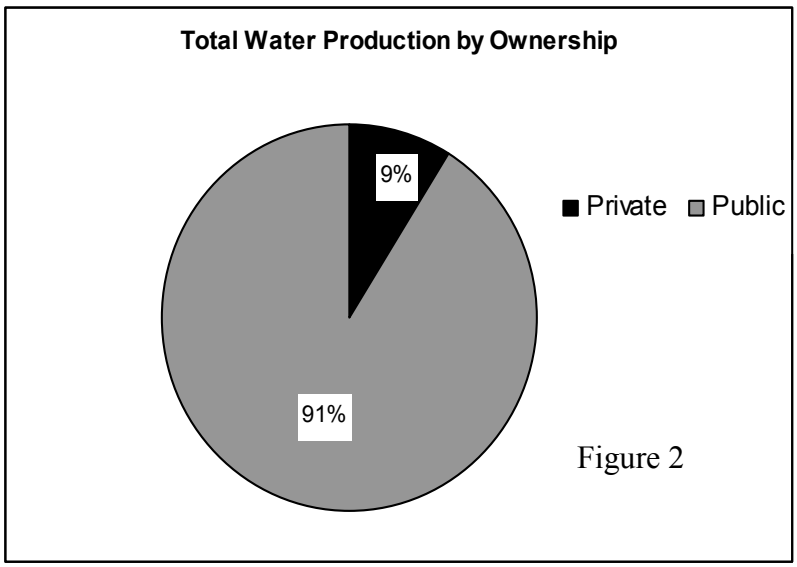

Figure 2

*Information for Figure 2 provided by the Community Water Survey 2000

For the purpose of this paper a public water utility is defined as a municipally owned and operated water provision system. A private water utility is defined as a water provision system owned and / or operated by a private company.

Water systems can vary in size from very small water systems serving 25-500 people to very large water systems serving 100,001+ people (EPA 2010). According to the National Association of Water Companies (NAWC), in 2010 nearly 73 million Americans, almost one in four, receive water service from a privately owned water utility or a municipal utility operation under a public- private partnership. Water systems owned or operated by a private company produce 4.6 billion gallons of water a day which amounts to about 1.7 trillion gallons per year and maintain 100,000 miles of water distribution mains. The private drinking water business is a $4.3 billion per year business (NAWC).

According to NAWC there are currently twelve publically traded private water utility companies (see Table 1) in the United States. Water is truly seen as a commodity when it appears on the stock market allowing anyone to invest in and profit from these companies. International companies such as Suez and Veolia are also present in the United States as well as parent companies of smaller private companies (see Table 2).

Why are municipalities seeking domestic and international water companies to take over water provision services even with a history that demonstrates that privatization in the past has led to unsatisfactory outcomes? There are several reasons why municipalities are once again turning towards privatization. These reasons include fiscal stress, faith in market mechanisms, ideological attitudes and political processes, as will be explored in greater detail below.

Reasons for Privatization

One reason a municipality may turn to privatization of water provision is fiscal stress. Fiscal stress experienced by municipalities stems from attitudes towards taxation. Starting in the twentieth century governments at all levels have tried to cover the need for increased infrastructure and public services through tax increases. At the local level, this trend of increasing direct taxation on the public to fund items such as infrastructure ended in the 1970s (full cost recovery rates for water and wastewater services are present in some areas today). At the same time the transfer of funds from regional and federal governments to local governments has decreased over time (Bel & Fageda 2007). Overall there has been a phasing out of grants for the construction of sewage treatment plants, a reduction in federal contributions for the construction of water development projects, data collection on water, and dam-safety programs increasing the responsibility of state and local governments for overall water management, improvement in infrastructure and water provision to the public (Smith 1992).

"Water related services are capital intensive compared to other utilities such as electricity, natural gas and telecommunications. Measured by a 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" (Wolff & Hallstein 2005). Municipalities that are financially unable to invest the amount of capital

needed to update outdated and decaying infrastructure or meet the increasing demand for service due to growth by putting in new infrastructure often view privatization of as a way to meet that need. One federal estimate calls for $1.3 trillion to replace aging infrastructure of water and wastewater systems within the United States (Jones et al 2004). Infrastructure upkeep and replacement is a financial burden many municipalities are unable or unwilling to meet.

Table 1: Domestic Publicly Traded Water Companies & Their Locations

Company Name	Stock Abbreviation	Location
American Water	AWK	Washington, California, Nevada, Arizona, New Mexico, Texas, Oklahoma, Kansas, Minnesota, Iowa, Illinois, Arkansas, Tennessee, Kentucky, Indiana, Wisconsin, Michigan, Ohio, West Virginia, Pennsylvania, New York, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, Virginia, North Carolina, Alabama, Georgia, Florida, Hawaii
American States Water Company	AWR	California, Arizona
Aqua America	WTR	Pennsylvania, New York, Ohio, North Carolina, Illinois, Texas, Florida, New Jersey, Indiana, Virginia, Maine, Missouri, South Carolina
Artesian Resources Corporation	ARTNA	Delaware
BIW LTD	BIW	Connecticut
California Water Service Group	CWT	California
Connecticut Water Service, Inc	CTWS	Connecticut
Middlesex Water Company	MSEX	New Jersey, Delaware
Pennichuck Corporation	PNNW	New Hampshire
SJW Corporation	SJW	California
Southwest Water Company	SWWC	Alabama, California, Colorado, Georgia, Mississippi, Oklahoma, South Dakota, Texas, Wyoming
York Water Company	YORW	Pennsylvania

Table 2: International Water Companies Present in the United States

Veolia: United States	Suez Environmental : United Water
• 600-plus communities served • 190-plus wastewater treatment plants operated and maintained • 90-plus water treatment plants operated and maintained • 74 industrial wastewater treatment facilities • 35 industrial water treatment facilities • 2,900 employees in North America • More than 2.2 billion gallons of water and wastewater treated everyday • Services to approximately 14 million people in 600 communities	• 600 dedicated employees serving over 7 million people in 24 states • The operator of 226 municipal water systems, including 3 of the nation's largest contract services operations • The owner of 20 regulated water utilities • A generator of $800 million in revenue for 2007 • The manager of $2.5 billion in total assets • Responsible for treating 945 million gallons of drinking water daily • Responsible for treating 815 million gallons of wastewater daily

Another reason municipalities turn toward privatization is faith in market based approaches. There is a strong argument that private businesses are more effective and cost efficient in providing service than the public sector (Glennon 2005). This argument is based on the idea that privatization works by introducing competition where there was once a public monopoly. This competition in theory drives prices down in an effort to entice consumers while promoting innovation and efficiency from the companies providing the good. Unfortunately this argument does not hold when an entity is a natural monopoly whether it is privately or publicly owned. Water utilities, with their massive infrastructure needs and large capital investments, are natural monopolies. More discussion of market failure surrounding natural monopolies and how they can be addressed will be discussed later in the paper.

Ideology, including the belief in market forces and their supposed efficiency over public utilities, and the belief that government should play a limited role or a combination of both may result in municipalities turning to privatization. The reduction of government services is often achieved through outsourcing to the private sector (Glennon 2005). Political processes go hand in hand with ideology and can also impact decisions on water privatization. The two strongest motivators for politicians is the desire to get elected and then reelected. The drive to stay in office coupled with their "preference for some policies over others according to their ideological attitudes" (Bel & Fageda 2007) can provide the push for municipal utilities to privatize.

Cost reduction through the appropriate scale of a utility can also be a motivating factor for privatization. Public water utilities are often hesitant to cross jurisdictional boundaries due to policies in place, questions of who should pay and the cost to acquire the amount of supply needed to cover an extended service area. A private company may find crossing jurisdictional boundaries easier allowing for a more appropriate scale of service to several towns in multiple jurisdictions to be served by one infrastructure system lowering the overall cost of operating the system (Bel & Fageda 2007). If the systems are kept under the purview of the municipalities, the scale may be kept small with each individual town responsible for providing water service.

The overall drive for municipalities to privatize is greater efficiency. But does the privatization of a municipal water utility create increased efficiency?

Market Systems & Natural Monopolies

"The choice between markets and governments is a choice between imperfect alternatives."
-Charles Wolf

Market organizations are often seen as the only effective way to structure an economic system. For-profit firms are seen as the most effective and efficient means of production and the best way to ensure that prices are kept in line with costs. Markets allow production to be tailored to the consumers' wants and ability to pay. With market organization the government is limited to the role of establishing and maintaining a body of law to set the rules for the market (Nelson 2003). These beliefs may be oversimplified when it comes to water utilities and miss the complexity that is the reality of economic activity surrounding water provision.

With competitive markets consumer have choices: there are multiple providers of the good and consumers can make a choice to take their business elsewhere if they are unsatisfied with the price or quality of the good. With monopolies there is a sole provider of a good with other providers unable to enter the market and no other options for obtaining the good. Extra protection for consumers is needed when a monopoly is present. The nature of water services and the infrastructure required make them natural monopolies that resist market forces. Water and sanitation services have been called "the last monopoly" in Western countries (Sepalla et al 2001) due to the fact water provision is capital and infrastructure intensive compared to other utilities such as electricity and natural gas (Wolff & Hallstein 2005).

The argument for government provision of utilities that require large infrastructure and capital investments is that there is a market failure (Chamberlin & Jackson 1987). It is not feasible to construct multiple networks and facilities within the same service area. There are major sunk costs, costs that can not be recovered, associated with large infrastructure investments which make justifying duplicate infrastructure to ensure competition unreasonable (Seppala et al 2001). With government ownership of a monopoly consumers are able to express their grievances and preferences through the political process (Beecher et al 1995). With fully private water utilities this is not always the case.

There are several perceived disadvantages of public utilities. One is that bureaucratic requirements and strict adherence to standard operating procedure hamper the pursuit of least cost options. There are often restrictions on procurement and capital expenditures. Bureaucracies often do not have any form of incentive compensation possibly hampering innovation (Wolff & Hallstein 2005). Bureaucracies often face harsh backlash from the public if there is any sort of system failure, change of service, increase to rates or attempts to innovate that do not go as planned. This makes public water utilities wary of deviation from established policy and procedure.

In addition to feeling constrained in regards to innovation and changes in procedures, public water utilities often find it harder to maintain their systems for a variety of reasons. Voters provide a constant pressure to keep rates low. The interplay of local politics, with many politicians at the local level having limited terms reliant on voter approval, adds to the problem as they are forced to fight for votes. Political actions that gain votes are often in conflict with political actions that would benefit the public water utility (Levin et al 2002). Private water utilities may be more successful in raising investment funds. Private water utilities are somewhat insulated from public pressures and while they are subject to utility regulation, this environment is easier to raise rates for investment funds. While these higher rates do not ensure that the needed investments in the system will be made they are a necessary condition for maintenance and innovation to occur (Levin et al 2002).

Water utilities, whether public or private, act as monopolies. Some believe that to maximize competition, to reduce the inherent power associated with municipal monopolies over water provision and to realize the most benefits of competition privatization can be introduced through varying forms of privatization taking the form of competitive bids on short term contracts to long-term concession of a service (see Table 3). One way to possibly achieve a form of competition is through parceling out the various aspects and services of a water utility, everything from maintenance of infrastructure to actual water provision can help introduce competition into the system and create a market for efficiency and cost effectiveness (Jones et al 2004).

Arnold (2008) argues that the premise of privatization providing greater efficiency is questionable, particularly when the quality of service provision is inadequately monitored or regulated. He states that there have been mixed results when the economic analysis of operating efficiency has been compared between public and private water utilities and discusses how some studies found private water utilities more efficient, some found public water utilities more efficient and some found no difference in efficiencies between private and public water utilities. There are bigger issues that solely focusing on operating efficiency. Private companies have little incentive to invest in improvements or maintenance activities that produce benefits beyond the end of a contract term. Long term upgrade and maintenance problems may continue to be the responsibility of municipal entities when contracts reach their end possibly resulting in an unplanned need to quickly make immediate public investments in maintenance and upgrades (Arnold 2008). Some of these problems may be addressed by the type of privatization that occurs.

Spectrum of Privatization

When one hears privatization often the belief is that the total system must be privatized everything from ownership of the infrastructure to the day to day operations of the system to ensure market based forces are at work. This is not true and privatization can take several forms. The National Academy of Sciences defines four categories of privatization (See Table 3).

One form of privatization is outsourcing where local governments contract with a private water company for defined services and supplies. Another form of privatization is concession or contracting for the large-scale operation and maintenance of the relevant infrastructure. The third form of privatization is a public- private partnership or contracting for design, construction and operation of new infrastructure. The final type of privatization defined by the National Academy of Sciences is divestiture or the selling of infrastructure and in the case of water, at times selling access or rights to the resource may also be included, to a private company (Jones et al 2004).

One argument for privatization is that it would improve the allocation of water to its highest valued use. This would result in greater efficiency, less waste and greater efforts to reclaim water. State laws governing historical rights to specific water uses can create limited opportunity for improvement by hindering the transfer of water rights to new uses such as environmental flows and allowing continued use in unsustainable ways such as water intensive crops in dry areas.

Examples of current water law include the riparian doctrine and prior appropriation doctrine. Riparian doctrine states the right to water is tied to ownership of land next to a body of water, allows the use of water but not the ownership of it by individual and users must take care to ensure quantity and quality are not diminished for other users of the resource (Gillilan and Brown 1997). Another example is the prior appropriation doctrine based on the “first come, first serve principle” where those who claim the water first have the right to it and must put the water to beneficial use or lose the right to the water (Gillilan and Brown 1997). These laws can restrict new uses, effect transportability, encourage over-pumping and excessive depletion of water resources with little incentive to conserve or make efficiency improvements (Bruggink 1992). It is not clear privatization would change this without corresponding changes in the regulation of property rights.

In contrast, an argument for municipal run water utilities is that they may be better at addressing externalities. Externalities are the by-products of activity that can have either negative or positive consequences that are not reflected in the benefits and costs by those who engage in the externality generating activity (Nelson 2003). Negative externalities require public management. Regulation may be a way of controlling negative

externalities while opening up service provision to privatization (Jones et al 2004). Some examples of negative externalities associated with water provision are groundwater overdraft and environmental degradation (Nelson 2003).

The question of which is better, public or privately run water utilities, is answered with an 'it depends'. There are good and bad aspects of each and like everything else some providers, public or private, seem to work better than others. Throughout history the government has been seen as structure through which values "are defined at the level of the community, and decisions regarding the community as a whole are made" (Nelson 2003). The role of government is to provide needed basic infrastructure both physical and legal. Can private water utilities address the social issues that in the past government have been held responsible for answering?

Table 3: Spectrum of Privatization

Outsourcing	• Contracting for defined services and supplies
	• Options include
	  ○ Operation and maintenance
	  ○ Management
	  ○ Planning
	  ○ Engineering
	  ○ Record-keeping
	  ○ Reporting and evaluation

Concession	• Agreements can happen at three stages
	  ○ Prior to design
	  ○ After preliminary design
	  ○ After completing final design
	• Contracting for operation and maintenance
	• Private sector recovers cost through user charges

Public- Private Partnership	• Contract for design, construction and operation of new infrastructure
	  ○ Eventually transferred to public entity
	• Models
	  ○ Build-operate-transfer
	  ○ Build-transfer-operate
	  ○ Build-own-operate
	• Believed to reduce costs, guarantee performance, speed project completion and preserve jobs

Divestiture	• Government sells asset to private sector, private sector owns infrastructure and rights to asset • Local government released from duty of managing operations and complying with regulatory standards • Barriers against this form or privatization higher than other forms

*Information provided by Jones et al 2004 & Beecher et al 1995

Current Oversight: Public Utility Commissions and Citizen Advisory Committees

The traditional role of regulation has been providing protection for the consumer. With any form of water privatization, outsourcing to divestiture, the role of regulation is important. Access to reliable safe drinking water for almost all of the United States residents is what distinguishes the United States from much of the rest of the world. Privatization efforts have been attempted in developing regions such as Latin America and Africa without strong governments, often to the detriment of the public as the consumers of the service (for specific examples of privatization failures see Bolivia case in Whitley et al. 2008, or see the Tanzania case in Bakker 2010). This very fact alludes to regulation being vitally important in avoiding the failures of privatization that have occurred in these developing regions of the world (Gleick et al 2002).

Most people think water quality when regulation is mentioned. This is an important aspect of regulation overseen by the federal government through the Environmental Protection Agency (EPA). Today more than 80 specific contaminants are regulated and there are hundreds of water quality parameters monitored (Levin et al 2002). The EPA has established national standards for contaminants for all public and private community water systems including numerous chemical and microbe standards. Municipalities and private water utilities are faced

with increasingly strict drinking water and raw water quality regulations in an effort to ensure the safety of the general publics' health.

In addition to regulating contaminants, the United States has a long history of democratic oversight of utility providers by public utility commissions (PUCs) and groups such as citizen advisory committees. PUCS are present in every state and membership is usually made up of elected officials who must answer to the public (Glennon 2005). Their jurisdiction and scope of commission authority varies (see Table 4) from state to state but the role of protection for the captive audience the natural monopolies create remains the same. The majority of duties for PUCs fall under financial, though the reviews of some environmental elements such as the review of drought management practices are included as responsibilities of PUCs.

At the local level Citizen Advisory Committees are often made up of citizens appointed by locally elected officials and are used as a means for public oversight of financial and resource use practices.

Table 4: Role of Public Utility Commissions

- Determine if provider is subject to economic regulation
- Issue certificates for major construction projects
- Approve service territory boundaries and changes in boundaries
- Approve financial issuances and loans
- Approver mergers, acquisitions, and other ownership changes
- Audit financial accounts and management practices
- Evaluate long-term resource management plans
- Review utility management prudence
- Review conservation and drought management practices
- Approve revenue requirements, cost allocations and rate structures
- Determine allowed rate of return
- Review record keeping and reporting
- Resolve customer complaints

*Information from Beecher et al 1995

Big Questions: Philosophical and Ethical

"Who does water belong to? Is it a private property or a commons? What kind of rights do or should people have? What are the rights of the states? What are the rights of corporations and commercial interests? Throughout history, society has been plagued with these fundamental questions (Shiva, 2002).

Is water a commodity or a public resource essential for life? Water has more than an economic value. There are spiritual, cultural, religious and environmental values to water that market mechanism do not address. Declaring water as private property or allowing water to be used for private profit brings up philosophical and ethical issues. Should someone, an individual or a multinational corporation, have the ability to decide whether or not to sell water, to whom, for how much and for what purpose (Glennon 2009)?

One question that must be addressed is if a local government allows a company to own the municipal water supply can that company sell that water at whatever prices it wishes to or to whomever it wants? Can water be sold and transported elsewhere? Privatization also risks shutting out the public with less transparency and accountability (Glennon 2009).

There are several factors to consider when establishing prices for water that both public and private water utilities need to take into account. These factors are economic efficiency, revenue generation and economic equity or fairness. Economic efficiency encompasses finding the right balance between conservation, water quality, innovation, investment, risk taking and securing supply. A regulatory decision should be made to ensure that revenue generation consists of earning enough revenue from water rates for public utilities to be able to maintain and invest in the system and secure supply. Private utilities should be able to earn a fair rate of return on their investments while at the same time making the necessary investments in the water provision system (Ayoo & Horbulyk 2008).

Economic fairness consists of ensuring affordable access to water by all users, especially those with low incomes. Equity requires fair, open and transparent decision-making processes in which all those affected by water decisions have an opportunity to participate. Privatized water utilities may not present these opportunities to the public (Whitely et al 2008) without government intervention through regulation or provisions within contracts requiring private corporations to address these issues by municipalities that are contracting out water service. The overall goal for water pricing should be to link costs to water use. The overall goal of the water provider should be sustainability, defined as "meeting the needs of the present without sacrificing the ability of future generations to meet their own needs," (Jones et al 2004). Sustainability has not always been the goal in regards to water supply.

The 20th century water development paradigm, referred to as the municipal hydraulic paradigm by Bakker (2010), was driven by an ethic of growth powered by continued expansion of water supply infrastructure. In the past the primary goals of water service development policy were to support ever increasing levels of economic development done so through extensive water supply systems. The goal was to figure out ways of increasing the availability of fresh water to meet anticipated demands. The municipal hydraulic paradigm that emphasizes large-scale hydraulic works as the only means to support "agricultural modernization, urbanization and industrialization" (Baker 2010) More often than not ecological water requirements and the needs of future generations have been excluded from policies. Over time this paradigm has changed with the attempt to decrease demand to fit the available supply. This is often done through improved technology creating greater water efficiency and through conservation measures (Gleick 1998).

The form of water provider, public or private, which provides the best route towards a sustainable future is unclear. Looking long term towards a sustainable society, again with a sustainable society defined as "meeting the needs of the present without sacrificing the ability of future generations to meet their own needs," (Jones et al 2004) might be better accomplished through a public water utility that should in theory be forced to address long term planning and conservation.

On the other hand private water utilities may be better able to make the link between usages of the good, in this case water, and payment for the good than public water utilities. If users are forced to pay market costs and acknowledge the true economic value, without the benefit of some cost being hidden in the form of taxation, as often done with public water utilities, private companies may be better equipped to enhance conservation and sustainable use over the long term (Jones et al 2004). For many years water rates have been insufficient to cover long-run costs. In addition to financing the maintenance of infrastructure and supply, the price of water should include the costs of watershed or aquifer management which in the past has not been included (Levin et al 2002).

Public water utilities are often provided with incentives to care about the local environment through the demands of the public and local officials. But what incentive do private water utilities have to care about watershed and aquifer management? What incentives do private water utilities have to invest in new technology for water quality and efficiency, water conservation or to focus on "the environmental and social consequence of water allocation policies" (Glennon 2009). Water quality is an example of an area where a private company may feel that monitoring for low levels of pollutants may not be worth the cost. Since private companies' actions are less transparent and they do not have to answer to the public so something such as this may go on without anyone's knowledge (Glennon 2005).

Private companies may have little incentive to be concerned with environmental impacts of water provision if the corporation is not concerned with remaining in the area and the sole goal is profit regardless of environmental impact. There is little incentive to protect the environment from the long term consequences of the adverse effects of groundwater pumping for example if the corporation will not be present to suffer the consequences. The private water utility does not internalize these environmental costs and instead they are put onto society with these issues often not being addressed until years later often long after the private utility has left the area (Glennon 2009).

The idea that stationarity is dead presents another complex problem for water managers. Stationarity is the idea that natural systems do fluctuate but do so within an envelope of variability that is limited (Milly et al 2008). If trends of global warming continue the adverse affects on water distribution, availability and quality will be felt in the United States increasingly as time goes on. Changes in hydrological cycles, timing, seasonality and spatial distribution of precipitation throughout the world will stress already stressed ecosystems and make long term planning of water distribution an increasingly difficult moving target and make it increasingly important.

While literature on water privatization raises many questions about the ability of private water utilities to address some of these issues they also lack recommendations for how to start addressing these issues. Is their a way to start incorporating the social and environmental questions raised into the operation of private water utilities? One way to address the philosophical and ethical questions surrounding water provision is through increased oversight and the creation and adoption of best practices to be used in the creation of contracts between municipalities and private companies when negotiation water service provision through a private utility. While regulation and best practices may not fully answer these difficult questions, these mechanisms provide a starting point for the discussion.

Recommendations: Best Practices & Increased Oversight

"For privatization to be successful, governments must regulate water as a social good, ensuring access to all at a fair price."
- Robert Glennon 2005

Recommendation one: Creation of best practices for private-public contracts and the inclusion of social and environmental elements within contracts

The creation of best practices for municipalities to follow when looking to privatize can help ensure that privatization contracts are created with equity, access and environmental issues in mind. Contracts between municipalities and private entities must lay out responsibilities for each partner and protect the public interest ensuring the quality and quantity of service as well as creating transparency and accountability to the public. The negotiation of contracts should be open, transparent and include all affected stakeholders to avoid corruption or the perception that the best interest of the public is not being considered. Along with PUCs reviewing the contracts public advisory committees should hold meetings open to the public to review the contract (Gleick et al 2002).

Contracts are capable of effecting the environment in which they exist both culturally and economically. As technology and knowledge evolve so must contracts (Suchman 2003). While there are best practice guides for water system operators and water system owners to follow (United States 2006) best practices for the creation of contracts regarding water provision between municipalities and private companies appear to be missing. Best practices in contract construction must include the general principle that **"**to achieve sustainable development at a local level, elected officials and managers of municipal departments must be able to make modifiable and informed choices concerning the future of their public services" (Veolia Water 2004). Governments should not seek divestiture (Glennon 2009) and instead use the three other forms of privatization, public-private partnerships, concession or outsourcing, to introduce market mechanisms to water utilities.

When contracting for private services best practices should be adhered to (see table 5). These best practice recommendations focus on transparency for all steps of the process, that bidding is not solely focused on lowest cost but also on ability and accountability, and that there is wiggle room for private companies and municipal managers to come back to the contract to make alterations if needed.

Table 5: Best Practices Recommendations

- Creation of contracts must include oversight and input by public commissions to ensure transparency and address stakeholder concerns
- A neutral third party should be included to review all contracts before implementation (Vining & Boardman 2008)
- Bidding process must be competitive and transparent
    - Transparency can include but is not limited to:
        - Notices of bidding process displayed on municipal website and notices located in public places such as libraries
        - Bids displayed on municipal websites
        - Bids reviewed by public commissions and regulatory agencies
- Evaluation of bid should not only be financial considerations but also include social and environmental elements and the consideration of past records of success and perceived ability to carry out the duty in a professional manner
    - Opportunistic behavior or the 'too good to be true" element should allow unrealistically low bids to be rejected
- Contract must include ability to renegotiate when project includes high degrees of uncertainty and complexity (Vining & Boardman 2008)
- When construction of infrastructure is involved in the contract the private sector firm will be responsible for the infrastructure for an agreed upon amount of time under operation to ensure all 'bugs' are worked out of the system (Vining & Boardman 2008)

Recommendation two: Increase oversight scope of Public Utility Commissions & Citizen Advisory Committees to include environmental and social elements

These commissions and committees are institutions already in place that can be used to provide increased oversight and that can be expanded to address issues of economic fairness, conservation, water rate equity, environmental and conservation concerns and ensure the use of adaptive management by the private water provider. While most public utility commissions (private water providers) and citizen advisory committees (public water providers) are focused on legitimate financial practices, I propose that their scope of duties and responsibility be expanded to provide oversight on environmental and social issues.

Currently when water utilities transfer from public to private hands the regulatory body often reviews the contract for prudence and financial terms. Social and ecological terms should be included in this review process (see Table 6). Adding these elements would provide oversight from the very beginning to ensure that finances are not the only thing taken into consideration or valued. States should include standards specific to their needs and geographical location. Citizen advisory committees should be included in a service review processes yearly or biannually to ensure a local voice is present not only during the transition from public to private, but on a regular basis.

Table 6: Standards for Privatization to be required by municipalities and to be reviewed by Citizen Advisory Committees

Ecosystems	○ Natural ecosystems guaranteed a basic water requirement under privatization agreement ○ Adaptive management should be considered as a form of management ○ Conservation strategies/plans must be included in the contract
Access/ Equity	○ Government retains ownership and control of water sources ○ All residents should be guaranteed a basic right to water ○ Requirement that water be provided at subsidized rates for reasons of poverty ○ Water provided at fair and reasonable rates ○ Link proposed rate increases with agreed-upon improvements in service/ infrastructure ○ Improvements to water-use efficiency and improvement in water conservation must be conducted before new water supply projects are permitted to raise rates for repayment of investment ○ Government retains right to test for water-quality at any time

*Information provided by Gleick et al 2002

Conclusion

"Water management is far too important for human and ecological well-being to be placed entirely in the private sector. The proper balance requires that new water management policies and mechanisms be developed that make it possible to manage water as both a social and an economic good" (Gleick et al 2002).

The debate around water service privatization raises many questions and issues that are difficult to answer. Water is both an economic and a social good. Efforts to privatize or commodify water needs to be accompanied by a guarantee that certain principles and support for social and environmental objectives be observed. Best practices and increased oversight while not a cure all, can be a step in the right direction to start addressing the social and environmental needs and ensure they are acknowledged and met. Careful contracting

between municipal entities and private corporations can be a way to start addressing the larger philosophical and ethical questions surrounding access to water and sustainability of water resources.

Privatization may have the ability to ensure more efficiency, increased innovation, and increased conservation through fair market pricing of water. However the history of privatization in the United States and throughout the world provides examples of why oversight and best practice mechanism are needed to help ensure the safety of consumers and address social and ecological issues. The strength of the United States lies in its strong government and the United States is a good testing ground to try to start addressing the social and ecological issues surrounding the privatization of water utilities.

***Appendix A: Websites of Publicly Traded Water Companies**:*

American Water:	http: //www.amwater.com/
American States Water Company:	http://www.aswater.com/
Aqua America:	https://www.aquaamerica.com/Pages/Home.aspx
Artesian Resources Corporation:	http://www.artesianwater.com/
California Water Service Group:	http://www.calwater.com/
Connecticut Water Service, Inc.:	http://www.ctwater.com/
Middlesex Water Company:	http://www.middlesexwater.com/
Pennichuck Corporation:	http://www.pennichuck.com/
SJW Corporation:	http://www.sjwater.com/
Southwest Water Company:	http://www.southwestwater.com/
York Water Company:	http://www.yorkwa

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