Expense of Operating Water/Wastewater Treatment Plants

Most people don't think about where the water comes from or how it gets to their faucets, they just consider it free and there for the taking. Likewise, little thought is given to what happens to the wastewater generated by private residences, institutions, commercial buildings, and industries once it goes down the drain. Maintaining water treatment systems, distribution lines and storage facilities, sewer treatment plants, pump stations, and collection lines is costly. Much of the extensive network of water and wastewater systems infrastructure is underground, going unseen and unnoticed until something breaks. Managing these vital assets by careful maintenance, monitoring, rehabilitation, renewal, and replacement strategies is essential to ensure public access to water and sanitation and to protect public health and the environment.

Life cannot exist without water. In addition to drinking water, we depend on a safe and abundant water supply for everything associated with the production all of the goods we consume including our food and for basic hygiene. Despite water being necessary for our survival, investments to maintain and upgrade the infrastructure that assures continual safe delivery of potable water are in jeopardy because of declining revenues and tightening budgets. The natural effects of time, materials, capacity changes, poor installation, and corrosive soil and flow contents require that the pipes be repaired or replaced to ensure that a consistent quality of water be delivered to citizens. Similarly, expenses of maintaining the mechanical elements of both the water and wastewater systems are costly. Serious problems will be encountered if our water infrastructure is not able to deliver to us our most valuable natural resource.

As knowledge about health risks associated with various contaminants and disinfection by-products increases, new regulations will continue to grow more stringent. Each new regulation presents new challenges that typically require new sustainable methods and/or technologies in order to meet or surpass the new requirements. The U.S. Environmental Protection Agency (EPA) has stated a goal to increase enforcement of water quality regulations, particularly Clean Water Act regulations dealing with wet weather issues. The Chesapeake Bay "pollution diet" proposed by the EPA will serve as a model for utilities across the country making it necessary for them to find the funds to meet those needs by raising rates or the bond market.

Delivery of water/wastewater services are considered enterprise funds in which all cost of service delivery – direct, indirect, and capital costs - are identified and paid for through fees that make the entity self-supporting. Enterprise funds provide goods or services to the public for a fee that makes the entity self-supporting. Sewer rates are based on water consumption because the majority of water used goes down the drains and toilets ending up in the sewer system.

Water/wastewater rate increases are necessary for maintenance of existing infrastructure and equipment, maintenance and repair of existing mechanical components, cost of chemicals, and payment of personnel. The Town-owned water system infrastructure

provides water storage in 3 towers pumped from 2 wells and a treatment system. The wastewater collection system includes a network of pipes and pumps that collect and transport wastewater to the treatment facility. Wastewater entering the Plant is called influent as it passes through screens which remove large solid material, then to specialized tanks for grit removal, on to large settling basins, then to clarifiers, and finally is chlorinated and dechlorinated before leaving the Plant. Sludge is collected from the bottom of the clarifiers and placed on reed beds.

Operators of the water/wastewater systems must be adequately trained and certified. They are on call 24 hours a day, 7 days a week, 365 days a year, and are responsible for repairing everything from pipe leaks and valves to electrical and instrumentation equipment. This work becomes especially demanding during seasonal changes when the ground moves causing water mains to break under the strain.

When measured as a percentage of household income, Americans pay less for water/wastewater bills than other developed countries. Because of this, the public has been led to believe that water is available and cheap. To meet essential infrastructure needs, pricing that recovers the costs of building, operating, and maintaining a system is absolutely necessary. Drinking water and wastewater utilities must be able to price water to reflect the full costs of treatment and delivery.

Sources for information used include: http://water.epa.gov/infrastructure; www.utilitycontractoronline.com; www.nrwa.org; www.waterworld.com.