THE PAYING FOR WATER SERIES Executive summary - october 2019





PAYING FOR WATER





UTAH FOUNDATION RESEARCH • ANALYZE • INFORM

PAYING FOR WATER

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About Utah Foundation

Utah Foundation's mission is to produce objective, thorough and well-reasoned research and analysis that promotes the effective use of public resources, a thriving economy, a well-prepared workforce and a high quality of life for Utahns. Utah Foundation seeks to help decisionmakers and citizens understand and address complex issues. Utah Foundation also offers constructive guidance to improve governmental policies, programs and structures.

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INTRODUCTION

Utah ranks as one of the nation's driest states — and one of the fastest-growing. It is therefore essential that Utah's water is well managed to ensure the sufficiency of affordable, quality water into the future. Utah Foundation's series of water reports discusses Utah's reliance on both water rates and property taxes to fund water infrastructure, operations and maintenance.

The four reports in the series are:

- 1. High and Dry: Water Supply, Management and Funding in Utah (August 2019)
- 2. Drop by Drop: Water Costs and Conservation in Utah (September 2019)
- 3. Who Gets the Bill? Water Finance and Fairness in Utah (September 2019)
- 4. Getting Clear on Water: Practical Considerations in the Tax Versus Fee Debate (September 2019)

When thinking about Utah's water supply and the role of property taxes, the prioritization of competing goals influence what policy is preferred. Some of the competing goals include:

- Utah officials should encourage people to conserve.
- The costs should be carried by those who benefit from the services.
- Water should be affordable at a basic level, but also have a price that signals when individuals are consuming at higher levels.
- Water providers need stable revenues to help them better provide services.

The following discussion provides a brief overview of the findings from the analyses in the four reports.

THE PAYING FOR WATER SERIES: PRINCIPAL AREAS OF ANALYSIS

How Widespread is the Use of Property Taxes?

While the majority of water providers in Utah do not collect property taxes, 90% of Utahns live within the jurisdiction of a water provider that does. Because jurisdictions overlap, some Utahns pay property taxes to two or even three water providers in addition to their monthly water bill. Furthermore, while most providers do not collect property taxes, they often purchase water from a wholesale provider that does, indirectly lowering water rates for consumers.

Is Utah's Approach Unusual?

A threshold question in our research was, is Utah unusual in its use of property taxes alongside water rates? While no comprehensive national survey exists, Utah Foundation was able to identify instances of successful water agencies using property taxes to supplement water rates in Arizona, California, Colorado, Louisiana and Texas. Utah Foundation was also able to identify a number of successful water agencies covering a wide array of water services while relying solely on water rates.

Conservation

Regardless of the revenue mix, Utah water providers regularly engage in a variety of conservation efforts. Furthermore, conservation relies heavily on how water rates for consumers are structured rather than simply on whether property tax revenues are used as well. That said, a greater reliance on water rates could help water providers further leverage their rate structures to encourage conservation.



KEY FINDINGS OF THIS SERIES

- When it comes to water policy, Utah has a complex range of stakeholders, including a variety of water users and beneficiaries, as well as at least 308 public water suppliers.
- Because Utah is both one of the fastest growing and driest states in the nation, the challenge of water management is a pressing matter.
- Utahns divert more than 5 million acre-feet of water for annual use, even though only 3.3 million acre-feet is available for use, meaning that a significant portion of Utah's diverted water is reused, rather than simply consumed.
- Less than 20% of the total diverted water is distributed through public utility systems. Of this water, residential users consume more than two-thirds – mostly for outdoor purposes.
- Per capita water use from public utility systems varies widely based on climate, geography, economy and culture.
- The Wasatch Front has relatively low per-capita use, while south-central Utah has relatively high use.
- In surveying the tiered rate structures of water providers across the state, Utah Foundation found a wide variety of approaches.
- While it is unclear how many water providers outside Utah use property taxes alongside water rates, there are successful examples of both types of water providers: those that use property taxes to lower water rates and those that do not.
- Most Utah water providers have chosen not to directly impose property taxes; however, because of overlapping jurisdictions and because some providers are far larger than others, more than 90% of Utahns live within the jurisdiction of a water provider that collects property taxes.
- Conservation from an increase in water rates might be limited in the short term, but it would increase over the longer term.
- Comparing Utah's water providers shows that, on average, providers with 10% higher rates have 6.5% lower water use.
- A greater dependence on use-based water rates would generally tend to raise those rates and encourage conservation; however, there is currently no clear indication that water providers that depend upon a higher share of property tax revenues have customers with higher water use.
- Some water providers encouraging conservation could find themselves in a position where water use drops so much that they cannot continue to cover costs without raising rates.
- Policymakers could decouple revenues from the quantity of water sold, so conservation does not negatively affect water providers' budgets.
- Generally speaking, conservation is the cheapest way to meet demand for water, followed by agricultural conversion. Building new infrastructure is far more expensive.
- Depending on their water providers' reliance on property taxes, nonprofit institutions and other exempt and partially exempt property owners may pay less than their share for the water they use.
- A shift away from property taxes could result in steep rate increases for some users including school districts and universities. In some cases, those costs may end up being passed on to the public in other ways.
- Based on who uses the most water, a move to greater reliance on water rates would generally provide for a fairer distribution of the cost.
- Using property taxes ensures that a broader base of those who benefit from water systems share in the cost.
- There are ways to address certain fairness issues without changing the revenue mix, such as by charging differential rates based upon user type.
- To the extent that property taxes lower water rates, they can make water more affordable to lower income Utahns. However, there are ways to adjust water rates to address basic affordability without using property taxes.
- From a broad perspective, a mix of property taxes and water rates allows water providers a means of counterbalancing core fairness characteristics attributable to each funding source.
- While water rate revenues are not as stable as property taxes, they are among the most stable relative to other possible revenue streams commonly used to support revenue bonds.
- Rainy day funds and decoupling of water rates from sales volume can help address budget volatility.
- While it stands to reason that property tax revenues might help push credit ratings higher and thereby make the overall cost of water cheaper, it is only likely to be the case to a marginal degree.
- Market distortions created by using property taxes for wholesale water may increase the overall cost of water.
- A mix of revenue sources allows for more local flexibility by allowing water providers to use the property tax as needed and to counterbalance drawbacks in water rates.
- A full reliance on water rates tends to provide stronger cost transparency because consumers can turn to a single source of information for their use and cost: monthly water bills.

Fairness

A shift to greater reliance on water rates would promote fairness among users: Those who use more would pay more of the cost of public water. Those who benefit from property tax exemptions and thereby see a reduction in their overall water cost would pay a share of the water costs more commensurate with their use.

However, with the property tax, property owners who do not use water but benefit from its development also contribute. Furthermore, many water providers provide a number of services that benefit the broader public, and property taxes broaden the base of those contributing to those services. It should be noted that water providers involved in services beyond delivery can create an enterprise fund to manage water delivery and a general fund to manage broader services and separate the revenue streams accordingly.

There is also the question of societal fairness from the standpoint of low-income water users. Water is a basic need of survival. To the extent that property taxes subsidize water rates, the rates can be made more affordable to low-income households. However, this can be addressed when using water rates alone by using tiered water rates with a low initial tier; it can also be addressed by using water budgets.

Finally, there is the question of intergenerational fairness. Bonds tend to be the traditional method of spreading the costs of infrastructure across the generations that will benefit from it. However, such bonds can be paid down using either property tax revenues or water rate revenues.

Overall Cost of Water

Distortions may occur in the wholesale market when property taxes allow wholesalers to sell at lower prices, which may increase the overall price users pay for water. To the degree a greater reliance on water rates encourages conservation, expensive water development projects may be delayed, resulting in lower costs for current consumers. These cost savings are associated directly with conservation rather than water rates. As noted earlier, a larger reliance on water rates could help leverage those conservation efforts.

Access to property tax revenues might allow for higher bond ratings and thereby cheaper borrowing rates and lower costs for consumers because water rates are less stable than property taxes. On the other hand, water rates are considered among the safest revenue sources for municipal bonds, and the effect on bond ratings and interest rates will tend to be marginal.

Funding Flexibility

Local areas with differing needs use property taxes to different degrees to meet local needs. With water rates alone, water providers have the flexibility to balance tiered rates, fixed fees and residential/commercial classification to retain flexibility to meet local needs. But property taxes offer still another revenue option. Property taxes may also be more advantageous when funding upfront costs.

Transparency

The full cost of water from a single source – monthly water bills – increases transparency, although the level of transparency would likely vary by provider. However, the process of increasing water rates can be less transparent for water rates than revenues generated from property taxes.

A greater reliance on water rates offers greater leverage for conservation efforts, while property taxes offer revenue flexibility.

Figure 1: A	Broad Over	view of Utah	Foundation's	Findings, b	y Issue Ar	ea
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	Better or somewhat better with greater reliance on water rates	Neutral	Better or somewhat better with inclusion of property tax
Conservation			
Fairness among users			
Fairness across society			
Intergenerational fairness			
Overall cost of water			
Cost of finance			
Revenue stability			
Funding flexibility			
Transparency - cost			
Transparency - revenue increase			
Representation			

Source: Utah Foundation analysis.

CONCLUSION

It is not Utah Foundation's intent to recommend one revenue approach over another. Rather, the purpose of this series of water reports is to provide a resource that compiles the costs and benefits of alternative methods of funding water service in Utah. The series provides stakeholders, policymakers and citizens a single source of information that summarizes competing arguments. These arguments are outlined in detail in parts 2 through 4 and summarized in broad strokes in the table to the left.

Throughout this series. Utah Foundation outlines the costs and benefits of a greater reliance on water rates, and how this might affect each of the areas of concern. During the course of this research, Utah Foundation identified a number of potential solutions to help mitigate or alleviate the negative consequences of either funding method. For example, water providers that use property taxes but are concerned about fairness might charge differential rates reflective of property tax contributions. Similarly, water providers that rely pri-

marily on water rates and fees can address revenue stability by building large reserves or more frequently re-evaluating rates.

Utah water providers have a number of challenges to tackle. They also have a large range of geographic, climatic, economic and demographic factors to consider as they chart the best course forward. Getting the analysis right is a matter that will echo into the future.





HIGH AND DRY

Water Supply, Management and Funding in Utah



INTRODUCTION

Utah ranks among both the nation's driest and fastest growing states. This means approaching water management in a manner that ensures the sufficiency of affordable, quality water into the future is a major concern. Utah Foundation's series of water reports seeks to fully explore the issue of how Utahns pay for that water.

Historically, property taxes, impact fees and water rates have played strong roles in funding the development and delivery of water. But there is a robust debate over the extent to which property tax revenues should be used (if at all) in Utah's funding model. This series of reports explores the differing viewpoints around property taxes in this debate.

Water providers can collect property taxes two ways. They can collect an amount that can be used for operations, maintenance and capital improvements; or they can issue voter-approved general obligation bonds, backed by property taxes, to pay for capital improvements. Because the first approach is the main subject of debate, this series primarily addresses the implications of reducing reliance on the first approach to property taxes while leaving the second intact.

This first installment in the series provides the necessary background on water use, water providers and users, and water finance in Utah. The report's primary focus is on water provided through the public community system and public water providers that capture, treat, purify, convey, pump, store and distribute water to end users.

Subsequent reports will focus on property taxes and water rates in the context of conservation, fairness issues and practical considerations such as cost, fiscal stability and accountability.

UTAH'S WATER CHALLENGES

Utah is one of the driest states in the nation, and it is expected to grow by more than 2.8 million residents by 2065 (an average annual increase of 1.3%). The availability of water has helped to mold the state's growth patterns over time. Ensuring that residents have enough water for the future is a major consideration.¹

KEY FINDINGS OF THIS REPORT

- When it comes to water policy, Utah has a complex range of stakeholders, including a variety of water users and beneficiaries, as well as at least 308 public water suppliers.
- Because Utah is both one of the fastest growing and driest states in the nation, the challenge of water management is a pressing matter.
- Utahns divert more than 5 million acre-feet of water for annual use, even though only 3.3 million acre-feet is available for use, meaning that a significant portion of Utah's diverted water is reused, rather than simply consumed.
- Less than 20% of the total diverted water is distributed through public utility systems. Of this water, residential users consume more than two-thirds mostly for outdoor purposes.
- Per capita water use from public utility systems varies widely based on climate, geography, economy and culture. The Wasatch Front has relatively low per-capita use, while south-central Utah has relatively high use.
- In surveying the tiered rate structures of water providers across the state, Utah Foundation found a wide variety of approaches.
- While it is unclear how many water providers outside Utah use property taxes alongside water rates, there are successful examples of both types of water providers: those that use property taxes to lower water rates and those that do not.
- Most Utah water providers have chosen not to directly impose property taxes; however, because of overlapping
 jurisdictions and because some providers are far larger than others, more than 90% of Utahns live within the jurisdiction of a water provider that collects property taxes.



TAXES AND USER FEES

To a large extent, how we pay for water is a question of taxes versus user fees – a common area of debate in public finance. Broadly speaking, taxes are for general support of government services while user fees are tied to a specific level of use.

In this specific case, water user fees are generally divided into two categories. There are fixed fees that do not change based on how much water is used, such as impact fees or a base monthly fee. Rates, on the other hand, are user fees that change based on the amount of water used.

Unlike most goods where the more one purchases the less an individual unit costs, water tends to be structured in the opposite manner. Most water providers in Utah have a tiered rate structure that increases with usage. For example, the first 5,000 gallons of water might cost two dollars per each 1,000 gallons, the next 5,000 gallons might cost three dollars, and the next 5,000 gallons might cost four dollars per 1,000 gallons.

For convenience and ease of understanding, Utah Foundation in this series of reports refers to water user fees or use charges as "water rates" when referring to a charge that changes based on the amount used. The report uses the term "fees" when referring to a fixed charge unrelated to the amount of water used.

As Utah's population grows, its household size is expected to decrease, and higher levels of density will result in smaller lot sizes.² These two factors will help water resources stretch further.

Conservation efforts will continue to play a strong role in ensuring an adequate water supply for a growing population, but there is significant debate about whether conservation is enough on its own. Water providers and some state agencies have expressed concern that, without large-scale infrastructure projects, Utah will see water shortages as its population grows. A group of Utah's largest water providers, Prepare60, estimates that the state will need \$15 billion of new infrastructure by 2060 to support Utah's expected population growth, and another \$18 billion to fund the replacement of aging infrastructure.³ Some economists and water and conservation groups challenge both the cost accuracy of some infrastructure projects and the very need of other projects. These opponents point out more stringent conservation efforts could reduce wear and tear on existing infrastructure and reduce or eliminate the need for future infrastructure projects.

Policymakers and Utahns are approaching the issue of ensuring that the growing population has access to clean and affordable water from a variety of angles. For example, a 2017 State of Utah water strategy report documents a consensus of 41 water experts. The report covered a range of solutions, stretching from technological innovation furthering water reuse to the role of water law. It also provides a short review of the role of property taxes as a source of funding for water providers, the topic that this series of reports seeks to clarify.⁴

While best approaches to Utah's water challenges are a matter for debate, all involved in the debate have the same goal: ensuring that Utah has a sufficient clean, affordable water supply to meet Utah's current and future needs.

THE WATERSCAPE IN UTAH

The following discussion explains how Utah's precipitation leaves the local natural system or is ultimately used.

Utah's long-term average annual precipitation is 61.5 million acre-feet (MAF) — an acre foot is the amount of water it takes to cover an acre with one foot of water, or 325,851 gallons. Most of that water (88%) stays in the natural system through evaporation and transpiration – which is essentially evaporation through plants. Since political borders often don't align with watersheds, some of Utah's precipitation ends up in other states, and vice versa. On balance, Utah only loses a small amount (less than 1%). That leaves about 12% – or 7.3

MAF – which becomes Utah's ground and surface water supply. Of Utah's surface and ground water supply, 4 MAF (55%) is evaporated from Utah's lakes and streams (3 MAF is from the Great Salt Lake alone) leaving 3.3 MAF – just 5% of the total precipitation – available for use.⁵

Consumers use some water and pass it on for further use. For example, the water that runs down sinks or bathtubs is treated, put back into the natural water system and subsequently used by someone else. So, while Utahns use the 3.3 MAF available to them, only 2.6 MAF are consumed. This leaves 0.7 MAF of Utah's water unused, which flows downstream to other states.⁶

It should be noted that these are longterm averages and can vary substantially from year to year. In addition, changes in the climate can affect the amount of water Utah has available.

Water Use in Utah

Utahns consume 2.6 MAF of water annually. But because only a certain amount of water can be reused, water users divert almost twice that much for use. Of the 5.2 MAF of water Utah diverts, 82% goes to agriculture use. (See Figure 2 on the next page.) The remaining 18% – or 0.95 MAF – supplies water for munic-

ipal and industrial (M&I) use. A small proportion, 15,000 acre-feet (AF), is used in individual residential wells owned by homeowners. Another 220,000 AF is self-provided by industries or other groups like state parks or campgrounds. The remaining 717,000 AF is distributed to Utahns through the various public utility systems across the state.

CONSUMPTION OR DIVERSION?

While Utahn's have 3.3 MAF available for consumption, and consume only 2.6 MAF, they divert (or use) 5.2 MAF.

When water is removed from its natural course (often called diverted water or withdrawals), a portion is removed from the system through evaporation or incorporation into a product, plant or person and is no longer available for reuse. This is often referred to as consumptive use, water consumption, or depletion (although depletion can also have other water-focused meanings).

The water not consumed is returned to the local watershed. This could include indoor water, which runs down drains, is treated and reintroduced back into Utah's water system. It could also include water used outdoors that seeps back into aquifers, runs off or by some other process returns to the water system to be used again by downstream users.

In the end, Utahns may use the same water multiple times before it is consumed in a way that it does not re-enter the local natural system or leave the state. Utah accounts for this by quantifying both the water diverted and the water depleted when issuing water rights.

Only 5% of Utah's total precipitation is available for society's use.





Only 14% of water diverted is used in a public community system.





It is this 717,000 AF of public utility system water that is the primary focus of this series of reports. It represents 1% of the state's precipitation and 14% of Utah's diverted water. It is this water that may be subject to both water rates and property taxes levied by water providers.

Of this water, industrial users (like refineries) use 4%, institutional users (like schools, churches and governments) use 12%, commercial users use 14%, and residential users use 71%. Among residential users, 35% of the water is used for indoor purposes while 65% is used for outdoor purposes. (See Figure 2.)

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WHO ARE THE STAKEHOLDERS?

This report addresses two broad categories of stakeholders: water users/beneficiaries and water providers.

Water Users and Beneficiaries

Homeowners. Water meets households' indoor and outdoor needs and wants. Approximately one-third of the water households consume is for indoor use, and two-thirds is for outdoor use.⁷ Homeowners usually pay both water rates and property taxes for water, but owners of primary residences receive a 45% discount on their property taxes.⁸

Commercial Property Owners. These entities use water at widely varying levels, but office buildings, hotels, hospitals, restaurants and other commercial facilities all use water in their daily operations. Some commercial entities own large amounts of property across the state but use little water. While the amount they pay through water rates varies based on their use, they all pay property taxes based on the full market value of their real and personal property.

Residential and Commercial Renters. These entities and individuals pay for water use either directly through their water bills or perhaps indirectly, with the property tax, as a portion of their rents. Residential property owners receive a 45% discount on their property taxes if their property is a primary residence for their renters. Rental commercial property is taxed at full market value. The residential discount likely translates into some amount of savings for residential renters, not available to commercial renters.⁹

Agricultural Landowners. Agricultural landowners often get their water outside of the public community system, but will still pay property taxes that support public water systems if within the jurisdiction of a local government collecting property taxes for water. Under Utah's greenbelt law, some of Utah's agricultural lands (especially those near developing urban areas) are assessed based on the value of the goods the land can produce rather than the market value of the land. As a result, agricultural landowners whose lands are assessed under the greenbelt law pay less in property taxes than other commercial landowners. However, if agricultural landowners do reclassify their land in order to be developed, they are required to pay an amount that covers the foregone taxes.

Undeveloped Land Holders. These individuals use no water, but the value of their land depends upon the assurance that water will be available in the future when the land is developed. Although they use no water, they do contribute to water providers through property taxes.

Exempt Institutional Water Users. Religious organizations, parks, schools, nonprofits, universities and state and local governments (like counties, cities, and even public cemeteries) are exempt from paying property taxes. As a result, they pay only through water rates, which (to the degree that their water providers rely on property taxes) represents only a portion of the cost of their water use. Schools, parks, churches and other exempt institutions may consume significant amounts of water, particularly if they use it to maintain large green spaces.

Industrial Users. Several industries use significant amounts of water in their production processes. Industries that produce metals, paper products, chemicals, gasoline and oil are all industrial users of water. Some, such as the oil and gas companies in the Uintah Basin, provide themselves with water through their own infrastructure.¹⁰ These users bear the full cost of supplying the water they use and also pay any property taxes local water providers may levy. Other industrial users purchase water from water providers. They pay water rates and bear the full cost of property taxes.

Water Provider Types

There are several types of water providers in Utah, which include cities and a variety of local districts. Cities and local districts have different ways of gaining access to property taxes. In addition, local districts have varying functions and property tax limits.



A NOTE ON THE DATA

Utah Foundation was able to obtain financial information on 294 water providers. While Utah Foundation sought to isolate budget information related to water, this was not always possible. Water budgets are often combined with other utilities such as sewer or storm water (or even budgeting for a local rodeo on one occasion). This and other similar factors created "noisy" data, which is more fully addressed in Appendix B. While property taxes are usually clearly identified among local districts, transfers among city accounts are not so clear. Cities, unlike local districts, also have sales taxes, corporate franchise taxes and other assorted fees that could be used to support water rates. For the purposes of this analysis, they are assumed to consist primarily of property taxes.

Municipal Water Departments. The most common form of water provider is a city department. When water is provided as a municipal service, the city sets up an enterprise account. Enterprise accounts are usually used by local governments for business-like services. Culinary water, wastewater, garbage and electrical services are examples of common municipal services managed through enterprise accounts. This generally isolates the revenues and expenses of the business-like services from broader municipal services such as police, fire, library, code enforcement and others.

While water services are often isolated in specific enterprise accounts, some municipalities combine multiple business-like services into a single enterprise account. This would allow fees from garbage services to support water services or vice versa. Cities can also transfer funds in and out of enterprise funds from their general funds. While there are specific regulations about the transfer of funds out of an enterprise fund to the general fund, there are not specific requirements regarding the transfer of funds from the general fund to an enterprise fund beyond general budget transparency requirements.¹¹ This allows cities to transfer revenues generated from property, sales and corporate franchise taxes, with the effect of lowering water rates for its water users. In other cases, cities will use revenues generated from water services effectively lowering the overall tax burden of property taxpayers.

Most of the 217 cities on which Utah Foundation collected data do not regularly transfer funds between their enterprise accounts and general funds. Among those that do transfer funds, the reasons behind those transfers are not always clear. Salt Lake City is an example of a city that uses transfers in and out of its water enterprise account for interdepartmental services. For example, Salt Lake City's public utility department uses lawyers employed by the city for legal services. In the other direction, the public utilities department manages GIS licensing for other city departments. These services have corresponding transfers in and out of enterprise accounts. Under these circumstances, it would not be accurate to say that property taxes are used to reduce water rates or water rates are used to reduce property taxes. As a result, it is not clear how many cities rely directly on property taxes in a manner that lowers water rates.

When looking at the 23 cities that tended to transfer funds into their water enterprise accounts between 2014 and 2017, among the revenues generated from water sales and transfers, transfers represented less than 2% of the total in nine cities. In the remaining 14 cities, transfers represented between 2% and 30% of the total revenue generated from water sales and transfers. These cities are more likely using property taxes in a manner that lowers the water rates.

On the other side are cities that use their water enterprise funds to support other government services. For example, one city transferred \$1.2 million from its water enterprise fund to its general fund annually from 2014 to 2017 – essentially subsidizing its taxpayers by charging water users more than what it used to deliver their water.

Again, some of these cases likely reflect interdepartmental transfers. Among the 57 cities that had net transfers of funds out of their enterprise accounts between 2014 and 2017, 15 cities had transfers representing less than 2% of the total revenues generated from water sales. The remaining 42 cities reported between 2% and 48% of the total revenues generated from water ed from water sales transferred to the general fund.

Improvement Districts. Improvement districts are local districts often used to provide municipal services to unincorporated areas, although some of these areas incorporated after the improvement districts were established. State regulations allow improvement districts, classified as local districts, to collect 80 cents for every \$1,000 of property value.¹² Similar to cities and their enterprise funds, some of these improvement districts provide more than one business-like service and combine the finances into a single fund. More than half (24) of the 43 improvement districts on which Utah Foundation collected data support water services with property taxes, accounting for anywhere from 3% to 100% of their total revenues collected from property taxes and water sales.

Water Conservancy Districts. Water conservancy districts are a specific subset of local districts. Among other activities, they are tasked to "provide for the conservation and development of water and land resources," cooperate with the federal government for the development and management of water infrastructure, and control and manage unappropriated state water.¹³ Not all water conservancy districts provide typical water services. Those that do often have expanded roles as well. The four largest water conservancy districts are substantial water providers in the state. Conservancy districts can generally collect 20 cents for every \$1,000 of property value. Those in the lower basin of the Colorado River (Washington and eastern Kane Counties) can collect one dollar for every \$1,000 of property value.¹⁴ All but one of the 21 water conservancy districts on which Utah Foundation gathered data collect property taxes, accounting for anywhere from 2% to 100% of total revenue generated from property taxes and water sales.

Metropolitan Water Districts. The final subtype of water-related local district is referred to as a metropolitan water district. They are organized and governed by cities to expand their water development capabilities. State regulations allow these entities to collect 50 cents for every \$1,000 of property value.¹⁵ Three of the six metropolitan water districts on which Utah Foundation gathered data collect property taxes, yielding anywhere between 9% and 100% of their total revenues generated from property taxes and water sales.

Water Provider Roles

In addition to type, water providers can be categorized by their differing roles. The broad categories include wholesalers and retailers. Wholesalers secure water from original sources to sell and distribute that water to other water providers. The Central Utah Water Conservancy District is a prime example of a wholesaler. Using its water infrastructure, it gathers water from natural sources in the Bonneville and Colorado river basins, treats it and distributes it to municipalities and other water providers in Salt Lake, Utah, Wasatch, Uintah and Duchesne counties. Metropolitan Water Districts and Water Conservancy Districts tend to be wholesalers.

Other water providers are retailers. These districts secure water either from natural sources or from wholesalers and distribute it to residential and commercial water users. One example is the Kearns Improvement District, which purchases water from the Jordan Valley Water Conservancy District and distributes it to more than 10,000 residential and commercial properties. Municipal departments and improvement districts tend to be retailers.

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OVERLAPPING JURSIDICTIONS

Many water providers have overlapping jurisdictions. The most common instance is a retailer within the area served by a wholesaler. But there is also the instance of Jordan Valley Water Conservancy District (predominantly a wholesaler) completely within the boundaries of the Central Utah Water Conservancy District (another wholesaler). There are also examples where the boundaries of retailers overlap. In most of these cases, an improvement district initially provided water to an unincorporated area that was later annexed into a city that was already a water provider. While the improvement district continues to provide the water, the area is also subject to property taxes levied by the city, which in some cases can be used to support the provision of water. Only 20% of Utahns live in the jurisdiction of just one water provider.



Most Utah water providers have annual budgets under \$1 million.

The difference between retailers and wholesalers is not always clear-cut. Both Jordan Valley Water Conservancy District and Washington County Water Conservancy District provide retail as well as wholesale services. Salt Lake City is a retailer, but provides many of the services associated with wholesalers, such as managing dams and reservoirs, watershed protection, streamflow to allow for the rehabilitation of fish species, and formal recreation sites associated with watershed lands.

Water delivery services include the capture, treatment, purification, conveyance, pumping, storage and distribution of water to end users. Water providers vary in how much they participate in this process themselves and how much they outsource to other water agencies. At its most simple, a water retailer might purchase treated water and merely pump and distribute it to its local users. Others, like Salt Lake City, are involved with the full range of aforementioned services.

Utah Foundation has collected property tax data on 287 water providers in the state: 217 cities and towns, 43 special and local districts, 6 metropolitan water districts and 21 water conservancy districts. The data on these water providers differs based on the type of entity, size and services provided. Utah Foundation has gathered as much data as possible for analysis in this series of reports.

Most of these providers (especially cities) do not use property taxes to support water service operations. However, some of these retail water providers purchase water from a wholesaler that does collect property taxes for operational purposes. This has the effect of lowering the water rates for retail providers' customers, even though the retailer itself does not collect property taxes.

Of the 294 water providers with total budget data available, eight have annual budgets larger than \$20 million – and half of these are water wholesalers along the Wasatch Front and in Washington County.¹⁶ (See Figure 3.) Another 84 have budgets between \$1 million and \$20 million. And 84 have budgets between \$250,000 and \$1 million. That leaves 118

providers with annual budgets below \$250,000. It should be noted that many of these entities with smaller budgets represent an enterprise fund of a city or town that would have a larger amount for its total budget.

Utah Foundation collected data on the number of individuals served from Utah's **Division of Water Resources** on 249 water providers. Most of these water providers serve fewer than 2,500 individuals. (See Figure 4.) Only four water providers serve more than 100,000 Utahns. The largest 15 retailers serve 1.5 million Utahns - or half the population of the state. For that reason, this report gives those 15 retailers additional attention. (See Appendix C for a list of the 15 largest retailers and the five largest wholesalers.)

Water Retailers in Utah

Water consumption varies widely by retail provider. Most retail water providers distribute between 200 and 399 gallons per capita per day. Generally speaking, areas with a higher population density tend to use fewer gallons of water per capita per day. This is because densely populated areas tend to have less surface area per capita that requires outdoor watering. There are a few cases, such as resort towns, where a very small population may be using a large amount of water per capita, but this is due to the fact that a large proportion of that water is used by tourists, or owners of second homes, who are not counted as part of the local population. In other cases, high use can be driven by a small population with a large industrial or commercial water user.

Overlapping jurisdictions might disguise the true water use of some areas. While

Most Utah water providers serve fewer than 5,000 individuals.





Source: Water provider's financial reports, Utah Foundation calculations.

In most retail water providers' service areas, Utahns use less than 400 gallons per capita per day.





Source: Utah Division of Water Resources, Utah Foundation calculations.

The Wasatch Front has relatively low per capita use, while south-central Utah has higher use.



Figure 6: Water Use by Basin, 2017, Gallons Per Capita Per Day

Source: Utah Foundation map based on Utah Division of Water Resources data.

some retail water providers offer both culinary and secondary water, some areas have a municipal provider offering culinary water while a second provider, sometimes a private water company, offers secondary water. There also might be variation among water providers on how they report water use. Where this occurs, total water use is obscured.

Utah retail water providers charge their customers in various ways. Utah Foundation used tiered rate data on 117 water providers, gathered by the Governor's Office of Management and Budget. Because of the wide variety of steps and rate increases, it is difficult to compare these entities with one another. A small sample demonstrating the range of tiered marginal rates is displayed in Figure 7. Base rates are also vary widely and are worked into the analysis displayed in Figures 8 and 9 on the next page.

To standardize these rates, Utah Foundation looked at average prices at nine key points where many water providers tended to change their rates. Utah Foundation compared whether a water provider's rates were generally average, above average or below average.

Utah Foundation also compared whether water providers' rates increased more sharply or more gradually than the average.

The approaches vary significantly. For example, both Nephi and Riverton have nearly flat rate schedules, but Riverton set its rate just under four dollars per block of thousand gallons, while Nephi set its flat rate at 60 cents per block. As another example, Salem and Price City both have equivalent prices,



Source: Governor's Office of Management and Budget.

Selected tiered water rates

demonstrate the variability among water providers' rate

Figure 7: Tiered Water Rates for

Select Water Retailers

structures.

Water providers with steeper tiers tend to have higher prices, but the overall price can vary substantially.

Figure 8: Water prices compared to rate escalations, 2017



Source: Utah Foundation calculations based on data collected by the Governor's Office of Management and Budget.

but Kearns Improvement District's rate schedule starts at 50 cents and grows to \$5.00, while Price City's rate schedule starts at \$2.47 and quickly falls to \$1.75 with a volumetric price schedule that reflects ordinary commodities rather than water providers' traditional conservation rates. These rates vary based on local geographic, topographic and economic factors and attitudes.

Utah Foundation found a strong link between prices and the degree to which rates escalate with use. Water providers with lower-than-average overall rates tend to have a shallower-than-average rate schedule, and those with higher-than-average rates tend to have

a steeper-than-average rate schedule. For example, Park City has both the highest prices and the steepest increases with use.

It is not clear if there is a cause and effect relationship, or if these water providers are just setting prices to encourage conservation. It should be noted that these comparisons are merely an attempt to help interested parties understand the current range of water providers and should not be interpreted as a recommendation of the appropriateness of one rate structure over another.

Few water providers have high prices but gradual increases or low prices with steep increases.

Figure 9: Water Rates Compared to Steepness of Tiered Increases

	Gradual increases	Average increases	Steep increases
High prices	2	21	7
Average prices	11	32	5
Low prices	8	31	0

Source: Utah Foundation calculations based on data collected by the Governor's Office of Management and Budget.

Most water providers do not rely on property taxes to fund maintenance and operations.

Figure 10: Type of District by Use of Property Taxes

Type of water provider	Water rates support taxes	Self-sustaining water rates	Taxes support water rates
City department	42	161	14
Improvement district	0	19	24
Water conservancy distric	ct O	1	20
Metropolitan water distric	t O	3	3

Source: Utah Foundation calculations based on data collected from annual financial reports from 2014-2017 published online by the Utah State Auditor.

The majority of water providers do not directly collect property tax revenues for operations. However, many retailers may purchase water wholesale from a provider that does. Even when consumers purchase water from a retail provider that does not collect property taxes, the price they pay for water may be lower if their retailer sources water from a wholesaler that does. More than 90% of Utahns likely pay lower water rates than they otherwise would because they live within the jurisdiction of a water provider (either wholesale or retailer) that relies on property taxes. Two water providers alone, Weber Basin Water Conservancy District and Central Utah Water Conservancy District, (both large wholesalers that collect property tax revenues) span Salt Lake, Utah, Weber, Davis, Sanpete, Morgan, Wasatch, Duchene and Uintah counties, as well as the most populated segments of Juab and Summit counties. Because of the overlapping jurisdictions of water providers, nearly half of all Utahns live in an area subject to two water providers collecting property taxes. Nearly a quarter of Utahns also live in



WHO USES THE MOST WATER?

There are multiple ways of measuring use. In terms of total gallons (a less than useful measure), Utah ranks 30th in the nation. But, when looking at total water use on a per-capita level, Utah jumps to 12th. If one examines just domestic water per capita (which excludes agricultural water), Utah is right behind Idaho in second place. Yet if one looks only at per capita use among the public supply customers (the water provided by local governments) Utah rises to the top.*

To some degree, Utah's high water use should be expected. As one of the driest states in the U.S., it cannot depend on the weather for outdoor watering. In addition, there is the possibility for variances between how cities and states support water use. Some of the reason Utah ranks so high might be because Utah is more comprehensive in its water reporting than other states.

In an effort to create comparable numbers, a working group of Western water providers re-evaluated data for eight Western metropolitan areas, including most of Salt Lake County. They found that Salt Lake County had the 3rd highest use per capita among the eight population centers (behind Salton Sea Basin in Southern California and the Las Vegas region), and that water use among these population centers was linked to climatic factors such as precipitation, evaporation and transpiration.[†]

*Milligan, Mark, "Glad you asked: Does Utah really use more water than any other state?" Utah Geological Survey https://geology.utah.gov/mappub/survey-notes/glad-you-asked/does-utah-use-more-water/.

⁺ Jordan Valley Water Conservancy District, "Presentation on the 2016 Intermountain Section AWWA Annual Conference," presented on 15 September 2016.

the jurisdiction of a water provider that contributes water rate revenue to support other services.¹⁷ (See Figure 11.)

How Utah Compares to Other States

There is disagreement and conflicting data regarding the prevalence of using property taxes for operations.

In 2005, research sponsored by the American Water Works Association concluded that while most water providers claim to make tiered rates reflective of the cost of service, many use external grants or local taxes to support revenue from water rates. The statement is admittedly general, and the study did not quantify the extent to which water providers pay for infrastructure as opposed to operations and maintenance using property taxes.¹⁸

When looking at Utah and Western states in particular, there are three surveys published by groups with vested arguments on either side of the debate.

The Utah Rivers Council, a nonprofit dedicated to Utah's rivers and water sources, carried out a survey of 54 suppliers across 11 western states in 2002. The survey found at that time that 23 (43%) water suppliers were able to levy property taxes and only 12 (22%) actually did so. Of those, only four (7%) could use water for uses beyond debt service. The report contrasts these findings with eight Utah water conservancy districts which all collect property tax revenues.¹⁹ However, Utah Foundation verified that at least nine of the out-of-state water providers that Fewer entities use property taxes, but they tend to cover larger geographical regions.





Source: Utah Foundation Map using data from Utah Division of Water Resources, Utah State Tax Commission data published by Utah's Automated Geographic Reference Center, and annual financial statements for each entity from 2014-2017 published online by the Office of the Utah State Auditor.

reported they did not directly collect property tax revenues for operations obtained water from a wholesaler that did use property taxes for operations as of 2017.²⁰

A survey commissioned by the Jordan Valley Conservancy District in 2012 looked at eight Western states. The report concluded that "six of the eight Western states use property tax in some form to support the development and delivery of [municipal and industrial] water." While the report did not count Arizona as a state that collected property tax, Utah Foundation found that some water entities in Arizona currently also collect property taxes.

The survey also collected responses from eight large water providers across the West. Of these entities, two collected property tax revenue and two collected sales tax or gross receipts tax. Only one of these four could use tax revenues to fund operations and maintenance, with the rest dedicating taxes to capital needs.²¹ This report contrasts these findings with seven Utah water conservancy districts and one metropolitan water district, all

of which use property tax revenues for more than just debt service.

A third survey commissioned by the Washington County Water Conservancy District compiled a list of 20 Western water providers outside Utah. It found that 10 of them collected property and/or sales taxes. Utah Foundation was able to verify that three of them were restricted to using tax revenues only for debt service or infrastructure investment.²² The remaining seven appear to be able to use property taxes beyond debt service and infrastructure investment.²³

While these surveys do not clearly establish the prevalence of the practice of using property taxes for water operations, it is clear that there are several examples of water providers on both sides of the question.

One final note: The United States Governmental Accountability Office conducted a survey asking state water managers whether they expected local, regional or statewide water shortages within the next 10 years with average water conditions. Utah was one of five states – and the only state in the West – to report that it expected no water shortages within the next 10 years in both the 2003 and 2013 surveys.²⁴ This could suggest that Utah's approach to funding water development and operations has allowed it to develop water resources in a manner that protects against shortages, that the state has sufficient water sources that it needs no immediate need for water development, or it could simply mean that Utah water managers have a rosier outlook than their counterparts in other states.

CONCLUSION

Water is a core component of Utah's future development. As one of the driest states in the nation, with one of the fastest growing populations, it is vital that interested parties in the state regularly explore the best ways to provide water resources for the future. A central part of that exploration is a careful analysis of how Utahns pay for their water and whether the current payment systems best accomplish their goals.

There may not be a one-size-fits-all approach in Utah. Utah's 308 water providers vary widely in their tiered rate structures, size and funding mechanisms. Per capita water use also varies widely, depending on climate, geography and community characteristics.

Most of Utah's providers do not directly use property taxes, even though they can. However, seven of Utah's 15 largest water retailers do use property taxes, as do all five of the largest wholesalers. As a result, more than 90% of Utahns live within the jurisdiction of at least one water provider that collects property taxes. While the national prevalence of supporting water rates with tax revenues is not clear, it is clear that there are many water utilities that manage both with and without property taxes supporting water rates.

Therefore, the question may not be about what other states are doing, but what approaches will lead to the best outcome for Utahns.

The subsequent three parts of this water series outline arguments to help citizens and policymakers clarify those approaches. They dive deeper into how using property taxes and water rates to fund water development and delivery can affect key priorities, including conservation, fairness, fiscal health, transparency and representation.

APPENDIX A: ANALYZING WATER RATES SCHEDULES

Utah Foundation discovered that it is a complex process to attempt to categorize the various water rate schedules. In the end, Utah Foundation focused on two factors, the overall price level and the slope at which the rate schedule increased.

A number of different ways of calculating average price levels were considered. Utah Foundation settled on an option that simplified 100 datapoints to nine quantities where water providers tend to raise their rates. Utah Foundation used the cumulative water rates, which reflect the full bill (base monthly fees in additional to marginal rates) a resident would pay a water provider for monthly consumption of 1,000, 5,000, 7,000, 11,000, 21,000, 31,000, 41,000, 51,000 and 61,000 gallons. Relatively few water providers adjusted tiered rates further after a monthly consumption of 51,000 gallons. For each of these use points, water providers' distance from the mean was normalized, and then the average normalized difference was used to compare water providers' price levels.

To estimate the relative steepness of water providers' rate schedules, Utah Foundation used ordinarily least squares to calculate the slope of the line of best fit of the marginal water rates at the same consumption points above. Utah Foundation used these price points because prices were relatively stable after a monthly consumption of 51,000 gallons, and consumers, generally speaking, would be much more likely to use the lower end of the rate schedule than the upper end of the rate schedule. Utah Foundation then analyzed the normalized difference from the mean to evaluate whether a district's rate schedule was steeper than average, or shallower than average.

APPENDIX B: ANALYZING WATER PROVIDER BUDGETS

To attempt to identify longer term trends and reduce noise from annual outliers, Utah Foundation averaged budget information from 2014 to 2017, using financial reports filed with the Office of the Utah State Auditor. It should be noted that in many cases water providers are also involved in other services, such as sewer, waste removal and landfill services. When a city or town is a water provider, it separates water revenues and expenses from its primary budget into an enterprise fund. Some cities and towns include other services provided in the same enterprise account. In one case, even local rodeo funds were accounted for in the same enterprise fund as water. Where possible, Utah Foundation has attempted to isolate water revenues and expenses from other services. When this was not possible, account totals were used.

When looking at local districts, revenue from property taxes and from other sources are generally clearly identified. However, when looking at enterprise funds among cities and towns, property taxes were not always as clearly identified. Among some cities and towns, funds were transferred in from outside the enterprise account. These could have been from property tax revenues, sales tax revenues, corporate franchise tax revenues or surplus revenues from another enterprise fund. Because these outside funds are being used to support water development and distribution, and since they are likely often property tax revenues, Utah Foundation considered all these transfers to be property taxes to make analysis consistent.

APPENDIX C: THE LARGEST WATER PROVIDERS

5 largest wholesalers by annual budget:

Central Utah Water Conservancy District Jordan Valley Water Conservancy District Weber Basin Water Conservancy District Metropolitan Water District of Salt Lake and Sandy Washington County Water Conservancy District

15 largest retailers by population served:

Salt Lake City Provo Granger-Hunter Improvement District West Jordan Orem Sandy Ogden St. George Layton South Jordan Taylorsville-Bennion Improvement District Lehi Logan Kearns Improvement District Jordan Valley Water Conservancy District

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11 Utah State Code Sec. 10-6-135.5.

12 Utah State Code Sec. 17B-1-1002.

- 13 Utah State Code Sec. 17B-2-1002.
- 14 Utah State Code Sec. 17B-2a-1006.
- 15 Utah State Code Sec. 17B-1-1002.

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Water Costs and Conservation in Utah

THE PAYING FOR WATER SERIES Part II - September 2019

INTRODUCTION

Utah ranks among both the driest and fastest-growing states in the nation.¹ It is therefore essential that Utah's water is well managed to ensure the sufficiency of affordable quality water into the future.² Conservation efforts play a core role.

Utah water providers are involved in a variety of conservation efforts. Some water providers offer rebates on purchases that reduce the amount of water used, such as low-flow toilets or smart sprinkler timers. Water providers also offer educational materials and opportunities to homeowners and others on what they can do to conserve water. For instance, the Weber Basin, Jordan Valley and Central Utah water conservancy districts all have extensive conservation gardens that demonstrate low-water-use landscaping options. Some water providers also offer grants to fund water conservation projects, like converting lawns to landscapes that require lower water use.

Conservation is also linked to how much water costs – and how water users pay those costs.

Utah Foundation's series of water reports explores how Utahns pay for water. The first installment in the series provided background on the issue of water and water finance in Utah. Historically, property taxes, impact fees and water rates have played a strong role in funding the development and delivery of water. But there is debate over the extent to which property taxes should play a role in Utah's funding model.

This report examines the differing viewpoints in the context of conservation. It first outlines how water pricing can encourage conservation. It details the current effects of rates on water use. It then explores conservation in terms of fixed fees and variable rates. Lastly, the report examines incentives for water providers to encourage conservation.

WATER PRICING AND CONSERVATION

Most water providers embrace the value of conservation efforts and have conservation programs in place. At the same time, conservation could be expanded if water providers were to move beyond property taxes and instead rely solely on water rates and impact fees.

By shifting to a greater reliance on water rates, most residential customers (who use 70% of the water in public community systems) would end up with higher water bills.³ While their property taxes would decrease, their water bills would increase, providing a stronger linkage between use and cost.

KEY FINDINGS OF THIS REPORT

- Conservation from an increase in water rates might be limited in the short term, but it would increase over the longer term.
- Comparing Utah's water providers shows that, on average, providers with 10% higher rates have 6.5% lower water use.
- A greater dependence on use-based water rates would generally tend to raise those rates and encourage conservation; however, there is currently no clear indication that water providers that depend upon a higher share of property tax revenues have customers with higher water use.
- Some water providers encouraging conservation could find themselves in a position where water use drops so much that they cannot continue to cover costs without raising rates.
- Policymakers could decouple revenues from the quantity of water sold, so conservation does not negatively
 affect water providers' budgets.
- Generally speaking, conservation is the cheapest way to meet demand for water, followed by agricultural conversion. Building new infrastructure is far more expensive.



It is a well-established economic principle that the more an individual pays for a product, the less that individual will tend to use.⁴ Any decrease in use for each price increase depends on several factors. One factor is the availability of a substitute product. For example, if the price of apples increases, people would eat more oranges and bananas. Water, on the other hand, is a unique good and has no readily available substitute. Another factor is that water use is linked to activities that are strongly defined by habit – such as watering the yard for a certain amount of time each day or filling the tub when taking baths. Local ordinances regarding required green space could also drive water use. These factors might initially limit the amount of water conserved.

However, in the long term, use becomes more flexible. One excellent example is the price of oil. Oil was often used to heat people's homes (especially in the northeast United States). When global events led to steep oil price increases in 1973, there were not necessarily significant changes to behavior in the short term. While thermostats were adjusted, individuals could not readily find a new method of heating their homes. But over the long term, homes were built with better insulation, reducing the amount of oil needed to heat homes.⁵ Homes were also built to use other heating sources, such as natural gas or electricity. In addition to home heating, oil is also the primary source for gasoline. When prices rapidly increased in the early 1970s, fewer car owners perhaps took summer trips, but people still had to commute the same distance every day, which limited the effect of price increases. However, over the long term, people changed commuting habits, and more fuel-efficient cars were developed.⁶ In both cases, even though there was little that could be done over the short term, the long-term reduction was large.⁷

If water prices increase, homeowners in the short term might water their yards a little less or water their yards at night when less water is lost to evaporation. They also might make slight changes in household habits, such as shorter showers or not letting water constantly run while washing dishes or brushing teeth. Ultimately, there might be little change over the short run.

Over the long term, the installation of water-efficient showerheads, toilets, faucets, washing machines and dishwashers would become more attractive options when it comes time to replace existing fixtures and appliances. Individuals would tend to reduce the frequency of overwatering their lawns as they experiment with different watering cycles that would lower their water bills. More water efficient landscapes would be created to replace water-thirsty lawns. Higher water prices could also put pressure on local officials to permit or even encourage more water-efficient landscaping and encourage buyers in the housing market to prioritize locations with water-efficient landscapes.

Further, individual habits of water use would change as people learned ways to lower their water bills. While use might not change immediately, average use would decrease over the longer term in significant ways.

Conservation would be limited with regard to non-metered water, which by definition cannot be charged at volumetric rates. Because this water is charged at a flat rate regardless of how much is used, increasing the rate would not inspire conservation. In fact, it might negatively affect conservation by encouraging water users to "get their money's worth." For the most part, non-metered water is unimportant in the debate over taxes and water rates because both the water providers that rely on tax revenues and those that do not might offer unmetered service. Changing revenue sources would theoretically make little difference regarding unmetered use. In either case, it is a fixed fee that does not change based on the amount of water used. Shifting to a metered approach in those cases would introduce a significant new dynamic, as seen in the Weber Basin Water Conservancy District.⁸

While higher prices and more steeply tiered rates would reduce water use, it may not be necessary to limit the ability of water providers to use property taxes to generate this effect. Water providers could adjust the rate structure, using higher marginal rates among high-volume users to encourage lower use without changing the share of their budgets obtained through property taxes. Shifting the share of revenue generated through property taxes to water rates while adjusting the rate structure to impose higher marginal rates for high-volume users could further leverage rate structural changes' impact on conservation.

THE ROLE OF WATER PROVIDERS CONCERNING CONSERVATION

Water providers take different approaches to conservation. Some water providers may see encouraging conservation as a top priority. For others, the primary goal of a water provider is to offer the amount of water its users desire instead of dictating how much each user should receive. To some, tiered rates designed to encourage conservation can seem coercive. Taken to extremes, conservation-oriented tiers could work as a bludgeon to enforce limits defined by water providers. But, by comparison, conservation tiers tend to be less coercive than the actions municipalities tend to enforce during drought conditions, such as limiting the time of day outdoor watering is allowed or the amount of water available.

Can Water Providers Institute Conservation Pricing?

Utah state law requires retail water providers to institute increasing tiered pricing for culinary water.⁹ It also provides that water rate structures designed to encourage the more efficient use of water can be included in water providers' required water conservation plans.¹⁰

Companies control the number of products they manufacture to carefully meet demand. Water providers, on the other hand, often develop water in blocks. Once current resources are exhausted, water developers might choose to secure new sources of water, which does not just meet the immediate demand for water, but can far exceed it. Usually, the new water source is more expensive to develop than previous sources. This trend in water development matches increasing tiered rates. Lower tiers are easier to procure and thus have cheaper rates. This reflects the portion water providers can easily access. Higher tiers represent increasingly harder water to obtain and distribute. However, if a water provider designs rates to promote conservation that go beyond the cost of obtaining that water, it may be subject to legal challenges. For instance, certain water providers in California instituted conservation-oriented pricing, but courts later determined that state law required them to redesign their pricing so that it was better reflective of the costs of obtaining the water.¹¹

Whatever rate structure a water provider settles on, they must be able to justify the rates charged in order to prevent legal challenges. This may discourage water providers from imposing steeply tiered rate structures. However, the water providers' estimate of the cost of water may be low if water is purchased from a wholesaler that collects property taxes. When a wholesaler collects property taxes, it is able to sell water at a lower price. Retailers then set their price based on the lower price at which they obtain water. Reducing reliance on property taxes would increase the price of water for retailers, which would then be able to better justify higher retail rates that better encourage conservation.

Links Between Water Rates and Use

Utah Foundation's analysis of 107 retail water providers indicates a strong relationship between the water rate structure and the residential potable gallons used per day per capita. Among retail providers, a 10% increase in the water rate correlated with a reduction

THE CORRELATION BETWEEN HIGHER RATES AND LOWER WATER USE

It should be noted that water providers with 10% higher combined base and tiered rates and 6.5% lower water use is a correlation, but the reason why that correlation exists is not clear. While it is likely that higher prices encourage conservation, it may also be true that a water provider that sells less water per capita might lack the critical mass of customers needed to keep prices low, or a water provider had to increase rates because of voluntary conservation measures (discussed later in this report).

Utah Foundation also found an impact from base rate increases even though economic theory indicates that it should have little impact on conservation. One explanation is higher base rates encourage individuals to pay more attention to their water bills, furthering the effort of conservation overall. Another possibility is that water providers with lower water usage have shifted a larger portion of their revenues to fixed fees to avoid the loss of revenue from lower levels of water use.

Alternatively, there might be something different about these providers (i.e., local geographical, topographical or economic conditions) that cause the water agencies to have both higher water prices and lower average use.

of 2.9% in gallons used per capita per day. This suggests that if a water provider raised its marginal water prices from \$2.00 to \$2.20, for example, it might expect to see its residential potable gallons used per capita per day fall from 150 to 145.5. (See the Appendix for methodology.) Base rates had a similar impact. If a water provider had a base rate 10% higher than a similar provider, then its water use would be expected to be 3.5% lower. A 10% increase across both base and tiered rates is linked to a 6.5% lower usage. This combined effect of prices falls within a typical range of estimated effects for Utah and other Western states. Other studies have estimated between a 0% to 12% reduction in water use when prices are 10% higher, with a typical estimate of 5% lower usage.¹²

But, perhaps surprisingly, neither the makeup of a budget nor the degree to which water providers rely on taxes, rates and fees have any apparent connection to current per capita water use. The fact that water use is linked to the price of water, but not necessarily to whether a provider depends upon a stream of property tax revenue, suggests that conservation is dependent on the water rate structure charged to customers, rather than a water provider's budgetary mix. This corresponds with the idea that prices are considered a primary source of communication about the value and availability of a good. Still, water providers would be able to encourage a higher level of conservation by leveraging their budgets to depend more heavily on water rates and developing a structure that charges high-volume users substantially higher prices.

Fixed Fees and Variable Rates

Many utilities use a combination of fixed fees and variable rates when they charge consumers for their use. Utilities such as water, power, gas and sewer have a fixed cost for their infrastructure. This cost remains the same whether the services are used or not. As a result, utilities charge a set amount to each consumer that remains the same whether the consumer uses the service or not. In effect, they are paying for their access to the network.

When comparing water providers, there is no clear relationship between property tax revenues and water use.



Figure 1: Share of Water Provider Budget from Property Taxes by Water Use

Source: Utah Division of Water Resources and Utah State Auditor. Utah Foundation calculations.

DROP BY DROP | 4 | UTAH FOUNDATION

The current debate about how much solar panel owners should pay for their use of the electrical grid revolves around this issue of fixed versus variable costs. Changes in the variable cost structure would likely result in lower use because the more a homeowner uses, the higher the utility bill. Use is not as likely to be affected if there is an increase in the fixed rates.

Property taxes represent a fixed cost. Whether the homeowner uses 50,000 or 500,000 gallons of water that year, the amount of property taxes will not change. Similarly, if water providers stopped collecting \$240 annually in property taxes but instead charged a fixed fee of \$20 a month, consumers would have no incentive to change their water use. Regardless of how much water is used, water users would still be charged the same amount in fixed fees. If water providers shifted from property tax revenues to fixed base rates, it would not be nearly as effective in terms of conservation as moving to quickly escalating tiered rates.

Complications from Overlapping Jurisdictions and the Wholesale-Retail Water Provider Structure

Limiting a water provider's use of revenues from property taxes is not as straightforward as it might at first seem. Many of the water providers that rely heavily on property tax revenues are wholesalers. These entities do not actually sell water to individuals, or if they do, it is a fairly limited part of their operations. Rather, they sell water to cities and local districts, which then sell the water to their customers.

This is further complicated by overlapping jurisdictions. For example, residents of West Valley City pay property taxes to the Central Utah Water Conservancy District, the Jordan Valley Water Conservancy District (both of which are wholesalers), and the Hunter-Granger Improvement District. This is because the Central Utah Water Conservancy District procures the water from the Duchesne River and the Provo River System and sends a portion of that north to the Jordan Valley Water Conservancy District. They in turn sell that water to various cities and improvement districts in the Salt Lake Valley, including the Hunter-Granger Improvement District, which serves West Valley City. Limiting the role of property taxes for each of these entities would have complicated consequences. The Central Utah Water Conservancy District has limits imposed by federal regulations as to what it can charge for its water.¹³ Additionally, while the increasing tiered rates of water sold to consumers has been addressed, water sold at the wholesale level works differently.¹⁴

It should be noted that limiting water providers' ability to collect property taxes would not, in aggregate, make water more or less expensive. Water providers are not allowed to generate profits; the amount they generate through property taxes and water rates reflects the cost of providing the service. (There is something of an exception for cities, which can transfer funds out of their enterprise accounts subject to public meetings). While there might not be a difference in the total amount generated, there would be a large difference in who bears the burden of the aggregate cost, which will be more fully addressed in a subsequent report in this series.

Take a hypothetical example of what the situation might look like if water providers were restricted to using water rates and fees to cover operational and maintenance costs. Because each of these entities would no longer be able to use property tax revenues, each would have to increase its rates. This will have something of a compounding effect. In the case of the residents of West Valley City, Central Utah Water Conservancy District would have to raise its rates, because it could no longer collect property taxes. Jordan Valley Water Conservancy District would have to increase its rates in order to cover both the

If water providers shifted from property tax revenues to fixed base rates, it would not be nearly as effective in terms of conservation as moving to quickly escalating tiered rates. revenues it used to collect through property taxes, and the higher rates from Central Utah Water Conservancy District. Similarly, Hunter-Granger Improvement District would have to increase its rates to compensate for both its lost property tax revenues and its higher cost to obtain water from Jordan Valley Water Conservancy District.

The degree to which switching from property tax revenues to water rates affects water conservation would depend significantly on how Hunter-Granger Improvement District chooses to implement those rate increases. It could be the case that most of those rate hikes would be part of a higher base fee. This could logically be the case, because that approach might align with the fixed costs associated with the infrastructure; but this might limit the impact on conservation. On the other hand, if increases in the rates on water use were emphasized, the structuring of the rate – such as the steepness of increases at various escalating use levels – could more strongly encourage conservation.

In short, changes in the funding mechanism would run into multiple complexities given the relationship between water wholesalers and water retailers and overlapping jurisdictions. While complexity is not necessarily a good reason to avoid a change, it is a good reason to be cautious in analysis. With multiple actors and different priorities leading to various rate structures, it is difficult to predict the consequences of switching from partial support from tax revenues to complete reliance on rates and fees. With that in mind, the general principle is, the more the cost is transferred from property taxes to tiered, use-based rates, the more water will be conserved.

Different Types of Water Users

As outlined in Utah Foundation's initial report in this series, different types of users pay different shares of property taxes. Owners of primary residences pay property taxes on 55% of their property's value. Commercial users pay property taxes on 100% of their property's value as well as taxes on their personal property. Generally speaking, institutional users (like governments, universities, churches and various other nonprofits) pay no property taxes.¹⁵

Moving from a structure supported by property taxes to a structure supported more heavily or solely by water rates would affect each of these groups differently. A more detailed analysis will be provided in part 3 of this series, which discusses fairness.

While a lot would depend on the rate structures of their specific provider, on average residential users would likely pay a net higher amount, encouraging water conservation. Residential owners with higher incomes would tend to conserve less than those with lower incomes.¹⁶ Many commercial users could see the overall cost of their water decrease, despite higher rates. The biggest effect would be on institutional users, which often have large areas of watered green space. These entities would see the biggest change in the amount they pay for water and would have some of the strongest incentives to implement conservation measures.

One way to create the same results without limiting water providers' ability to use property taxes would be to charge differential rates for residential use, commercial use and institutional use that compensate for the amount these entities do not pay in property taxes. Just over half of Utah's water retailers already offer differential rates for commercial water users. Nearly 30% of these retailers offer a discount for commercial water users while 22% collect a premium from commercial water users. These targeted differential rates could be expanded and adjusted to encourage conservation among residential and institutional users.

INCENTIVES FOR WATER PROVIDERS TO ENCOURAGE CONSERVATION

Typically, water providers – like other utilities – lack financial incentives to encourage conservation. If consumers use less, then revenue from water rates decreases. Water providers do not generate profits, but they must cover administrative, operations and maintenance costs. As a result, if they use water rates to encourage conservation they could find themselves in a position where water use drops so much that they cannot continue to cover their costs.¹⁷ This was the case in many water districts in the 2011-2017 California drought. As water providers raised rates to cover budget shortfalls, customers felt punished for successful conservation efforts.¹⁸

In other types of utilities, states are experimenting with alternative funding structures that provide financial incentives to encourage conservation. Most utilities naturally have a monopolistic structure. Usually, a public utility commission has authority over utilities to ensure that utility companies do not abuse that power. These commissions generally set a fixed price or rate structure at which the commodity can be purchased. The utility company's revenue is then based on the volume sold, with higher profits generated from selling additional units. This discourages utility companies from conserving, because conservation would eat into their revenues and possibly their profits.

An emerging alternative method is do decouple profits from the number of units sold. This is done by the public utility commission setting a fixed amount of revenue rather than a fixed price. This allows the utility to cover its costs by collecting a specific amount of revenue.¹⁹ The utility's primary incentive at this point is to not increase profits by selling more units, but rather increasing profits by lowering the costs. One of the quickest ways of lowering costs is by selling fewer units.

Rate decoupling holds the potential of allowing public utilities to cover costs while at the same time reducing the volume of sales. While several states have implemented rate decoupling for electric and natural gas utilities, its implementation among water providers appears to be more limited, despite the recognition of its potential by the National Association of Water Companies.²⁰

In order for decoupling to be successful in increasing conservation, any existing tiered rates charged to users would need to be more flexible. Rates might need to be established in ranges based on how much water is demanded. Alternatively, rates could fluctuate on a quarterly, or even monthly basis.



OTHER FACTORS IN CONSERVATION, CONVERSION AND CONSTRUCTION

While conservation, conversion and the construction of new infrastructure are generally considered increasingly expensive options in new water development, there are other factors to consider. For example, while conversion is cheaper for the water provider, water users typically bear the upfront costs. It is the users who invest in water-efficient fixtures, invest in landscapes that use less water and face the more intangible costs of changing habits.

However, investment in water conservation pays off. It reduces the amount of water consumed, which reduces the amount users will pay in their water bills over time. Because conservation reduces water used, and bills paid, it may be cheaper in the long run even if it is more expensive upfront.

On the other hand, when new infrastructure is built, users will pay higher rates to cover construction costs. But they also pay the additional costs of maintaining and operating the new infrastructure while not specifically reducing their water use and saving on their water bills.

There is a basic amount of water past which Utahns cannot conserve. At some point, additional investments in water conservation will be decreasingly effective in reducing water use. There are now examples where the cost of producing an acre-foot of water is cheaper by building new infrastructure than encouraging further conservation through landscape conversion.*

It is ultimately the end user that must bear the cost of any investment, whether in conservation, conversion or new infrastructure.

Finally, while agricultural conversion is generally cheaper than new infrastructure, public opinion can also influence decisions. In a public feedback process conducted by Envision Utah, 37% of more than 50,000 respondents indicated they were willing to water their lawn less to avoid taking water from agriculture, while only 4% indicated they were not at all willing to do so. Along the same lines, but with less support, 17% of respondents indicated they would be very willing to spend more money investing in new infrastructure to avoid converting agricultural water, while only 8% indicated they were not at all willing. [†]

* The cost per acre-foot of water for various types of conservation are outlined in Hansen, Allen & Luce, Inc. and Bowen Collins & Associates, "Draft: Utah's regional M&I water conservation goals," Prepared for the Utah Division of Water Resources, (2019), https://water.utah.gov/wp-content/uploads/2019/08/Regional-Water-Conservation-Goals-Public-Review.pdf. Compare to the cost of development for the Bear River Pipeline. See Bowen Collens & Associates and HDR Engineering, "Bear River Pipeline concept report," Prepared for the Utah Division of Water Resources, (2014), https://cachecounty.org/assets/department/water/brpipeline/Vol%201_Final_Bear%20River%20Pipeline%20Concept%20Rpt.pdf.

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Decoupling revenues would allow freedom for water providers to institute other conservation measures without diminishing financial stability. They would be free to develop more steeply tiered rates, differential water rates where prices were higher during droughts and times of scarcity, and other conservation measures. Water providers might need to take extra steps to be transparent as consumers adapt to the new billing system.

Even when there are not necessarily financial incentives, there are other factors that can encourage water providers to promote conservation among their users. Water providers are committed to providing enough water for their users. As demands grow, they can gain water from three primary sources: conservation, conversion and new source infrastructure. Conservation virtually increases the water supply as conserved water can be used by other users. Conversion increases the supply by converting non-potable sources, such as agricultural water, to residential potable water. Finally, building new infrastructure can provide access to water from a new location, whether through pipelines, tunnels or wells.

Generally speaking, conservation is the cheapest way to increase the supply of water, followed by conversion. Conversion tends to be more expensive because water may have to be distributed differently and treated at a higher standard. The cost of building new infrastructure can be quite expensive, even setting aside the sometimes-substantial costs to the environment. Because building new infrastructure and even conversion tend to be both more expensive and logistically challenging, there are pressures on water providers in their internal organizations to first encourage conservation, before resorting to the more expensive and complicated options. In the end, this can pay off for users by reducing cost pressures, and thereby pressures on the water rates that users pay.

CONCLUSION

Utah's water providers know that conservation is important to both water sustainability and minimizing investments in infrastructure expansions. For water providers that depend heavily upon property taxes, conservation efforts could be bolstered with a shift to greater reliance on water rates.

But how effectively the shift to water rates promotes conservation depends heavily upon on how water rates are structured. In fact, some of the effects of conservation that would be generated by relying on water rates could be captured without removing the property tax component, assuming that the water rate structure were well-calibrated to encourage conservation. For instance, increases in use-based rates can have a far more significant impact on conservation than increases in base water rates. Those conservation gains could be further leveraged by depending still less on property tax revenues.

In addition, there are a number of ways conservation could be increased even where property taxes make up a significant portion of a water provider's budget. Decoupling revenues from the volume of water sold, for example, removes a disincentive from water providers to encourage conservation.

However, conservation is just one aspect to address in the debate over the usefulness of property tax revenues in funding water services. Subsequent reports in this series will focus on fairness and practical considerations pertaining to property taxes and water rates.

Some of the effects of conservation that would be generated by relying on water rates could be captured without removing the property tax component, assuming that the water rate structure were well-calibrated to encourage conservation.

APPENDIX

Utah Foundation used 2017 water use data from the Division of Water Resources, 2017 water rates gathered by the Governor's Office of Management and Budget and 2014-2017 budget information gathered by Utah Foundation from water providers' financial reports posted on the Utah State Auditor's website. The four years of budget information was averaged to mitigate noise from unusual years. (For some limitations in the budget data, view Appendix B in Part I of this series.)

Utah Foundation used the ordinary least squares regression to estimate the impact of various factors on water use. Fixed effects of water basin and type of budget (enterprise accounts solely responsible for water services, enterprise accounts responsible for additional services with water data broken out, and enterprise accounts responsible for additional services without water data broken out) were also included in the model to account for differences in geographical characteristics and budget reporting. The constant and slope of the line of best fit were calculated by using the ordinary least squares method on marginal rates between 1,000 and 71,000 gallons. Few water providers increased tiers after 71,000 gallons.

Figure 2: Regression Results on Retail Water Use

Independent Variables (transformed with the natural log)	Coefficient
Operating budget	0.181
Water rate revenues as a share of operating budget	0.130
Impact fee revenues as a share of operating budget	-0.011
Property tax revenues as a share of operating budget	0.001
Base rate	-0.359***
Constant for the line of best fit	-0.293***
Slope for the line of best fit	0.037
Population	-0.417
Secondary residential GCPD	-0.099***
Population Density	-0.115***
Controlling Variables	
City, local district, or water conservancy district	
Water basin (based on DWRe classification)	
Type of budget (solely water, or combined with other services)	

*** Statistically significant with $p \le 0.001\%$.

It should be noted that estimates of price differences on water use vary based on the type of methodology. Utah Foundation did a cross-sectional study, which looks at the variations of many different districts. Many other studies take a time-series approach which looks at the before-and-after situation of changes in a single district. Cross-sectional studies might capture differences due to topographical, or local economic factors. Time-series might not give enough time to adapt to long-term solutions.

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WHO GETS THE BILL? Water Finance and Fairness in Utah

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THE PAYING FOR WATER SERIES PART III - SEPTEMBER 2019

INTRODUCTION

Utah ranks among both the nation's driest and fastest growing states. Water governance approaches that ensure sufficiency of affordable, quality water into the future is a major concern. Utah Foundation's series of water reports seeks to fully explore the issue of how we pay for that water.

Historically, property taxes, impact fees and water rates have played strong roles in funding the development and delivery of water. But there is a robust debate over the how much property tax revenues should be used (if at all) in Utah's funding model.

Parts 1 and 2 of Utah Foundation's series on paying for water addressed Utah's water landscape, how residents tend to pay for water delivery and infrastructure, and how the balance between water rates and property taxes can affect water conservation. Part 3 specifically looks at fairness issues pertaining to the use of property tax revenues and water rates.

WHO PAYS THE BILLS?

Issues of water fairness primarily revolve around the fact that revenues generated from property taxes and revenues generated from water rates rely on two different groups. One group includes all those who pay property taxes, and the other includes all those who use water from the public community system.

The property tax group includes owners of property within defined geographical regions of service. However, different groups have different levels of property tax liability, as follows:

- Most homeowners pay a property tax rate based upon 55% of their properties' total assessed value (through a 45% exemption).
- Owners of secondary residences, undeveloped land and commercial properties all pay property tax rates based on 100% of their properties' total assessed value.



KEY FINDINGS OF THIS REPORT

- Depending on their water providers' reliance on property taxes, nonprofit institutions and other exempt and partially exempt property owners may pay less than their share for the water they use.
- A shift away from property taxes could result in steep rate increases for some users including school districts and universities. In some cases, those costs may end up being passed on to the public in other ways.
- Based on who uses the most water, a move to greater reliance on water rates would generally provide for a fairer distribution of the cost.
- Using property taxes ensures that a broader base of those who benefit from water systems share in the cost.
- There are ways to address certain fairness issues without changing the revenue mix, such as by charging differential rates based upon user type.
- To the extent that property taxes lower water rates, they can make water more affordable to lower income Utahns. However, there are ways to adjust water rates to address basic affordability without using property taxes.
- From a broad perspective, a mix of property taxes and water rates allows water providers a means of counterbalancing core fairness characteristics attributable to each funding source.

Most property in Salt Lake County is not taxed on its assessed value.

Figure 1: Estimated Share of Property Ownership and Assessed Value in Salt Lake County



- Religious institutions, nonprofits, schools and governments are exempt from paying property taxes on property they use for exempt purposes.
- Under Utah's Farmland Assessment Act, qualifying agricultural properties can be assessed based on their production value rather than market value, likely reducing their property tax liability.
- Commercial and residential renters do not directly pay property taxes. However, owners pass at least a portion of the burden of property taxes to their renters through rents.

To the degree that entities are exempt or taxed at a reduced value on their property, they benefit, but it may be at a higher cost for those that are not exempt. See Figure 1 for an example of exemptions in Salt Lake County.

The water user group consists of those who consume water from water providers. This includes the large majority of households, commercial properties, schools, government buildings, churches and others. Those not included in this group are those who provide their own water based on their water rights, those who rely on canal districts for their distribution of agricultural water, and property owners (typically of undeveloped land) that do not use any water.

HOW RELIANCE ON WATER RATES CAN INCREASE FAIRNESS

The argument for the fairness of water rates is straightforward: Those who primarily benefit from water development and maintenance – those who actually use the water – are the ones supporting the provision of water. To put it simply, the more water you use, the more you pay. The less water you use, the less you pay. Those who use no water pay nothing at all.

A reliance on property taxes means that exempt property owners or those who pay taxes on a reduced valuation are likely paying less than their share of the cost of water. Governments, nonprofits, churches and schools do not pay property taxes; consequently, if their water provider relies heavily on property taxes, they may pay only a fraction of the cost of the water they use. This can be of particular concern where such users maintain large green spaces as part of their property. Churches and religious institutions own hundreds of properties across the state, and a portion of these properties have large turf areas to support outdoor sports or recreational events. Schools have large grassy areas to support school activities. Municipal parks and golf courses use substantial amounts of water to support their green space. Universities also often support large grassy areas on their campuses.

Conversely, businesses, second-home owners and others that pay property taxes on the full assessed value of their property are likely paying more than their share of the cost of water. Ultimately, a heavy reliance on property taxes can mean that non-exempt property owners are lowering the cost of exempt property owners' water use.

As an example, the University of Utah is generally considered one of the highest water users in Salt Lake City, often listed among the top 10 users.¹ It also has \$1.27 billion of property in northeastern part of Salt Lake City.² Of this property, \$179 million is taxable, leaving \$1.09 billion exempt. Because most of its property is exempt, it pays only \$54,000 in property taxes to the Metropolitan Water District of Salt Lake and Sandy instead of the \$384,000 it would otherwise pay. Similarly, the University of Utah only pays the Central Utah Water Conservancy District \$72,000 in property taxes rather than \$508,000. That means a total of \$766,000 in water taxes are not paid because of its property tax exemption is covered by the other taxpayers.³ This example is not used to single out the university; it is just one example among many across the state.

But it should be noted that, because large exempt property owners are often major water users, they do contribute significant sums to the upkeep of water systems through water rates. In some cases, this may allow them to "catch up" to some extent on the rate side of the equation. Nonetheless, the general principle is, the more water districts rely on property taxes, the less exempt users will pay, and the more non-exempt users will pay. By relying solely on water rates and impact fees, institutional users would pay a fairer portion in relation to the amount of water used.

Still, it should be noted that, to the extent the exempt entities are public institutions rather than, say, private nonprofits, the public could end up paying indirectly for their higher water costs. For instance, were a public school required to pay for water through rates alone, their operating costs would rise – costs that would ultimately be shouldered by taxpayers.

A heavy reliance on property taxes can mean that non-exempt property owners are lowering the cost of exempt property owners' water use.



Government and nonprofit institutions pay no property tax, but use 12% of the water in the public community system.

A greater reliance on water rates would tend to be beneficial to owners of non-primary residences and commercial property owners. Commercial property owners pay 31% of property taxes, but use only 17% of water from the public community system, on average.

Similarly, non-primary residences pay 10% of the property taxes but only use 6% of water from the public community system. Because primary residences receive a property tax exemption, households generally pay less than the share of water they use. Owners of primary residences pay 56% of property taxes, but use 65% of water in the public community system. Greater reliance on water rates would reduce these imbalances.

Greater reliance on water rates would also be beneficial for undeveloped land holders. Under the status quo, they use no water, but they pay for it through property taxes. Like commercial properties, they pay taxes on the full-market value of their property. The greater the reliance on water rates to cover a water provider's costs, the lower the burden on these property owners.

The statewide average would vary based on local circumstances. Water providers rely on property taxes (directly or indirectly) to different degrees. However, specific studies carried out by or commissioned by water providers that collect property taxes largely confirm the statewide average. Both the Washington County Water Conservancy

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Some institutional entities might see the amount they pay for water more than double. For some of these entities, those costs could be hard to absorb, and they might seek to pass the new costs on to others.

District and the Metropolitan Water District of Salt Lake and Sandy commissioned analyses of the impact of eliminating property taxes on end water users.⁴ Jordan Valley Water Conservancy District, which covers much of the Salt Lake Valley outside of Salt Lake and Sandy, performed its own analysis on the impact to end users.⁵ Estimates varied based on their methodology and the geography analyzed. Some water providers rely more on property taxes than others. For example, Salt Lake City provides a majority of water itself, and purchases water from the Metropolitan Water District of Salt Lake and Sandy only to cover summer peak use. By contrast, some entities served by Jordan Valley Water Conservancy District receive all of their water from the district. Water providers that rely less on property taxes would expect to see smaller changes in net price.

Based on these three studies, institutional users were projected to see a 17% to 138% net increase in their water costs. Households could see anywhere from 2% to 102% net increase on their net cost of water if property taxes were eliminated. Commercial entries in Salt Lake would pay 5% to 59% less on net, with some exceptions for entities that use relatively more water but have a relatively lower property value, such as restaurants. Commercial entities in Washington County saw a broad range, from a 71% net decrease to an 81% net increase; overall, more types of commercial entities were estimated to have higher net water costs.

Undeveloped landowners and landowners that fall within the jurisdictions of a water provider collecting property taxes, but that are not a user of the public community system, were not specifically addressed in the Salt Lake County studies. However, these property owners, as highlighted by the Washington County study, would expect to see their costs to the public community system removed.

Based on who uses the most water alone, a move to greater reliance on water rates generally provides fairer distribution of the cost.

While it might be fairer from a certain perspective, any major transition away from a property taxes toward water rates would have significant impacts as outlined above. Some institutional entities might see the amount they pay for water more than double. For some of these entities, those costs could be hard to absorb, and they might seek to pass the new costs on to others. For instance, if post-secondary institutions had to pay more for water, they could seek to pass the costs on to students in the form of higher tuition or fees.

With that said, many providers across the U.S. – and in Utah – rely solely on water rates to pay for their infrastructure, operations and maintenance costs. In these cases, exempt property owners are already paying full freight for their water use. This creates winners and losers among different water providers. Among some providers, exempt property owners enjoy a discount on their water. In others, they do not.

There might be ways to increase fairness without changing the revenue mix. Water providers could charge differential rates to different classes of users. Commercial properties could be charged with a set of lower rates because of their higher contribution through the property tax. Households could have a slightly higher set of rates as they are partially exempt from the property tax. And institutional users could have an in-



FAIRNESS AND IMPACT FEES

While this report focuses primarily on the fairness of property taxes, there are also concerns about fairness regarding impact fees. Impact fees can be a substantial source of income for water providers, particularly in quickly growing areas. Impact fees are levied on new development to account for the cost of connecting to the water system and essentially "buy in" to the system that existing users have paid to build. This seems fair in that the users of the new development are paying the costs of their connection and purchasing equity in the water system.

However, this assumes the those purchasing in the new development are new to the community. If current local residents are purchasing in the new development while newcomers primarily purchase older houses, then the existing residents who already paid for the water system are buying equity in a system in which they contributed in previous years, while newcomers gain the benefit of the equity the previous owners paid into the water system.

How these fees are used can also provoke other fairness concerns. If impact fee revenues are used for future users (not directly for the users moving in) it could work against intergenerational fairness considerations.

creased rate that is more reflective of the full cost of water as they do not pay property taxes. Salt Lake City currently charges differential rates to water users outside city boundaries based on a similar justification.⁶ A Utah law passed in 2019 that becomes effective in 2021 defines "a situation in which ... retail customers in one classification ... contributed ... to build or maintain a system differently than retail customers in another classification," as a "reasonable basis for charging different rates."⁷ North Logan is another jurisdiction that charges differential rates to commercial and institutional users, although they do not appear to be related to their property tax contributions.⁸

At the same time, Utah and all other states have determined that governments, churches, nonprofits and similar entities are a special class that merit an exemption to the property tax on property used for enumerated purposes.⁹ So while these institutions also rely on local transportation infrastructure, for instance, they do not contribute to its upkeep, meaning that other property owners are fully subsidizing them. The services these entities provide are judged to be beneficial enough to be partly or completely exempt them from taxation. It might seem presumptuous to some to charge differential rates when Utah's constitution has designated that they merit a special tax-exempt status.

HOW RELIANCE ON PROPERTY TAXES CAN INCREASE FAIRNESS

Undeveloped landowners do not use water, and therefore they do not pay water rates. However, they may pay property taxes to support local water systems. One can argue that this is fair because, while they do not directly benefit by using water, there are other ways they benefit from their local water systems.

To begin with, when water infrastructure is in place to support development, the value of their land increases. During the process of development, landowners are generally responsible for much of the cost of bringing infrastructure onto their property, but they benefit from the fact that there is a larger water delivery system to which they can connect. If water providers relied solely on rates, then owners of undeveloped land would not contribute to a public asset from which their property may ultimately benefit through increased property values and future access to the water system.

While more indirect, a similar argument could be made for water users that provide their own water. Though they are not a part of the public community system, they likely derive benefits from having a public community system nearby. If a commercial entity is providing its own water, it still benefits from a public community system supporting the existence of local consumers and employees. Residences in a similar position benefit similarly from a public community system nearby to support economic growth, allowing residents to purchase necessary commodities locally. This situation, however, may be of less concern as water users that supply their own water may do so because they fall outside the service area of a water provider and are not affected by property taxes to support a water provider.

Looking at fairness more broadly, it is important to keep in mind that some water providers can focus on more than just providing water to households, businesses and institutions. Traditional water delivery services capture, treat, purify, convey, pump, store and distribute water to residents. When these are the services provided, it may be more fair to rely exclusively on rates. However, water providers (especially many conservancy districts) also support services such as fire flows, hydroelectric power, watershed management, endangered species protection, groundwater protection, water storage, flood control, water quality protection, long-term planning, land right-of-way acquisition, emergency planning, various types of conservation programs and recreational amenities. It is clear that the general public directly benefits from the activities beyond providing water, and it can be argued that it would not be fair or logical for water users alone to bear the burden of certain public services.

One specific example to illustrate this issue is Central Iron County Water Conservancy District. This area relies primarily on groundwater as its water source. Studies provided by the conservancy district and Utah's State Engineer indicate that the district's underlying aquifer can support an annual withdrawal of 21,000 acre-feet of water.¹⁰ The area actually withdraws 28,000 acre-feet annually. Further, there are water rights claims for this aquifer for 50,000 acre-feet.¹¹ The conservancy district is active in working with Utah's State Engineer to resolve unused water claims and find a way to reduce water use to supportable levels. In 2017, the district finished building an aquifer recharge plant and plans on building a water treatment plant to clean up sewer-effluent water to be used to recharge the aquifer.¹² These efforts benefit all area residents and property owners. For that reason, one might argue that it would be unfair to put all of the costs associated with the area's groundwater and watershed management on the monthly water bills of the subset of county households that receive their water directly or indirectly from the conservancy district.

One potential way to address these concerns is through the broader use of enterprise accounts. Cities may provide water services, but they also might provide library, police, fire, economic development, housing assistance, streetlighting and other services. They often separate business-like services (such as utilities) from their general-government services through the use of enterprise accounts. Generally, the revenue earned from those services and the cost of providing those services is linked solely to those accounts. If special districts have branched into providing general -government services, they can separate the two into different accounts. Then the general population can support general services while water users can exclusively fund water delivery and services. Some conservancy districts that provide hydroelectric power have already done this with hydroelectric revenues and expenses.

It is important to keep in mind that some water providers can focus on more than just providing water. It is clear that the general public directly benefits from the activities beyond providing water, and it can be argued that it would not be fair or logical for water users alone to bear the burden of certain public services. Bonds can be used to create inter-generational fairness regardless of whether or not water providers have access to property tax revenues.

However, enterprise accounts alone might not be enough. Some expenses could have both general government and business-like purposes. One example might be maintaining a reservoir, which serves both as a water source and also has more general government uses such as flood control, water storage and recreational amenities. The difficulty in classifying some expenses might limit the impact of enterprise accounts in differentiating between business-like services and general-government services.

INTERGENERATIONAL FAIRNESS

Utah's population is expected to increase by nearly two million residents by 2065.¹³ Areas experiencing high levels of growth often need to plan ahead to ensure they have enough water to support expected growth. Many of the districts serving these areas develop plans to bring in water from other sources or additional treatment, storage or pumping facilities to meet their future needs. These water development projects can be expensive and take decades to build. As a result, water projects often need to be under construction before those who will use the water arrive.

Most of the state's population growth is a result of Utahns having children and Utahns living longer. Not only is the entire community responsible for population growth, but it also benefits from the economic growth that water permits. Some argue that it would not be fair to place the whole burden of growth on those that pay water rates when the entire community is responsible for the population growth and benefits from economic growth.¹⁴ More to the point, there is the question of intergenerational equity: Are costs appropriately distributed across time to ensure that beneficiaries both today and tomorrow share appropriately in the cost?

The most common way of addressing the equity between current and future users is with bonds. Bond proceeds can be used at the present time to build projects that will benefit the future users. The bond repayment structure ensures that at least a portion of future users will directly share in its costs as the bonds are paid off over time through taxes or water rates. Bonds can be used to create inter-generational fairness regardless of whether or not water providers have access to property tax revenues. The impact of removing property tax collections for general use on the finances of water providers and their ability to obtain affordable financing is further discussed in Part 4 of this series.

FAIRNESS AND ACCESS TO WATER

Most Utahns interact with water in the public community system. However, once in the public community system, water largely acts as a private good for most Utahns. As such, it is excludable (meaning the water provider can limit access if a household does not pay) and rivalrous (meaning each gallon a household puts on its lawn is one its neighbors cannot use on theirs). In general, it is widely accepted that free markets provide the best distribution for private goods. Market distribution can largely be characterized as follows: those willing to pay the most for a good get the most of that good. For those who subscribe to market optimization, a strong reliance of water rates best meets those goals.



However, water is also considered a basic community resource. Utah's state constitution and statues classify the state as the owner of the water within the state. It recognizes claims via water rights only if it can be shown that its use has a useful or beneficial purpose.¹⁵ There are also protections to prevent the monopolization of or speculation on water, or to prevent other uses that would work against the public welfare.¹⁶

If water is a basic community resource, necessary to survival, civilization and economic growth, it can be argued that all taxpayers, not just users, have a responsibility to ensure its provision – and at a rate that is affordable to all. From this point of view, property tax revenues appear desirable, because they lower water rates and thereby make quality water more affordable to those residents with the least resources to pay water rates. In addition, because property value offers an index of the owner's wealth, it can be argued that the property tax (particularly with a 45% discount for primary residences, whether owned or rented) has some progressive aspects that help further lower the burden on those less able to pay.

However, even without property taxes for general use, there are ways to ensure that water is broadly affordable. There is a certain amount of water necessary to maintain a healthy, hygienic life. Nearly everyone agrees that access to this minimum level of water should be affordable. Often, this necessary amount of water is sold below the actual cost of distribution. The amount lost by the water provider is made up by charging higher rates to water users who consume at higher levels. This is considered fair, not only because it allows a necessary amount of water to be available to all, but also because the additional demand created by those who use water at higher levels is more expensive to satisfy. While nearly everyone agrees in principle, there are varying perspectives as to how much water should be considered basic, and how much lower it should be relative to higher use rates as displayed in Figure 3.

If water providers wanted to take further actions to ensure a basic amount of water was affordable for all users, they could use water budgets. Water budgets are individualized tiers based on factors like the number of occupants and lot size and would allow water to remain affordable at basic levels.¹⁷ Water budgets could possibly even include income information, providing a discount for low-income households. Based on individualized information, water budgets can then be used to create increasing tiered rates oriented around basic, normal, above average and wasteful amounts of water used. Tailored tiers and rates could be used to ensure water is distributed according to community preferences and make basic amounts of water very affordable.

FAIRNESS AND TAXATION PRINCIPLES

There are several principles that are widely held as essential to good tax policy. These include basic principles such as simplicity, reliability, fairness, accountability and transparency. In addition, when it comes to water revenues, taxation principles such as the "ability-to-pay" and "benefits principle" are commonly discussed.

One advantage of the property tax is that it provides some indication of a payer's ability to pay. Those who have the most property at the highest values can ostensibly afford to contribute the most to society.

Water rates, by contrast, reflect the "benefits principle," which is also known as a user fee. Those who are benefiting from the availability of water (those who are using it) are those who are paying to make sure it is available. One good example is the way Utah funds its transportation development. The primary source of funds is from the motor fuel tax. Those who use the state's transportation infrastructure tend to purchase more fuel than those who do not, and thus tend to contribute at a higher level to its development and maintenance.¹⁸ Additional funds are provided through the portion of the sales tax as generated by the purchase of vehicles, as well as vehicle registration fees.¹⁹ Similarly, relying on water rates provides a strong link between those who benefit from the service to those who pay for the service.

Fairness in terms of taxation principles can be argued both ways. Using a definition of fairness that focuses on use, water rates are fairer. If the definition of fairness focuses instead on an equal need and unequal resources to obtain that need, then property taxes tend to be fairer. Under the status quo, water providers that rely on both revenue sources indirectly balance user fees with the ability to pay through property taxes. Districts have some ability to adjust that ratio to reflect local needs and desires. Without property tax revenues, the state moves toward the benefits principle: a simple user-fee basis.

Fairness in terms of taxation principles can be argued both ways. Using a definition of fairness that focuses on use, water rates are fairer. If the definition of fairness focuses instead on an equal need and unequal resources to obtain that need, then property taxes tend to be fairer. Under the status quo, water providers that rely on both revenue sources indirectly balance user fees with the ability to pay through property taxes.

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CONCLUSION

At first glance, water rates appear to be a fairer way to pay for water than property taxes. With water rates, those who directly benefit from water systems – the users – pay according to the amount of their use. Yet there are fairness arguments to be made on both sides.

Allowing property taxes as a use of revenue would be fairer in the following terms:

- Water is a necessary for basic human survival. Using property taxes ensures that the broader community is paying its share to fulfill a basic need of civilization. Water is an essential component of civilization and community growth, from which all property owners derive benefit whether they use water or not.
- Property taxes provide a means by which those in the community with more resources can aid those in the community with fewer resources to meet one of life's most basic needs.
- When water providers offer services that benefit not just water users, but the entire community, (recreation, flood management, fire flows, etc.) it is fair that the entire community helps to pay for those services.

However, relying solely on water rates is fairer in the following terms:

- Those who use the most water must pay the most to support water systems.
- All households and entities will pay closer to the full cost of the water they use, rather than having high-property-tax-liability entities subsidize low-property-tax-liability and tax-exempt entities.

Regardless of the revenue mix, actions can be taken to make things fairer. If relying on property taxes, differential rates can be charged to those who pay different amounts in property taxes or based on use. If relying solely on rates, tiered rates (standard among most water providers) or water budgeting can allow high-water users to partially cover the costs among low-water users, ensuring that a basic level of water is affordable to all income levels.

In short, when it comes to property taxes versus water rates, fairness is often a matter of perspective – and the devil is in the details.

ENDNOTES

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GETTING CLEAR ON WATER

Practical Considerations in the Tax Versus Fee Debate

THE PAYING FOR WATER SERIES Part IV - September 2019

INTRODUCTION

Utah ranks as one of the nation's driest states — and one of the fastest-growing. It is therefore essential that Utah's water is well managed to ensure the sufficiency of affordable, quality water into the future. Utah Foundation's series of water reports discusses Utah's reliance on both water rates and property taxes to fund water infrastructure, operations and maintenance.

Part 1 of this series provided an overview of how water is distributed and managed in Utah. Parts 2 and 3 focused on conservation and fairness issues, respectively.

Part 4 in this series addresses the remaining practical considerations. These include fiscal impacts, focusing on cost efficiency, price for consumers and revenue stability for water providers. The practical considerations also include local needs, transparency and representation.

REVENUE STABILITY FOR WATER PROVIDERS

The Stability of Property Taxes

As in private businesses, the revenue of water providers tends to fall during recessions. As incomes shrink during economic downturns, consumers become more conscious of where they are spending their money and how they can find ways to cut back. Yet evenues from property taxes are held relatively steady because of Utah tax policy – specifically, Truth in Taxation. Even if property values fall during a strong recession, property tax revenues do not because property tax rates are annually calibrated to rise or fall to produce the same amount of revenue.

However, recessions can significantly decrease water rate revenues. Among Utah's four largest conservancy districts (those with budgets above \$30 million), three of the four saw 4% to 6% decreases in water rate revenues from 2007 to 2011. By way of comparison, these providers saw annual average increases in water rate revenues from 5% to 8% from 2013 to 2017 – a time of economic growth.

In addition to recessions, water rate revenues also experience weather-induced volatility. Years with above-average precipitation reduce water use and consequently reduce

KEY FINDINGS OF THIS REPORT

- While water rate revenues are not as stable as property taxes, they are among the most stable relative to other possible revenue streams commonly used to support revenue bonds.
- Rainy day funds and decoupling of water rates from sales volume can help address budget volatility.
- While it stands to reason that property tax revenues might help push credit ratings higher and thereby make the overall cost of water cheaper, it is only likely to be the case to a marginal degree.
- Market distortions created by using property taxes for wholesale water may increase the overall cost of water.
- A mix of revenue sources allows for more local flexibility by allowing water providers to use the property tax as needed and to counterbalance drawbacks in water rates.
- A full reliance on water rates tends to provide stronger cost transparency because consumers can turn to a single source of information for their use and cost: monthly water bills.



HISTORIC FEDERAL FUNDS

Many of Utah's large water projects such as the Central Utah Project and the Weber Basin Project were funded in part with federal dollars. However, since the 1980s, the federal government has contributed less to the development of water and wastewater capital projects, leaving states and local governments to find different ways to replace federal dollars.



revenues generated from water rates. (The first half of 2019 was the second wettest six months on record in Utah.¹)

In short, property tax revenues can be substantially more stable than water revenues. A stable revenue source heightens the ability of water providers to endure recessions without having to lay off employees or find other ways to cut costs or manage volatility.

The Stability of Water Rates

There are many examples, both inside and outside the state, of successful water providers that do not rely on property taxes, demonstrating that property taxes are not necessary to maintain a functioning utility. In addition, culinary water is thought to produce one of the steadiest revenue streams among utility providers because it is both necessary for life and has no reasonable substitute.²

A volatile revenue source is not a problem unique to water providers. Countless government agencies around the country rely on sales tax revenues, which are more volatile. A common remedy is the use of a "rainy-day fund" to ensure reserves can cover budgetary shortfalls.

In an analysis of 245 water providers across the state, Utah Foundation found that they contributed an average of 17% of their operating revenues to an ongoing fund.³ These contributions could include one-time revenue sources, such as impact and other fees, as well as developer contributions (the monetary benefit of having developers install infrastructure required for distribution). Regardless, it demonstrates that Utah water providers commonly contribute to a perpetuating fund that can be used to cover temporary budget shortfalls.

Another approach is known as "decoupling," whereby rates are adjusted up or down to meet an agency's revenue target.⁴ During the 2011-2017 California drought, many water providers' budgets fell unsustainably due to severe conservation efforts. As a result, they had to raise rates to ensure they had enough revenue to deliver their services. Rather than allowing the rate to determine the revenue, decoupling allows the needed revenue to set the rate – much like Utah's Truth-in-Taxation law regarding property taxes.

Because most water providers do not collect profits, this is generally the approach used when water providers initially reevaluate their rates. However, once the rates are set, the total revenue they produce in a given year still varies as weather, climate and economic conditions influence how much water is purchased.

A surer way to maintain stable revenues would be through water rate flexible adjustments. This could be achieved by more frequent smaller rate adjustments, annually or even quarterly.

Alternatively, a water provider could set a range of tiered rates that would flexibly rise and fall each month, depending on the aggregate water provided. While water users might take time to acclimate to flexible rates, decoupling could be a solution for water providers that prioritize revenue stability.

Summary

Districts claim that property taxes are needed as a stable source of revenue. Property tax revenues are more stable than water revenues and much more stable than one-time revenues such as impact fees and developer contributions. Even so, water revenues are also relatively stable compared to other commonly used government revenue streams, and water providers in Utah and around the country compensate for increased volatility through the prudent use of reserve funds. Decoupling of rates from sales volumes is another option that could further stabilize water rate revenues.

COSTS FOR CONSUMERS

Utah has lower than average water costs, both compared to the nation at large and other Western states. This is explained in part by the fact that most of Utah's population is located near water sources such as mountain snow and reservoirs. This reduces the cost of water in two ways. Gravity-fed water systems reduce the cost of pumping and pressure, and the close proximity results in fewer opportunities for pollution and contamination, reducing the cost of cleaning the water.⁵

Nonetheless, price is an important consideration for Utahns to examine, and changes in how water revenues are generated would have an effect.

How Property Taxes May Reduce Water Costs

Proponents of using property taxes argue that these revenues help keep the price of water low. With property tax revenues in the funding mix, some Utah water providers argue they can achieve higher bond ratings. Higher ratings mean lower interest rates for debt on infrastructure and, consequently, lower consumer prices.

Property tax revenues are more stable than water revenues Even so, water revenues are also relatively stable compared to other commonly used government revenue streams.



PROPERTY TAX DEDUCTIONS

The use of property taxes by water providers could slightly lower Utahns' income tax liability. Property taxes can be deducted from personal income taxes, while water rates cannot be deducted. For example, a \$250,000 home in West Jordan pays \$124 in property taxes to water agencies. If that family were to itemize their taxes, it would reduce their taxable income by \$124, saving a median-income family \$15. These marginal tax savings would be available only to those that itemize their deductions rather than use the standard deduction.

While water rate revenues are more variable than property tax revenues, they are considered one of the more stable sources of revenue relative to other sources commonly used in revenue bonds.⁶ (By contrast, sales taxes are one of the riskiest revenue streams; local entities have limited ability to increase rates and revenues generated through sales taxes, which makes revenues much more volatile.⁷) As credit rating agencies analyze bond covenants, they take into account revenue stream variability and dozens of other factors such as the ability of the community to cover those costs, the current level of indebtedness, the historical fiscal prudence of the district, the ratio of revenue generated to bond payments, the size of the loan, the scope of the project, limits on expenditures, limits on taxation, and the condition of the local and national economies. While stable revenue is helpful, it is just a single factor in a complex decision.⁸

In 2015, Zions Bank carried out a study commissioned by the Metropolitan Water District of Salt Lake and Sandy to analyze the impact of losing the ability to collect property tax revenues. In this study, Zions Bank reached out to Fitch Ratings and Standard & Poor's, two of the three largest rating credit rating agencies in the United States. These two agencies considered property tax and water rate revenue streams to be equivalent, although in a review process, property tax revenues may positively influence the review if a water provider is right on the line between one rating and another.⁹ In a 2019 committee hearing of the Utah Executive Water Finance Board, a representative of Fitch Ratings reaffirmed that property tax revenues are considered as another source of stable revenue and generally considered neutrally or positively when providing a rating.¹⁰

Even without property tax revenues, there are mechanisms that could help lower the costs of borrowing funds in the municipal bond market. Utah could design a guarantee similar to the guarantee it offers for school districts that essentially allows districts to borrow on the state's top credit rating.¹¹ Another alternative might be to create a statewide entity that can package municipal bonds, similar to an arrangement found in Idaho.¹² This would diversify the risk, allowing for better credit ratings. Taxing power could be conditionally granted to this entity for the purpose of ensuring payments are met in order to further decrease the risk and improve the credit rating.

In addition, restricting water providers from using property taxes for maintenance and operation costs would not restrict the ability of water providers to issue general obligation bonds dedicated to funding capital and infrastructure improvements. These general obligation bonds would require voter approval. Using bonds in this more traditional fashion would allow water providers to continue to receive any financial benefit they may receive from general obligation bonds, while obtaining some of the other benefits associated by funding operations and management solely through water rates and fees. With higher levels of conservation, more costly forms of procuring water can be delayed.

How Property Taxes May Increase Cost: Distortion in the Wholesale Market

When a wholesaler collects property tax revenues and correspondingly lowers its wholesale water rate, it introduces distortion into the market. For example, when a municipal water provider needs to secure additional water for its expanding community, it has several options. The cheapest option would to be to encourage conservation, virtually expanding its water supply. It could also purchase water from another source; it could procure water from a wholesaler or obtain additional water rights from agricultural water right holders.

In many cases, growth in a municipality can displace agricultural land use and reduce the amount of agricultural water needed. That could mean that agricultural water would be readily available for the municipal water provider to convert into culinary water and meet the needs of its growing population.

While regional wholesalers can collect property taxes and lower wholesale prices, the owners of the agricultural water rights do not have access to property tax revenues and cannot lower their prices correspondingly. To the water retailer, this makes the wholesaler's water appear to be a better deal. But this is only because part of the cost is shifted to property owners in the wholesaler's jurisdiction.

As a result, the total cost of water (the cost at which the city is purchasing the water in addition to the collection of property tax revenues) is higher than if there were no property taxes collected and the city purchased agricultural water rights to convert to culinary use. These higher costs are ultimately passed on to consumers and property owners.

There may even be cases where a regional wholesaler's lower-priced water is cheaper than encouraging conservation among residents. This similarly distorts the market, increasing the broader cost of providing water.

There are additional cost reductions to the extent that a higher reliance on water rates encourages conservation. With higher levels of conservation, more costly forms of procuring water can be delayed. By deferring more expensive forms of water development until the population of the service area is larger, costs can be spread across the larger base, reducing average costs to consumers.

Summary

Despite the greater stability of property tax revenues, it is not clear that relying on them lowers water prices for customers by consistently helping water providers receive better bond ratings. Customers may benefit from property tax deductions on their income taxes, but only marginally.

To the degree that collecting property tax revenues enables wholesale water suppliers to sell water cheaply, market distortions may occur as water from these providers can cost less than conservation or agricultural conversion. When this distortion occurs, property taxpayers and water users face higher overall costs.

To the degree that water rates inspire conservation, water providers can defer the potentially expensive development of new water sources. Consumers would enjoy cheaper water in the short term because there will not be demand for more expensive forms of water development. Consumers would enjoy cheaper water in the long term because the costs of more expensive forms of water development will be borne by a larger population.

Water providers vary widely in their mix of revenues sources.





In this case, the mechanism of these cost savings is not directly the use of water rates or property tax revenue, but rather conservation. Consequently, the cost savings will only occur to the degree that water rates encourage conservation. Similarly, lower costs may be achieved through conservation independent of how revenues are generated. (See Part 2 of this series.)

FLEXIBILITY IN ADDRESSING LOCAL NEEDS

Different water providers wrestle with different challenges. For instance, the needs of water providers along the Wasatch Front differ from the needs of water providers in Iron County. But these differences in needs extend beyond Utah's mix of urban and rural districts. The availability of water in these districts is strongly linked to geography, which varies across the state. Counties along the Wasatch Front can access water from the Wasatch Mountains. In the state's eastern counties, water is accessible from the Colorado River. Western counties are forced to rely more heavily on groundwater.

A Variety of Funding Approaches

Water providers can use an assortment of revenues from property taxes, water rates, and impact fees in seeking to best fund water in their district. Figure 2 displays a sample of water providers and how different areas rely on different methods to fund their water providers. Currently, local areas have the flexibility to decide what mix of funding is appropriate for them.

A Question of Flexibility

When relying solely on water rates, water providers have flexibility in how they structure those rates. They also have a degree of flexibility in how they assess impact fees, classify commercial and residential properties, determine the steepness of their tiered pricing, and charge for fixed costs.

However, some water providers consider property taxes to be a valuable additional tool, even if they use it solely for infrastructure development through voter-approved general obligation bonds. They may also see property taxing authority as a means of counterbalancing drawbacks particular to water rates.

In short, property taxes add another revenue-generator, allowing greater flexibility for local leaders and water providers to balance revenues between property taxes and water rates to best meet their needs.

TRANSPARENCY

It is a common economic principle that when costs are transparent, markets can operate more efficiently. Transparency also promotes accountability to the public.

How Transparent are Property Taxes?

Taxpayers can find property tax rates for each water district on the Utah State Tax Commission's website.¹³ They can also review water taxes among the various other property tax rates and liabilities when county assessors send out annual itemized property tax reports.

When water providers want to increase the revenue collected through property taxes, they must engage in the Truth-in-Taxation process to ensure transparency. The process requires providers to publish ads in local newspapers and hold mandatory public meetings.

How much property taxes contribute to water operations and maintenance in cities is less transparent. The total amount collected by cities is transparent, but the extent to which those funds are used to support water delivery can be clarified only by searching out a city's annual financial report and examining a long document to verify whether funds were transferred into or out of an enterprise fund. Further, it may not be clear where those transfers came from or where they went.

Overlapping jurisdictions add additional difficulty. Many communities in the northwest quadrant of the Salt Lake Valley pay property taxes to three different water providers in addition to their water bills. While the amount collected from these entities is clear, property owners might not understand that they are paying in four different ways.

Transparency is also limited for individuals or businesses that rent because it is unclear how much their rent covers the owners' property taxes. It is even less transparent if renters do not pay their own water bills. While it is likely that a portion of rent is used to cover the property tax levied on landowners, how much property owners are passing on to renters is a matter of debate.

Some water providers consider property taxes to be a valuable additional tool, even if they use it solely for infrastructure development through voter-approved general obligation bonds. They may also see property taxing authority as a means of counterbalancing drawbacks particular to water rates. Legislation that becomes effective in 2021 adds provisions to ensure that retail customers have the opportunity to participate in public meetings when water rate increases are up for consideration.

How Transparent are Water Rates?

For water providers that rely solely on water rates, the price of water is available to customers in a single source with regular updates – the users' monthly water bills. But the level of transparency tends to vary based on the water provider; water bills can vary in transparency depending on how they are formatted and what information is included or excluded.

While water providers must go through the rigorously programmed Truth-in-Taxation process if they want to raise additional revenues through property taxes, the process to raise water rates is less standardized. Municipalities appear to be able to approve rate increases without any requirements for public meetings. Utah's state code simply states that municipalities "may fix the rates to be paid for the use of water furnished by the city."¹⁴ However, all meetings of the municipalities' governing bodies are required to be open and public meetings.¹⁵ Moreover, 2019 legislation that becomes effective in 2021 adds provisions to ensure that retail customers have the opportunity to participate in public meetings when water rate increases are up for consideration.¹⁶ Many water providers will seek to be transparent about their process regardless of requirements. They might hold open meetings about their decision-making process, seek public feedback, and notify customers of changes on monthly water bills. However, such practices will likely vary by water provider. Provisions for local districts depend on the type of district, but local districts seeking to impose or increase fees are generally required to do so through a public meeting process.¹⁷

Summary

Both property taxes and water rates offer transparency, though in different forms. A reliance on water rates would be more transparent in that the cost of water is completely available from a single source with regular, measurable updates based on meter readings. On the other hand, property taxes are subject to more rigorous transparency requirements with regard to decision-making on increases.

REPRESENTATION

Citizens' ability to determine who governs them – especially those who control their taxes – is an important premise of a representative democracy. Representation can also be considered an important consideration in water pricing.

The governance of water providers differs based on the type of organization. Municipal water utilities are governed by the municipalities' elected leaders. Multi-county water conservancy districts are governed by boards of local individuals. These individuals are nominated by county commissioners, selected by the Utah Governor and ratified by the Utah State Senate.¹⁸ Often, the individuals nominated to the board hold elected office in the area.

For other single-county governing boards and local districts, governing boards can be appointed by local officials or elected directly by the local residences, or a mix, depending on the type of district and how the board was organized.

These governing boards approve property tax rates and water rates. Some Utahns are concerned when unelected, appointed officials have the ability to levy taxes, considering it a form of taxation without representation. While still subject to the Truth-in-Tax-

ation process, there is less recourse for users or citizens to replace these officials if citizens disapprove of their actions.

By relying solely on water rates, non-elected officials in local districts lack the ability to tax. However, they maintain the ability to control water rates. In some ways, this provides even less accountability since the process for increasing water rates is less rigorous than raising property taxes. Citizens or users would still have limited recourse to replace water officials if they disapproved of how the water providers were being run.

Summary

While those who disagree with using property tax revenues might argue that the status quo is taxation without representation, relying on water rates does not really fix the underlying concern. However, officials in charge of determining water rates may have even less accountability to citizens or users.

OTHER PRACTICAL CONSIDERATIONS

There are also a number of other practical considerations involved in the property tax versus water rate debate. Water infrastructure projects can be expensive. Often, these infrastructure projects can take decades to develop and substantial funds must be spent before any water is delivered.

Consider the financial pressures on a town deciding to provide a municipal water service. Before it can generate any revenue from water rates, it has to figure out how to pay for the infrastructure to capture, treat, purify, convey, pump, store and distribute water to its citizens. Even if the town takes the simplest route and outsources most of these water services to a wholesaler, it will have to use a substantial amount of money to lay the infrastructure required to distribute water to its residents. In these cases, property taxes are the main revenue stream available.

Rapidly growing areas in Utah face similar pressures. Substantial infrastructure investment is required before anyone moves in. In addition, contribution from undeveloped landowners can improve efficiency as growth occurs. For example, if a water provider is expanding its services past a parcel of undeveloped land, it could theoretically use the property tax revenues from that parcel to upgrade its infrastructure as it initially installs it. This means the water provider could avoid the costly expense of replacing existing infrastructure with higher capacity pipes when the parcel eventually does develop.

In both newly developing systems and rapidly growing systems, municipal bonds can help fund these projects. However, they might need to rely on property tax revenues to be considered creditworthy or cover gaps in funding before water revenue is available.

As mentioned in Part 1 of this series, property tax revenues can be collected by water providers via two mechanisms. State law authorizes collection of property taxes for local districts. Similarly, cities that provide water services can transfer revenues from their general funds, which could be supported by property or sales taxes. Water providers also have a second option of issuing general obligation bonds with voter approval. Proponents of water rates push back against the first method of obtaining property tax revenues, but will sometimes concede that there are times when infrastructure development is needed, and voter-approved general obligation bonds may be the best way to meet those needs.

One example is the Central Utah Project. The project, started 60 years ago, was designed to bring water from the Uintah Mountains to the Wasatch Front. The federal government loaned the state funds for the project on the condition that repayment would be backed by property taxes. Without the use of property taxes to obtain financing from the federal government, it would have been difficult for the state alone to build such a project. In 2017, the Central Utah Water Conservancy District provided more than 25% of the water used by culinary water providers in Salt Lake County.¹⁹ Salt Lake County might look substantially different if it had a quarter less water to spread around to culinary water providers.

While property taxes can be the only revenue source available when first building infrastructure, as areas grow and urbanize water providers become increasingly capable of supporting their services through water rates.

Under the circumstances outlined above, the Central Utah Water Conservancy District and a few other conservancy districts made contracts with the federal government that specified property taxes would be used to repay the Bureau of Reclamation. These districts could still limit the use of property taxes to the amount needed for repayment under these contracts. Alternatively, they could seek contract amendments allowing for a transition to water rates for repayment.²⁰

CONCLUSION

While water rates are less stable than property taxes, they are more stable than other revenue sources, such as sales taxes. The fact that so many water providers both nationally and within Utah do without property taxes illustrates the feasibility of relying on water rates alone. Water providers can protect against revenue instability by building larger reserves or possibly through decoupling to create flexible water rates.

There are reasonable claims that property taxes may allow for cheaper borrowing. However, rating agencies indicate that the difference is marginal. Meanwhile, with reduced reliance on property taxes, increased conservation induced by higher water rates could also lower costs by deferring larger investments until a larger population is present to share in those costlier developments. Furthermore, property tax collections by water wholesalers may create price distortions that ultimately raise the cost of providing water.

Although the range of possibilities for structuring water rates allows water providers significant flexibility, the option of using property taxes adds flexibility. The populations served, geographies, local preferences and local economies vary among water providers, and property taxing authority allows an additional tool for providers to determine the best way to deliver services.

Overall, relying solely on water rates would tend to create a higher level of cost transparency. However, state requirements on property tax rates create a higher level of transparency when it comes to revenue increases.

Those same property tax requirements help create a higher level of accountability to the public. If citizens do not like property tax increases, they can replace those elected officials if desired. However, officials of local taxing districts may be either elected or appointed, depending on the district. Appointed officials with the power to levy property taxes are a concern to some. While a higher reliance on water rates might allay those concerns, appointed officials still set water rates and citizens may have little direct influence to replace these officials if desired.

Ultimately, there are tradeoffs in terms of revenue stability, consumer costs, provider flexibility, and consumer transparency and representation. These tradeoffs must be weighed alongside the conservation and fairness issues discussed in Parts 2 and 3 of this series to determine the future of Utah water revenue policy.

Overall, relying solely on water rates would tend to create a higher level of cost transparency. However, state requirements on property tax rates create a higher level of transparency when it comes to revenue increases.

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