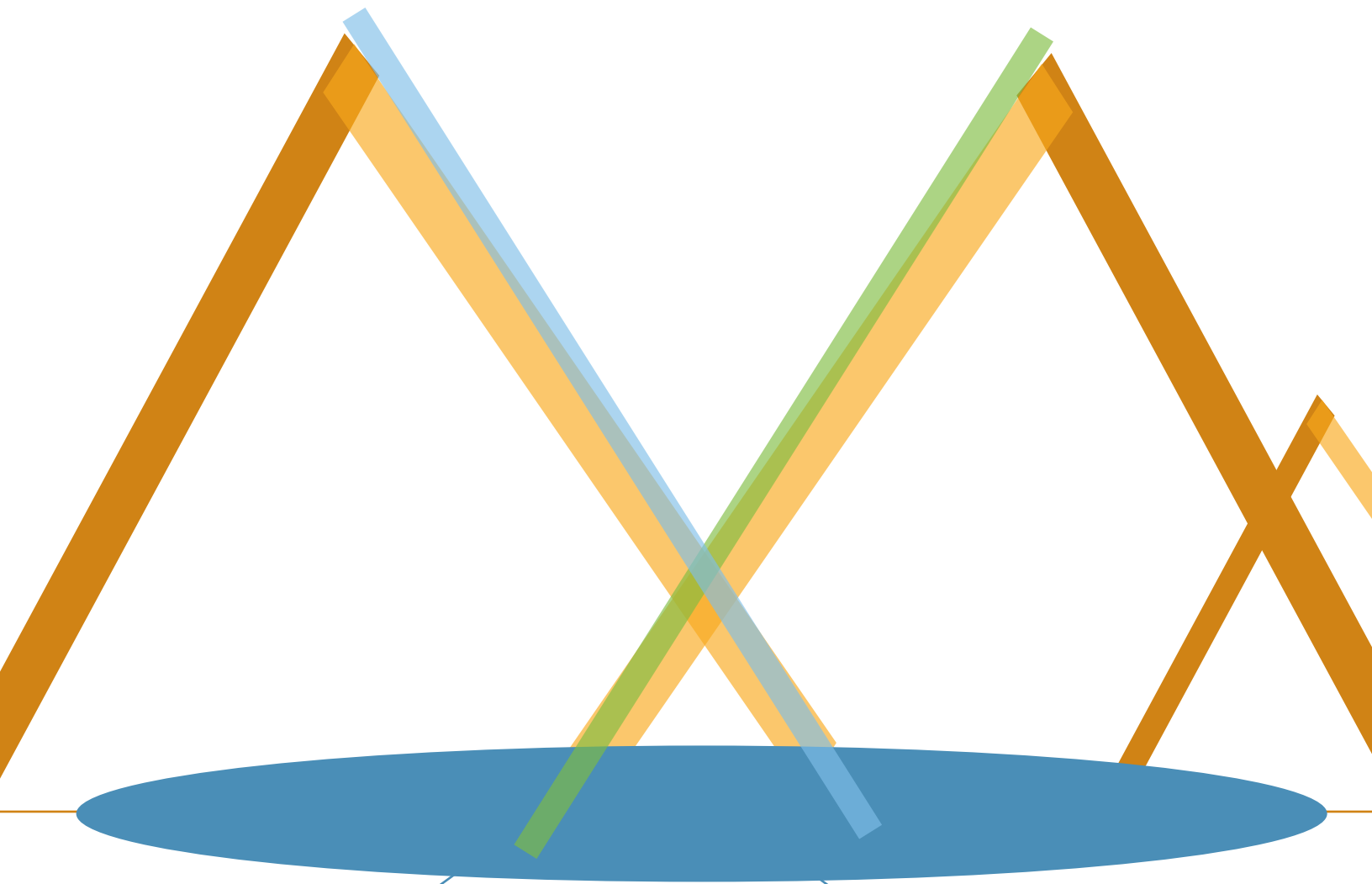




UTAH FOUNDATION
RESEARCH • ANALYZE • INFORM

HIGH AND DRY

Water Supply, Management and Funding in Utah



THE PAYING FOR WATER SERIES
PART I - AUGUST 2019

H I G H A N D D R Y

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Research Report 766



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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 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

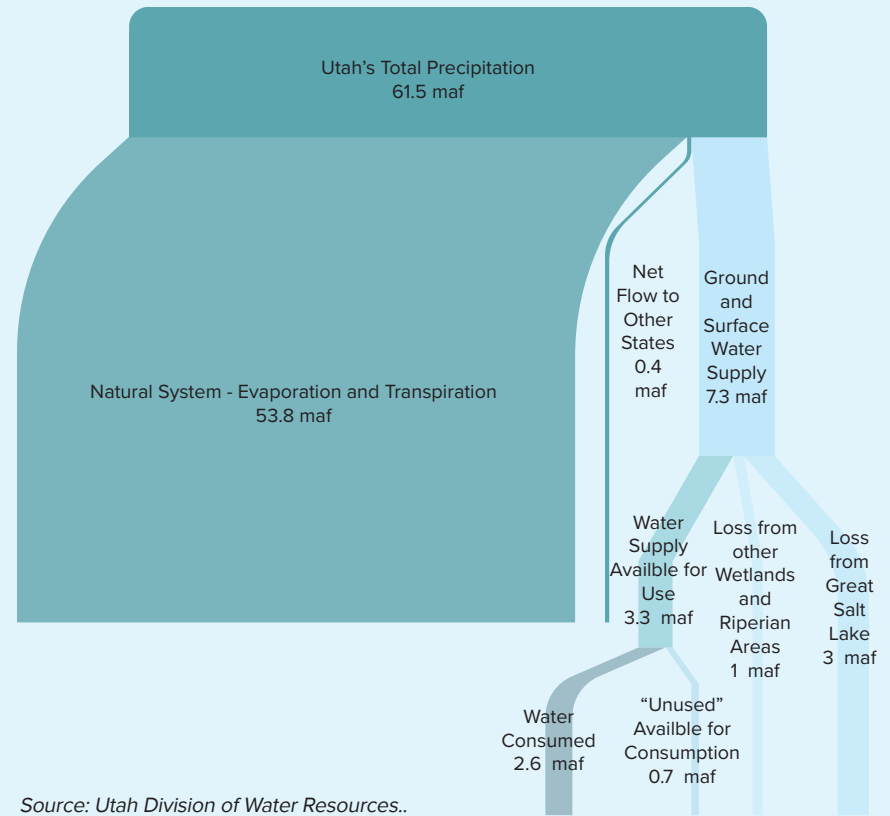
It should be noted that these are long-term averages and can vary substantially from year to year. In addition, changes in the climate can affect the amount of water Utah has available.

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 municipal 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.

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

Figure 1: Water in Utah—Precipitation to Consumption



CONSUMPTION OR DIVERSION?

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

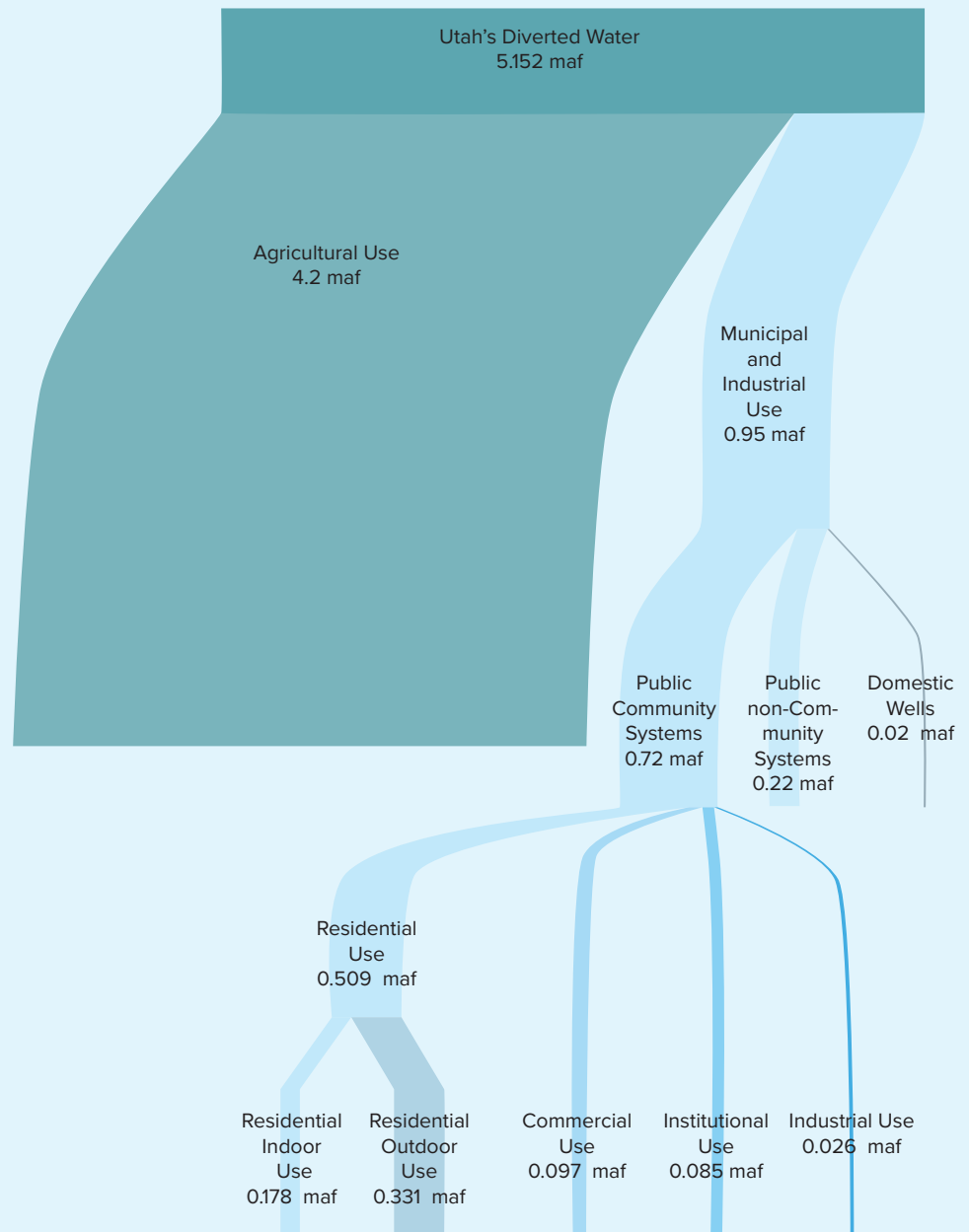
When water is removed from its natural course (often called diverted water or withdrawals), a portion is removed from the system through evaporation or incorporation into a product, plant or person and is no longer available for reuse. This is often referred to as consumptive use, water consumption, 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 14% of water diverted is used in a public community system.

Figure 2: Diverted Water Use in Utah



Source: Utah Division of Water Resources.

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.)

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 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, while those in or those that receive water from the upper basin can collect 40 cents 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.

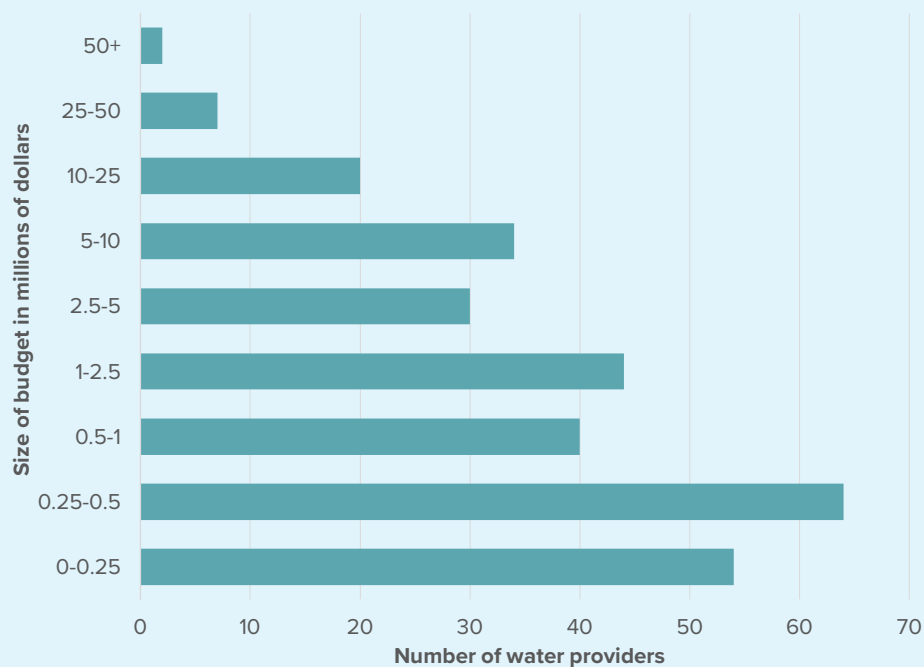


OVERLAPPING JURISDICTIONS

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.

Figure 3: Number of Water Providers by Budget, 2014-2017



Source: Water providers' financial reports, Utah Foundation calculations.

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.)

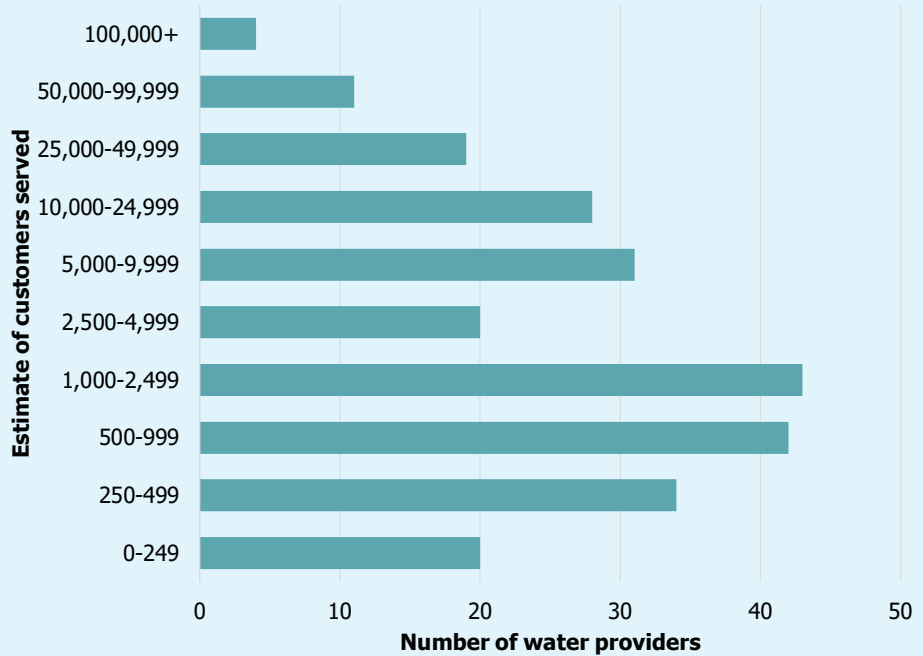
Water Retailers in Utah

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.

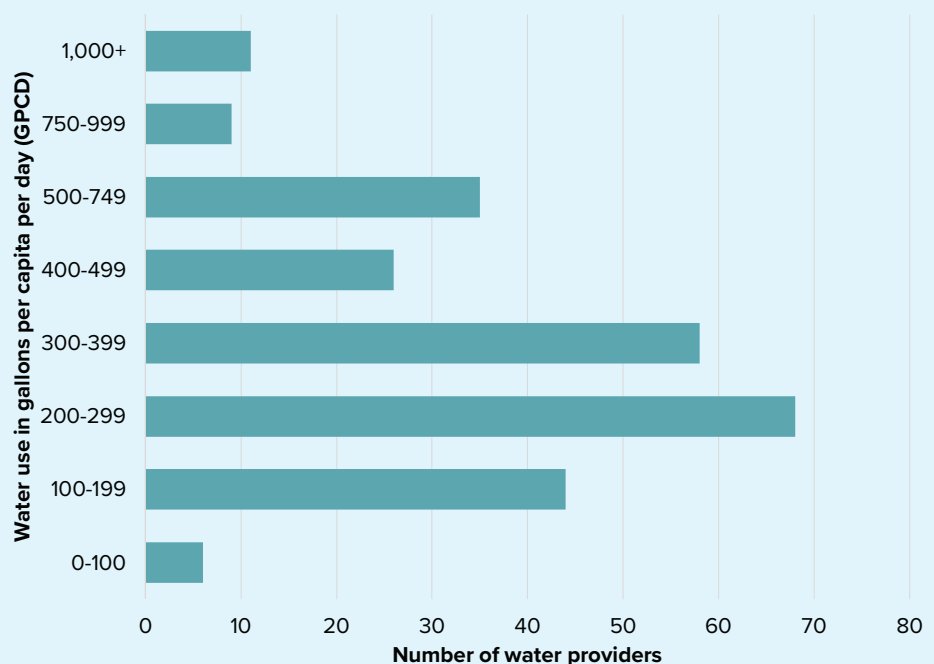
Figure 4: Number of Water Providers by Population Served, 2017



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.

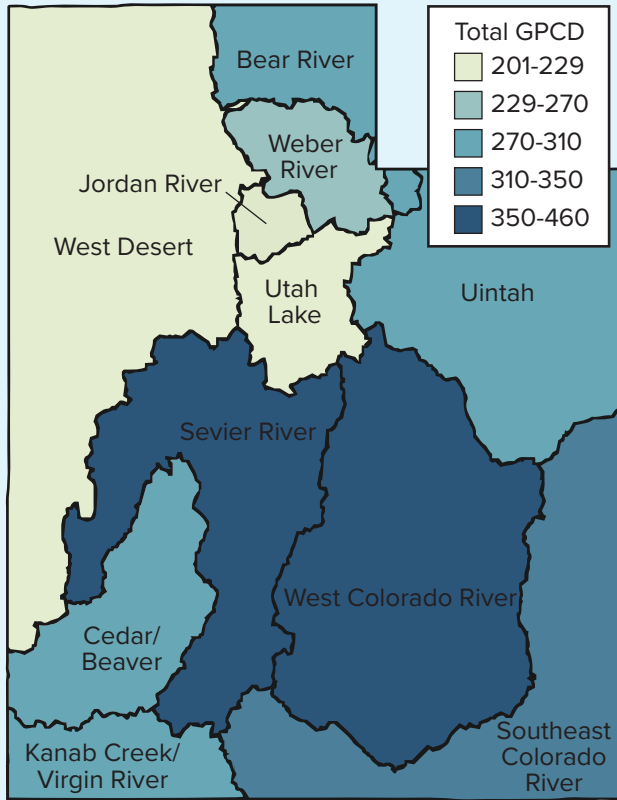
Figure 5: Number of Water Providers by Water Use, 2017



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.

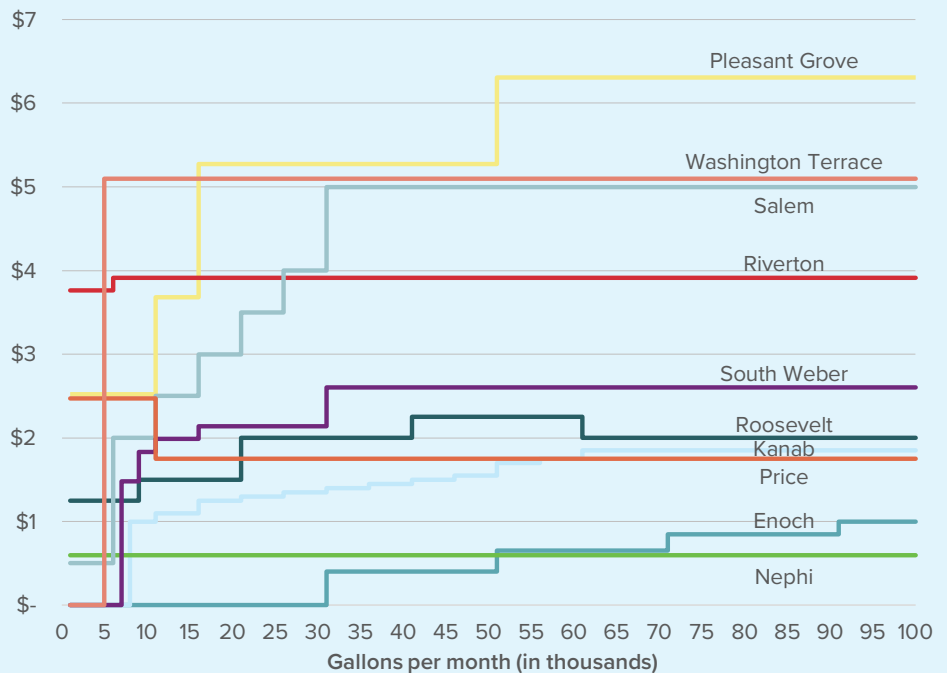
To standardize these rates, Utah Foundation looked at average prices at nine key points where many water providers tended to change their rates. Utah Foundation compared whether a water provider’s rates were generally average, above average or below average.

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,

Selected tiered water rates demonstrate the variability among water providers’ rate structures.

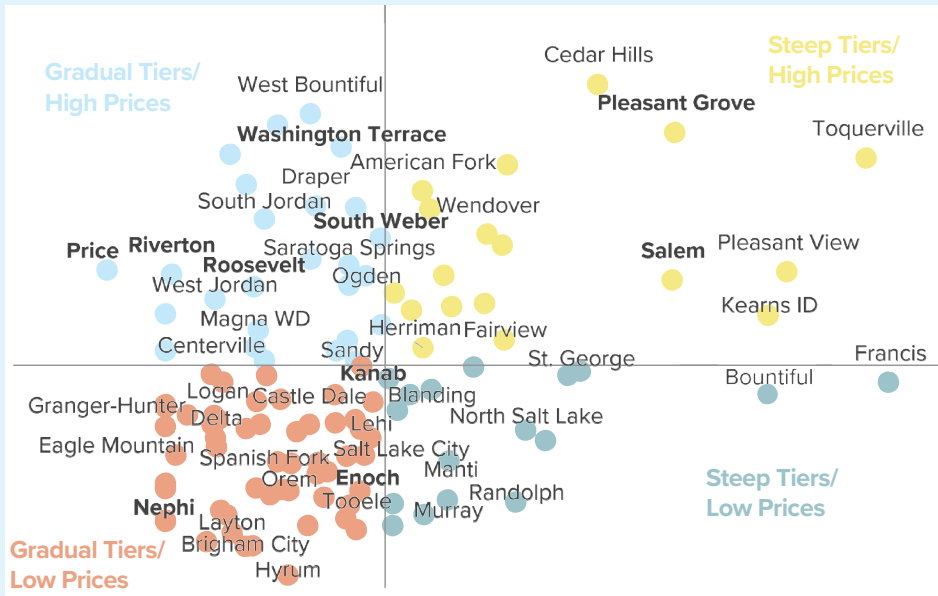
Figure 7: Tiered Water Rates for Select Water Retailers



Source: Governor’s Office of Management and Budget.

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 district	0	1	20
Metropolitan water district	0	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, while one in 10 Utahns are subject to three 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/map-pub/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.

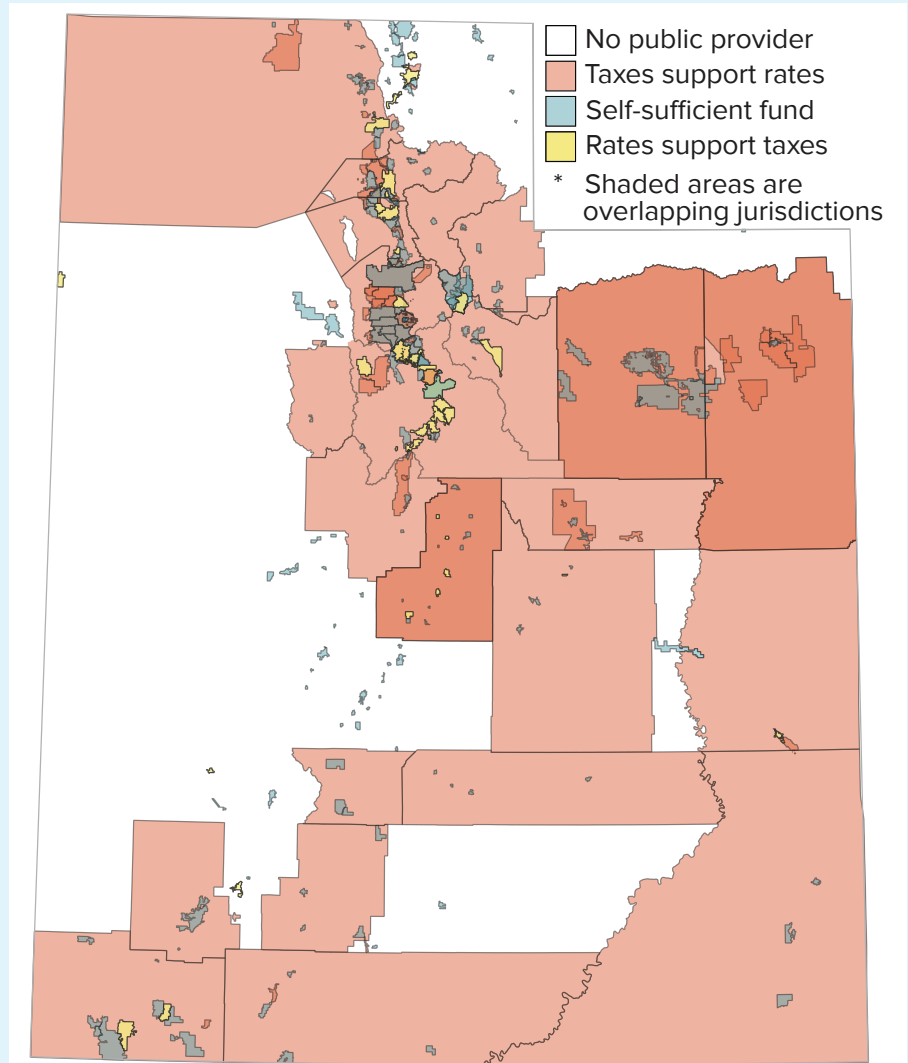
The Utah Rivers Council, a nonprofit dedicated to Utah's rivers and water sources, carried out a survey of 54 suppliers across 11 western states in 2002. The survey found at that time that 23 (43%) water suppliers were able to levy property taxes and only 12 (22%) actually did so. Of those, only four (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 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

Fewer entities use property taxes, but they tend to cover larger geographical regions.

Figure 11: Type of District by Use of Property Taxes



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.

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 addition 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

ENDNOTES

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- 9 There is large agreement that renters bear some level of incidence for property taxes. There is not large agreement about how much they share. Those interested can look into studies such as Heilbrun, James. “Who Bears the Burden of the Property Tax?” *Proceedings of the Academy of Political Science* 35, no. 1 (1983): 57-71, www.jstor.org/stable/3700945; LeRoy, Stephen F., “Urban land rent and the incidence of property taxes,” *Journal of Urban Economics*, 3, no. 2 (1976): 167-179, www.sciencedirect.com/science/article/pii/0094119076900516; England, Richard W. “Tax incidence and rental housing: A survey and critique of research,” 69, no.2 (2016): 435-460, www.ntanet.org/NTJ/69/2/ntj-v69n02p435-460-tax-incidence-and-rental-housing.pdf?v=a.
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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.
- 16 The different types of water providers have different ways of filing financial statements. Cities are relatively uniform with enterprise accounts, but there is substantial variation among local districts. Utah Foundation decided that the best way to standardize annual budgets would be to look at operating expenditures. These reflect costs of operations and most water providers would choose to include the same types of expenses. It does exclude infrastructure investments and bond payments.
- 17 Population data is from the U.S. Census. Five-year data was used to allow analysis at the block level. Tax jurisdiction data was obtained from the Utah State Tax Commission via Utah’s Automated Geographic Reference Center (<https://gis.utah.gov/data/economy/taxingareas/>). Budgetary information on each of the tax entities was collected from their respective financial reports from 2014-2017 published by the Office of the Utah State Auditor. Utah Foundation calculations.
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