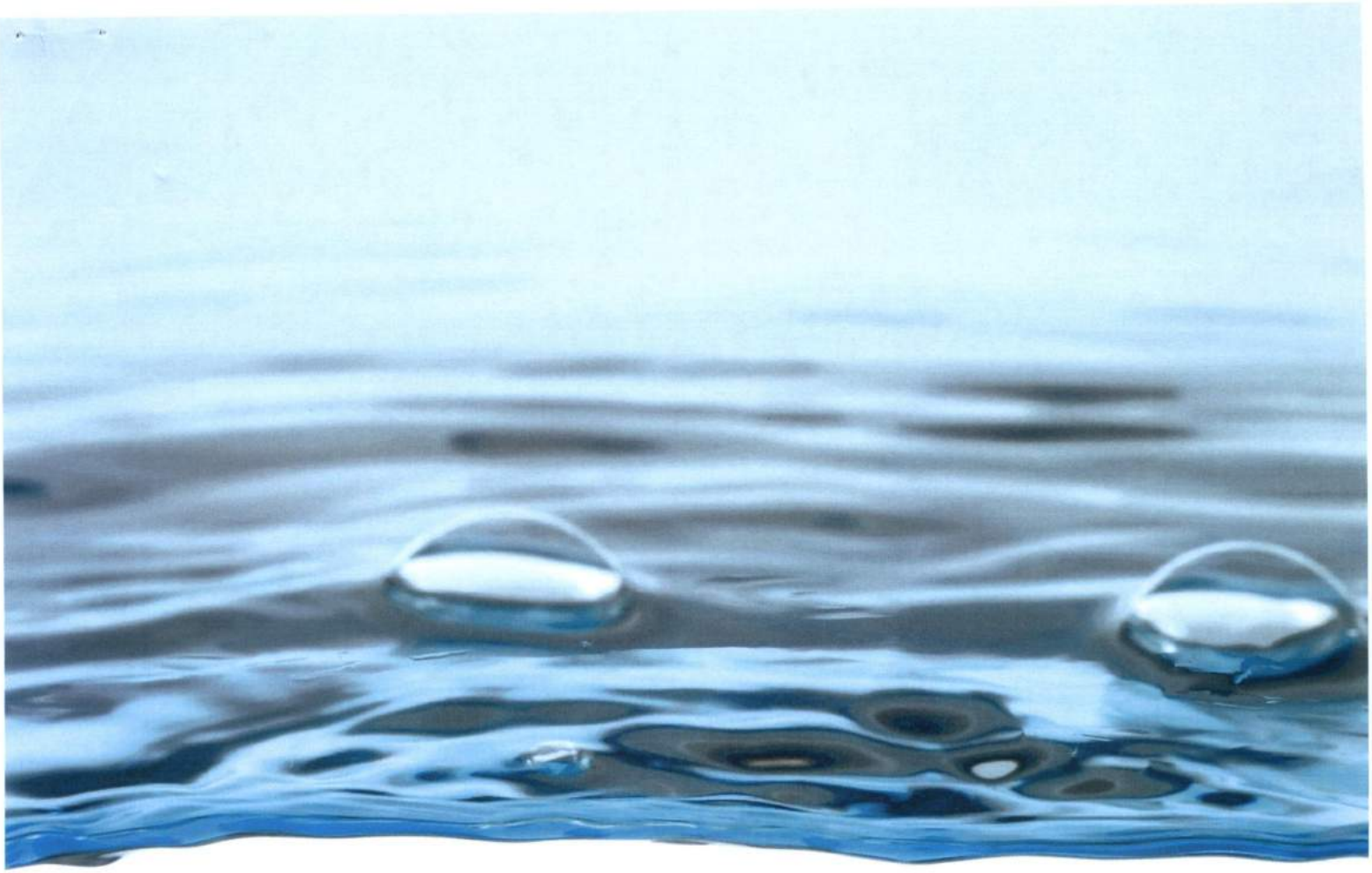

An Analysis of the Differences in Water Rates of Investor-Owned Water Utilities and Government-Owned Water Utilities

OCTOBER 2010

California Water Association

Acknowledgement

CWA acknowledges the contribution of
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I. INTRODUCTION AND BACKGROUND

The primary purpose of the study is to provide the California Water Association and its members with a reference document to utilize in discussions with non-water industry parties regarding issues that may arise regarding water rate differences. There are a myriad of reasons why rates for water utility service differ between utility types, and it is critical to have a base understanding of those differences. To accomplish this goal, it is important to explain some background information and to clearly define the terminology used in this report.

For many not familiar with water utilities, it is not intuitive as to why neighboring utilities can have water rates that differ, and in some cases, significantly. There are numerous factors that bring this about, differences not only between regulated Investor-Owned Utilities (IOUs) and Government-Owned Utilities (GOUs), but also between IOUs and IOUs and between GOUs and GOUs. Because IOUs and GOUs use different approaches in determining revenue requirements and follow different processes in authorizing rates, it is extremely difficult – if not downright impossible – to directly compare water rates of one utility to another. Simple direct comparison can result in misleading conclusions. Nevertheless, inappropriate and unfair comparisons are made all the time.

IOUs

IOUs are directly owned by investors and are normally regulated by a state agency. The California Public Utilities Commission regulates investor-owned utilities in the State of California. An IOU must make a substantial showing to affirm that its costs are accurate, prudent and reasonable, and it must have the regulators' approval prior to increasing user rates. The user rates are intended to allow the IOU to recover its costs of operations and earn a fair rate of return on its investment in the utility operation.

GOUs

GOUs are not owned by individual investors or parties; GOUs are owned by one form of government or another – usually a city, county, or special district. GOUs in California are not regulated by any state agency. The user rates of a GOU are determined by the governing body of each entity. The governing body of an entity is usually elected by the voting public and ultimately answers to the voters (who are not necessarily always the customers).

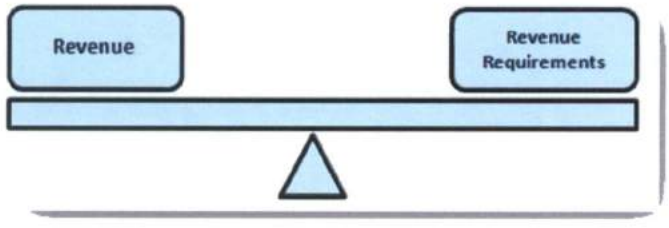
Revenue Requirements

A utility's revenue requirement is the sum total of all the dollars that need to be generated on an annual basis from water rates. Each utility operation will have its own unique revenue requirement.

Water Rates

To be able to have a discussion about how water rates compare, it is important to define water rates. Water rates are established by each utility as a price-per-unit of water and often include a service charge based on meter size. When a customer sees a water bill, the customer may not realize what components go into that bill and that the bill is the direct result of applying water rates to usage.

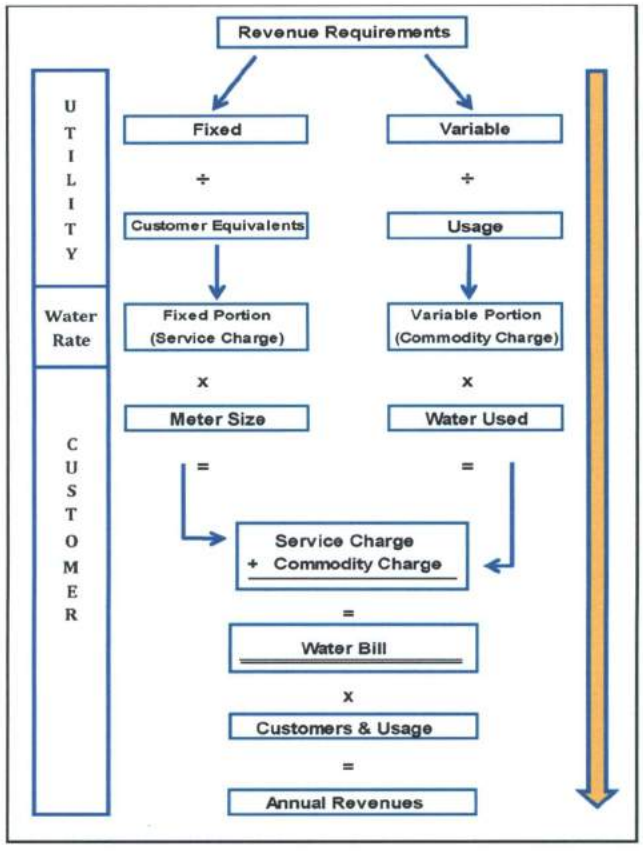
Figure 1 – REVENUES AND REVENUE REQUIREMENTS



Once the revenue requirements of a particular utility are established, water rates are calculated to generate revenues that equal revenue requirements.

The following illustration demonstrates how revenue requirements are directly related to water rates and to a water bill.

Figure 2 – REVENUE REQUIREMENTS AND WATER BILLS



Note that the figure above illustrates a process or calculation that will be unique to each utility.

The question has been posed time and time again, "Why are your water rates different than the neighboring utility's water rates?" The simple answer should be, "Because our revenue requirements are different." While this answer is true, it usually is not enough to satisfy the person posing the question. To really explore and see why the rates charged by neighboring utilities may vary, a background discussion is needed to explain the following concepts: 1) water rates are based on a particular utility's revenue requirements, 2) the different methodologies commonly used in determining revenue requirements, 3) how the revenue requirements of one utility differ from another utility, 4) alternative methods of designing water rates, and 5) the different processes and procedures followed in setting rates.

The following Sections II, III, IV, and V of this report will focus on exploring each of the components to illustrate why water rates differ between utilities. Section II will focus on the two alternative methods of determining revenue requirements. Section III gets into the factors that can influence a utility's overall revenue requirements. Section IV discusses the different types of water rate structures and its purpose. Section V describes the differing processes that may be used to establish rates.

II. REVENUE REQUIREMENT METHODOLOGY

Before any utility establishes its user rates, it must first determine its revenue requirements. Revenue requirements are the total revenues a utility needs to generate on an annual basis that will allow the utility to meet its financial and operating needs. Each utility operation will have its own unique revenue requirements. One of the most influential factors causing different water rates is the method used to determine revenue requirements. The American Water Works Association, in its *Manual of Water Supply Practices; Water Rates, M1*, identifies two generally accepted and practiced methods to determining revenue requirements (1-4). These two methods are:

- **"Utility" Approach**
  - Typically used by IOUs
- **"Cash-Needs" Approach**
  - Typically used by GOUs
  - Occasionally used by IOUs for repayment of governmental loans

Figure 3 shows a comparison of the two approaches:

Figure 3 – REVENUE REQUIREMENT APPROACHES

Cash Needs Approach	Utility Approach
+ Operating expenses*	+ Operating expenses*
+ Capital additions	
	+ Depreciation and amortization
+ Debt service payments	
	+ Income taxes & property taxes
+ Additions to reserve	
	+ Return on rate base
= Revenue requirements	= Revenue requirements

** Excluding depreciation and amortization*

As demonstrated above, each approach has four components, with only one common component. This is a main reason why the rates of an IOU and GOU differ.

Cash-Needs Approach

The cash-needs approach of determining revenue requirements results in rates that are intended to recover the cash required for a particular year. This approach matches the cash received from the customer to the cash-needs of the utility and not necessarily to the cost of service required for customers and received, as measured on an accrual basis. Rates designed using the cash-needs approach can result in the true costs or expenses being under or over recovered for a particular year. As a result, the use of the cash-needs approach can send improper price signals.

Utility Approach

The utility approach matches the cost of service provided to the appropriate time frame when the customer received that service. This is a very important issue. In his book, *Principles of Public Utility Rates*, James C. Bonbright states that *"... one standard of reasonable rates can fairly be said to outrank all others in the importance attached to it by experts and public opinion alike – the standard of costs of service..."*(109).

The utility approach results in rates that are based on the cost of service. It should be self-evident that rates based on the cost of service are superior to rates based on something other than the cost of service to the customer paying their fair share. Rates based on the actual cost of service allow the consumer to make informed decisions about the use of the water because the consumer will know the actual true cost, and therefore, value of the commodity and the utility service.

Comparison of Methods

The cash-needs approach, commonly used by GOUs, is based on cash-needs during a particular annual period. It is not necessarily based on the cost of providing the water service during that period of time. This single item alone can cause the water rates designed using the cash-needs approach to generate revenues more or less than the cost of the water service. For example, if a GOU's revenue requirement includes a component for the accumulation of reserves to fund a future project, the rates for that year could be more than the "cost of service" for that customer.

The utility approach is based on the cost of providing the service. Roger A. Morin, in the book *Utilities Cost of Capital*, states:

> *"In a nutshell, the determination of rates is implemented by defining a total 'revenue requirements', also referred to as the total 'cost of service', then by adjusting the rates so as to achieve these totals. More specifically, the rates set by the regulators should be sufficient to cover the utility's costs, including taxes and depreciation, plus an adequate dollar return on the capital invested..."*(5).

When rates are designed using the cost-based utility approach, customers can make better informed decisions about their water use as they will know the true cost. This concept has often been referred to as sending the proper price signal.

Another very important concept in the world of water rates is generational inequities. This occurs when costs are deferred to future periods or accelerated to current periods to the detriment or benefit of current versus future customers. Because rates determined using the cash-needs approach may include more or less than current costs of service, rates determined using this approach are inferior to the utility approach in preventing generational inequity.

Figure 4 – CASH-NEEDS VS. UTILITY APPROACH

Cash-Needs	vs.	Utility Approach
- Matches cash received from customer to the cash-needs of utility *Drawbacks:* - Can result in improper price signal as true actual costs or expenses (on an accrual basis) may be under or over-recovered for that year		- Matches revenues to the cost of service provided *Drawbacks:* - Does not provide for the accumulation of reserves in case "stuff" happens

Example:
Recently the Governmental Accounting Standards Board issued GASB 45, which is an accounting standard related to other post retirement benefits. In essence, GASB 45 requires GOUs to record liabilities for post retirement benefits that will be paid to employees in future years. Under the cash-needs approach, this type of cost would not be recovered until it is paid, which might be long after the employee has retired. This scenario would cause a mismatch of actual costs of labor as compared to costs of labor recovered in rates. Over time, as GOUs adopt GASB 45 and begin funding any post retirement benefit costs, even under the cash-needs approach the costs and revenues will be better matched. This was not the case in the past and this situation has resulted in the revenue requirements of GOUs being artificially low as the cost burden of other post retirement benefits have been pushed to future years.

III. FACTORS THAT HAVE A DIRECT IMPACT ON REVENUE REQUIREMENTS

Prior to entering into a discussion on the many alternative methodologies commonly used to design water rates intended to recover a utility's revenue requirements, there needs to be a general discussion about the many factors that influence the revenue requirements of a utility.

Figure 5 demonstrates how certain common factors can influence revenue requirements. For example, one utility might obtain 100% of its water supply from relatively low-cost groundwater sources and have adjudicated water rights to cover its total water needs. That utility's revenue requirements would tend to be lower than a utility that purchases some or all of its water. Similarly, if a utility has a water supply that may require extensive treatment, its revenue requirements would tend to be higher when compared with a utility whose groundwater requires little or no treatment.

As illustrated in Figure 5, the terrain and typography of a utility's service territory play a significant role in determining and comparing revenue requirements. A utility operation that is situated in an area with flat terrain would probably have lower power costs on a per-customer basis than a utility operation that serves an area with hilly terrain that will require additional power costs to pump water to higher elevations. However, regardless of terrain, a utility that purchases its water may have lower power costs than a utility that pumps its water. Purchased water often arrives at the utility already under pressure, thereby reducing power costs for pumping.

A utility customer's location can impact his or her water cost. If water is plentiful and of high quality, the cost of water would tend to be less than where water supplies are limited, and extensive treatment, such as softening, is required.

Figure 5 shows some of the attributes that can ultimately influence water bills. It also shows how by taking one attribute and considering the extremes you can form a conclusion about the impact on the resulting water rates.

Figure 5 – FACTORS INFLUENCING REVENUE REQUIREMENTS

	Rates will be	Lower		Higher
	If :			
Source of Water Supply				
	- Groundwater	Greater %		Smaller %
	- Imported	Smaller %		Greater %
	- Water Rights	Adjudicated		Purchased or Leased
Quality of Water Source	- Treatment	None		Extensive
Physical System	- Age	Older		Newer
	- Condition	Well-maintained		Dilapidated
	- Density	Dense		Spread Out
	- Design	Efficient		Less Efficient
	- Terrain and Elevation	Flat and Low		Hilly and High
Customers	- Count	More		Fewer
	- Distance Between	Smaller		Greater
	- Service	Low		High
	- Demand	Constant		High Peak
Financial	- Tax Free Financing	Available & Obtained		Not Availble
	- Connection Fees	Available & Obtained		Not Availble
	- Grants	Available & Obtained		Not Availble
	- Tax Revenue	Receive		Not Availble
	- Tax Expense	Not Required		Required

The following illustrates some of the many differences in revenue requirements that may occur between utilities:

Source of Supply

Where a utility obtains its water supply is a huge factor in the ultimate water rates. For example, if a utility has ample high-quality groundwater sources available, its rates would tend to be lower than if the utility needed to purchase or import its water supply. Conversely, if a utility has no available groundwater and needs to import its water supply, the cost of that water (and water rates) would tend to be higher because this higher cost would need to be recovered. Further, it may be the case that a utility has groundwater in its service area yet lacks water rights to pump that groundwater due to a prior adjudication of those rights. For example, two nearby utilities within the same groundwater basin, one with adequate rights to meet its needs and the other with some water rights, but not enough to meet its total needs, would have two different cost situations. All other things being equal, the utility with adequate water rights would generally have lower rates than the utility that needed to lease water rights or pay excess pumping costs.

When an adjudication of water rights occurs, it usually occurs at a specific point in time; therefore, **when** a utility's water system is built out can impact rates. For example, the former Peerless Water Company in Bellflower (now part of the City of Bellflower) owned water rights in the Central Basin and used those rights to pump water to serve its customers. Due to changes over the years affecting utilities within the Central Basin, the demand for water for other utilities grew and in most years, Peerless had more water rights than it needed and leased those rights to others, thereby lowering its overall revenue requirements and water rates.

Quality of Raw Water

In situations where a utility may have groundwater, but that groundwater requires extensive treatment, the rates will tend to be higher. An example of this situation occurs in the Monterey area, specifically for Canada Woods Water Company, where the available water is brackish and must be treated through an expensive reverse osmosis process.

Physical Water System

The physical attributes of a system can affect water rates. An older system built at a lower historical cost would tend to have lower rates than a newer water system, built more recently at a higher cost with a higher depreciation expense and return on investment. However, an older system may have higher maintenance costs than a newer system. A well-designed (master-planned) water system that is very efficient will tend to have lower cost of service and rates than a system that has been built "hodgepodge" and contains operational inefficiencies.

Physical Condition of Water System

Whether a utility's water system is well maintained or poorly maintained can influence water rates. If a utility increases maintenance efforts in a particular year, maintenance costs will also increase. As a result of these increases, there would be greater revenue requirements and higher rates. On the other hand, if a utility severely limits maintenance efforts, the result would be lower revenue requirements and lower rates, but only in the short run until the deferred maintenance problem catches up with them. This means two seemingly similar neighboring utilities could have differing levels of maintenance and different revenue requirements and, therefore, different rates. To illustrate this point, suppose that due to whatever reason a city council resists approving its city water department's (Utility A) maintenance budget to stave off a water rate increase. As a result, maintenance is deferred for Utility A. Neighboring Utility B performs reasonable and consistent maintenance. Utility A's water rates appear lower than Utility B's. However, Utility A's rates are only artificially lower than B's rates due to political decisions made to achieve political objectives that result in the deferral of costs to a later period.

Density of Customers Served By Water System

The density of a utility's service area directly impacts water rates primarily due to the required amount of infrastructure per customer. A very dense area would have more customers per mile of water main and, therefore, more customers to spread the costs over, leading to lower rates. A water system that is less dense and more spread out will require more investment in distribution plant per customer, and therefore, higher rates on a per customer basis.

Terrain and Typography of Water System

The cost of moving water uphill is significant. A system that is built in an area that is in a plain avoids the costs associated with special facilities designed to pump water to higher elevations.

Customer Count

A utility with a large customer base will benefit from economies of scale and can be operated more efficiently than smaller systems. To demonstrate, suppose Utility C has 50 customers and Utility D has 1,000 customers. Fixed monthly costs are $10,000 for both utilities. Both utilities must generate enough revenues to cover their fixed costs. For Utility C, this means charging $200 per customer ($10,000 total fixed costs divided by 50 customers) to cover monthly fixed costs. For Utility D, this means charging $10 per customer ($10,000 total fixed costs divided by 1,000 customers) to cover monthly fixed costs. Notice that Utility D has the benefit of distributing its fixed costs over a larger customer base than Utility C, resulting in a lower cost per customer. Similar efficiencies occur with operating costs such as power and chemicals.

Age and Condition of System

The age and condition of a water system will influence its rates. Certain areas are well-maintained. Other areas are older and prone to leaks or service outages. These areas require more service calls than the well-maintained areas. More frequent service calls result in higher customer service costs for that area. Higher customer service costs results in higher rates for that particular area.

Customer Demand

A customer base that includes high-rise structures and commercial development will require greater pressure to satisfy peak demands for fire service. This results in requirements for more storage and pumping and larger diameter distribution and transmission pipelines, and therefore, higher rates.

While most of the factors previously discussed are differences that exist between all utilities, regardless of the type, there are several factors that significantly distinguish between IOUs and GOUs.

Tax-Free Financing
In the case of GOUs where tax-free financing is an option, their financing costs are often less than for an IOU due to lower interest rates for tax exempt bonds.

Connection Fees
Connection fees are typically charged by GOUs to newly connecting customers to cover what is commonly referred to as the buy-in to the system and to provide an amount to fund future projects. In the case of a GOU, customers often pay connection fees that effectively reimburse utilities for the entire cost of the proportionate share of their distribution system, and sometimes for backbone systems as well. In the case of an IOU, the IOU may collect contributions in aid of construction from developers, but generally are required to either pay for the facilities themselves or to charge developers refundable advances for construction. To directly compare rates of an IOU and a GOU, one must consider how much the GOU customer paid up front, which can significantly reduce water rates.

Taxes
The payment of income taxes and property taxes are perhaps the most discussed difference between IOUs and GOUs.

For IOUs, taxes are one of many items that are included in revenue requirements. All other things being equal, the more the taxes, the higher the water rates. In the case of GOUs, often a GOU may receive property taxes and be able to subsidize the water operation and revenue requirement. (It can be argued that a portion of the customer's water bill should be on his or her property tax bill.)

Recognizing the long list of potential differences in revenue requirements between utilities, it is very difficult to directly compare the water rates of any one utility to another (regardless of type) without fully investigating and considering the reasons.

IV. TYPES OF RATES

Varying cost allocation techniques in setting rates used by utilities is another reason rates will vary among utilities. Differing rate structures can determine at varying levels of water demand "whose ox gets gored." For example, comparable levels of costs of supporting the water system can be borne differently by low water users vis-à-vis high water users. Several different types of water rate structures have been used by water utilities to meet revenue requirements. These structures have ranged from a flat rate pricing structure to the more sophisticated commodity-demand and base cost plus extra capacity method, which include a number of factors, including demand. Most utilities have a service charge based on meter size and one of the following rate designs:

Uniform Volume Rate

The simplest and easiest rate structure is the uniform volume rate. Water is sold at a constant price per unit of water, regardless of the number of units sold to customers. The cost to the customer increases in direct proportion to the amount of water consumed. This straight rate structure is most equitable when the cost of supplying water is in direct proportion to the amount of water consumed.

Decreasing/Increasing Block Rate

In most instances, the actual water costs increase, either at an increasing rate, or a decreasing rate. For this reason the block rate structure has been used. The unit cost of supplying water may often decrease with increased amounts of water delivered or vice-versa. The customer pays one price for a certain quantity of water and a lower or higher price for any water used beyond that amount. Thus, the total cost to the customer may increase at a decreasing rate or increase at an increasing rate. In the case of decreasing blocks, the method of setting rates does not provide an incentive for larger water customers to conserve water. In order to promote conservation or the efficient use of resources, or in instances where the unit cost of supplying water increases with an increase in demand, the increasing block rate structure can be used. The increasing block rate offers an incentive for larger water users to conserve water and can also result in a reduced variation in seasonal water demands.

Lifeline Rate

This type of rate structure establishes a low fixed rate for a minimum amount of water. The basic purpose of this rate structure is to provide a low rate for a minimum quantity of water to customers on low incomes, but affluent customers with low water consumption would also benefit. Lifeline rates are a form of subsidy to low-income customers, which can result in an inequitable distribution of costs.

Beyond the type of rates utilized, the methodology of allocating costs needs to be considered.

Cost Allocation Techniques

The types of rate structures listed above are usually applied to the various customer classes based on the calculated cost to serve each of those customer classes. Common methods of cost allocation are the commodity-demand and base-extra capacity methods.

Commodity – Demand Method

In the commodity-demand method, costs of service are separated into three primary cost functions – demand costs, commodity costs, and customer costs. Demand costs are associated with providing facilities to meet the peak times of use, or demands, placed on the system by customers. Commodity costs are costs that tend to vary with the quantity of water produced and sold, which will increase or decrease with the amount of water supplied. Customer costs comprise those costs associated with serving customers, irrespective of the amount of water or maximum demand. Customer costs include meter reading, billing, customer accounting, bill collections expense, and maintenance and capital charges on meters and services.

Base-Extra Capacity Method

In the base-extra capacity method, all costs are separated into three components – base cost, extra capacity costs, and customer cost. In detailed studies, these components may be further divided into subcomponents. Base costs are costs that tend to vary with the quantity of water used, or commodity costs, plus those operating and capital costs associated with service to customers under average load conditions, without the elements necessary to meet water use variations and resulting peaks in demand. Base costs include operating costs of supply, treatment, pumping, and distribution facilities, plus capital costs for water plant investment associated with serving customers to the extent required for a constant, or average, annual rate of use. Extra capacity costs are costs associated with meeting rate-of-use requirements in excess of average, and also include capital and operating charges for additional plant and system capacity beyond that required for average rate of use. These costs may be subdivided into costs necessary to meet maximum-hour extra demand, maximum-day extra demand, or other extra-demand criteria appropriate for a particular demand, just as in the commodity-demand method.

The typical rate structure types can be summarized with pros and cons, as follows:

Figure 6 – TYPES OF RATES

Type	Pros	Cons
Flat Rate	Revenue predictability/ stability	Not-conservation oriented
Declining Block	Revenue stability	Not-conservation oriented
Increasing Block (Tiered)	Promotes conservation	Revenue instability Can have harsh economic consequences for water intensive businesses when applied to commercial customers
Seasonal	Promotes conservation	Revenue instability
Lifeline	Makes water more affordable for low income customers	If not properly designed, can be a disincentive to water conservation
Uniform Volume	Easy to administer and reduces revenue instability	Does not consider higher marginal costs brought about by large water users

V. RATE SETTING PROCESS

Yet another element in the discussion of why the rates of an IOU may differ from a GOU is the procedure involved in the rate change process. We will call this the rate-setting process.

How IOUs Increase Rates

In California, IOUs are regulated by the California Public Utilities Commission (CPUC). Before any IOU can increase water rates, the IOU must make a comprehensive filing with the CPUC providing justification and evidence to increase rates. For IOUs, this process is called a general rate case (GRC). During the GRC, there are numerous statutory and required steps to be taken. In the GRC, the process that an IOU goes through to obtain authority to increase rates is as follows:

- Filing an application or advice letter with the CPUC
- Public notification to customers
- Formal evidence/workpapers submitted
- Review of large utility applications by Division of Ratepayer Advocates (DRA); review of small company applications by Division of Water & Audits
- Data requests from DRA staff
- Evidentiary hearings (formal applications) or CPUC staff review of filing (advice letters)
- Brief submitted or DRA staff report issued
- Administrative Law Judge (ALJ) proposed decision (order) or resolution prepared
- Final Commission approval of Decision or Resolution

Often in this process, an "intervenor" can become part of the proceeding and provide evidence, testimony, and make a substantive contribution to the outcome and the result (usually in an effort to keep rates lower). By design, the GRC process is conducted in a very open and public format intended to ensure that customers, other affected parties, and the public have an opportunity to participate and provide appropriate input. During the GRC process, it is likely that the utility will be challenged by the DRA on any number of issues that the ALJ and assigned commissioner will need to address.

The regulatory process to which an IOU is subject is particular to an IOU. Roger A. Morin, in his book *Utilities Cost of Capital*, states:

> *"In a normally competitive industry, the forces of competition hold prices down to the costs of production, including a requisite expected return on invested capital. This expected rate of return is an average long-run concept and is not necessarily guaranteed at all times. Over the long-run, it will reflect the risks of the industry. The greater the risks confronted by the industry, the greater is the expected rate of return. The principal objective of regulation is to determine an allowed rate of return in such a way as to emulate the returns for industries in the competitive market. Regulatory commissions act as a substitute for the market place, setting allowed rates of return so as to satisfy consumer demand at non-monopolistic prices, and so as to ensure good performance. By controlling not only prices but also entry and service standards, the regulatory commission is the guarantor of acceptable performance."* (4).

The regulatory process is rigid, uniform, and applied, in general, equally to all IOUs. As stated above, the goal of regulation is that water rates will be based on the cost of service.

The rate-setting process is different from GOUs because the authority that allows a GOU to increase rates generally vests with the GOU's governing body, usually a city council or a district board. This can allow political pressures to provide current rates to be applied at amounts lower than is needed to meet revenue requirements. James Goldstein, in his article, "Full-Cost Water Pricing," written for the AWWA Journal Magazine in February 1986, noted: *"Many municipal water systems have traditionally priced water as far less than the cost of service, thereby requiring subsidies from general funds. Conversely, some water revenues have been diverted to meet other expenses of the city."*(52). Mr. Goldstein goes on to discuss the real-life example of the City of Boston, Massachusetts and how water rates were adjusted to full-cost pricing so that the water utility could comply with a 1977 Massachusetts statute that required the water utility to be self-sustaining and recover all current expenses and debt service costs from rates. This observation was true in 1986, holds true today, and will hold true in the future. For a utility to truly be self-sustaining, the actual cost of providing service as measured on an accrual basis – no more, no less – must be recovered in rates.

How GOUs Increase Rates

In 1996, California voters approved Proposition 218 (Prop 218), which has, in some respects, created a type of rate approval process that, in many aspects, is not unlike the regulatory process function under the CPUC. Although Prop 218 does not require a utility to be self-sustaining, it does, among other things, require that:

> *(1) Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.*
> *(2) Revenues derived from the fee or charge shall not be used for any purposes other than that for which the fee or charge was imposed.*

Simply put, Prop 218 said, "You can't charge more than it costs and you can't use water revenues for non-water related purposes." GOUs still have the option of charging less than the full cost of the water utility service by subsidizing the operation.

Again, at the risk of oversimplifying the process, the GOU rate increase authority process is:

- Calculations to determine revenue or cash-needs requirements
- Notice to customers
- Public hearing
- Approval (assuming not enough protests received)

It is apparent that even if one sets aside the revenue requirement differences, the revenue requirement methodology and rate authorization process differences will most certainly result in significant water rate differences between IOUs and GOUs.

VI. OBSERVATIONS

1. **The ownership of a water utility is not a predictor of the overall water bill.** Each utility's revenue requirements, as well as the location of the utility, are the predictors of overall water bills. For whichever of the many possible reasons a utility determines that its revenue requirements are higher than a nearby utility, the utility with the greater revenue requirement will have the higher monthly water bills for similar usage, assuming that it establishes rates designed to recover that revenue requirement and its full cost of service.

2. **Political and judicial decisions have a substantial impact on water bills.** At the present time, July 2010, a judicial-type decision has resulted in California-American Water Company (California American) without adequate water rights to serve its customer base. These circumstances left California American without the opportunity to acquire and/or purchase water from another surrounding utility. California American had been pumping its wells near the Carmel River and California American considered this pumping to be groundwater pumping. In 1995, the State Water Resources Control Board determined that some of California American's wells were actually obtaining water from the underflow of the Carmel River, to which California American did not have adequate pumping rights. In the instant of the Board's decision, nearly 70% of California American's needed water supply effectively vanished. Yet the water was still in the river. The solution that California American proposed to replace the previously pumped water was water from a proposed desalination plant. The reality of this situation is that the water from the desalination plant is more costly than the pumped water, which means that California American's Monterey District revenue requirements and customer bills will rise significantly by the time the plant comes on line. This increase is largely attributable to the judicial decision.

VII. CONCLUSION

After considering the reasons causing the differences between water rates of IOUs and GOUs, it is intriguing to dwell on, in general, both their significance and just how many differences there are:

1. The approaches used in determining revenue requirements are quite different.
2. All utilities (whether IOUs or GOUs) have unique revenue requirements.
3. Utilities (whether IOUs or GOUs) often use different rate design criteria.
4. The process of establishing rates differs between IOUs and GOUs.

After studying, analyzing, and providing discussion of the reasons causing the differences between water rates, the natural conclusion is that the factors, methodologies, and processes involved are so varied that simple comparisons of water rates between any utility (regardless of IOU or GOU) may result in misleading results, without careful evaluation of the causes of the variance.

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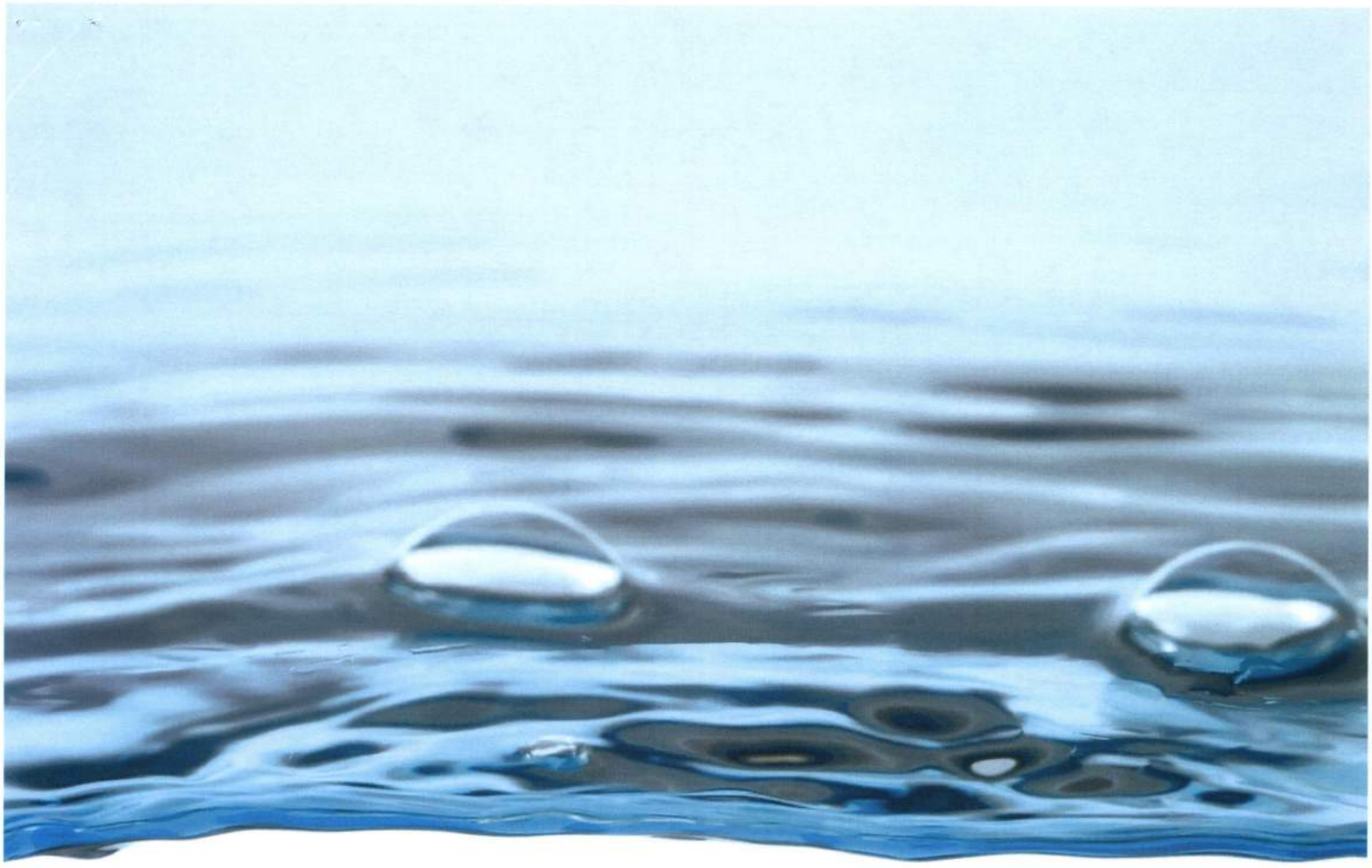

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