CHAPTER 5

UTILITIES & SERVICES

Vision

Western Weber County desires adequate utilities and public services that provide for the current and long-term needs of the community. Weber County, other utility and service providers will provide infrastructure and services to support local roads and streets, paths and trails, and schools and parks.

Existing & Projected Conditions

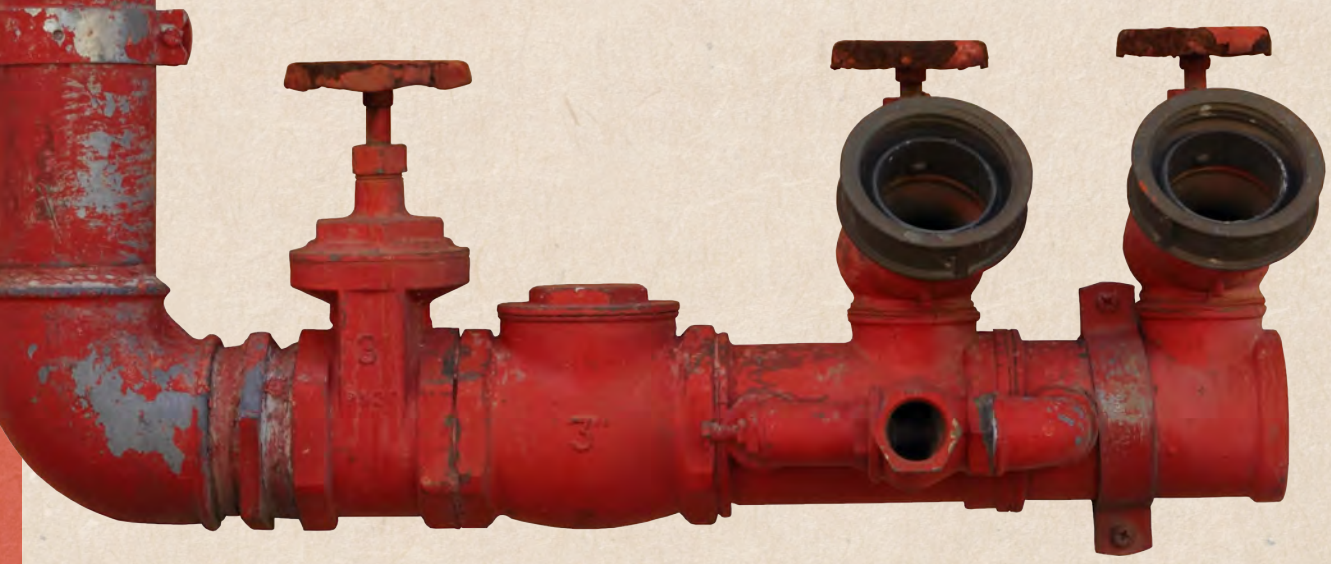
The capacity and quality of utilities and public services significantly affect the rural quality of life enjoyed by those who live and own property in Western Weber County. Residents expressed concern that population growth will increase the demand for utilities and public facilities and services. As the population increases, it is important to ensure that supply of services keeps pace with demand and that the expansion of utility infrastructure is planned to accommodate future needs.

The community consensus is that utility infrastructure development should be available when it is needed but should not drive growth, and that planning for future utility services should observe the limitations of the water and soil resources of the area.

The goals and principles presented in this element are designed to support planning for adequate utility and public services, either during the land development process or through appropriate government programs. It is important that new development pay its fair share of the cost of expansion of utility infrastructure and provision of services to newly developed areas of the planning area. Most utilities and public services require a substantial investment that must be planned well in advance of the need for the services. Major factors in determining the amount, location and type of growth that Western Weber County can anticipate include who will pay for improvements and where those facilities will be located.

Residents in the unincorporated areas of Western Weber rely on individual water and sewer systems and on private companies and special-use districts to develop, operate, and maintain most of the community's water, sewer, and electric power utility services.

Planning, zoning, and general administrative services are provided directly by Weber County. Fire and emergency response services are provided by Weber Fire District, while police service is provided by the Weber County Sheriff's Office. Weber School District serves the residents of Western Weber Planning Area.



Water Use & Preservation

CURRENT DEMAND

As of the 2022 State of Utah Legislative Session, general plans are now required to estimate water demand based on land use categories. While this requirement is not required to be fulfilled until 2026, this plan address it based on best available information at the time. This requirement should be revisited as better information becomes available.

The amount of water needed to sustain certain land uses are provided in the following table. The land use categories are based on the categories found in the State's water plan. This data is based on information provided by the Taylor West Weber Water District. The district reports 2,684 residential customers. At approximately three people per household, this assumes the population they serve is approximately 8,052 people. The gallons per capita per day (GPCD) water demand in the last column ties the water use to the population. This provides an industry-standard metric that helps establish the amount of water necessary to sustain the current population. It also can help project water demand as the population changes.

Table 11 - Taylor West Weber Water District Culinary Water Use.

Land Use Category	Connections	Gallons Per Day	Gallons Per Unit Per Day	Gallons Per Capita Per Day (GPCD) Water Demand
Residential	2,684	752,580.65	280.40	93.47
Commercial	23	11,493.87	499.30	1.43
Institutional	8	14,000	1,750	1.74
Industrial	No Data	No Data	No Data	No Data
Agriculture	39	48,322.58	107	6
Mining	No Data	No Data	No Data	No Data
Aquaculture	No Data	No Data	No Data	No Data
Power Generation	No Data	No Data	No Data	No Data

Source: Taylor West Weber Water District, billing dates May 1, 2022 through May 31, 2022.


Image 55 - Outdoor Residential Water Use


Image 56 - Agriculture Water Use

Table 12 - State of Utah Agricultural Water Duty (4.0 Acre-Feet per Acre per Year).

Land Use Category	Acres	Gallons Per Day	Gallons Per Acre Per Day*	Gallons Per Capita Per Day (GPCD) Water Demand
Agricultural	27,169	97,019,680	3,570.97	12,049.14

Source: Utah State University Extension[1] based on 2019 data.
*Gallons per day averaged for each day in a year and based on the area's 4.0 acre-feet per acre annual irrigation duty.

1 Feuz, Ryan, Ryan Larsen, and Cody Zesiger. "Size and Scope of Weber County Agriculture 2019." https://digitalcommons.usu.edu/, March 2020. Accessed July 5, 2022. https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=3107&context=extension_curall#:~:text=The%20county%20had%2028%2C259%20acres,cropland%20and%20pastureland%20were%20irrigated.&text=The%20growing%20season%20in%20Weber,four%20and%20a%20half%20months.

THE EFFECT OF PATTERNS OF DEVELOPMENT ON WATER DEMAND & WATER INFRASTRUCTURE

Based on existing trends in agricultural water being exchanged for municipal and industrial water, the State Division of Water Resources estimates that by 2065 there will be somewhere between 15,700 acre-feet and 26,100 acre-feet of water converted from agricultural water into municipal and industrial water.

Table 13 -Potential Conversion from Agricultural to Municipal and Industrial (M&I) Use Between 2020 and 2065.

Low Range	Mid Range	High Range
15,700 **Acre-Feet**	20,900 **Acre-Feet**	26,100 **Acre-Feet**

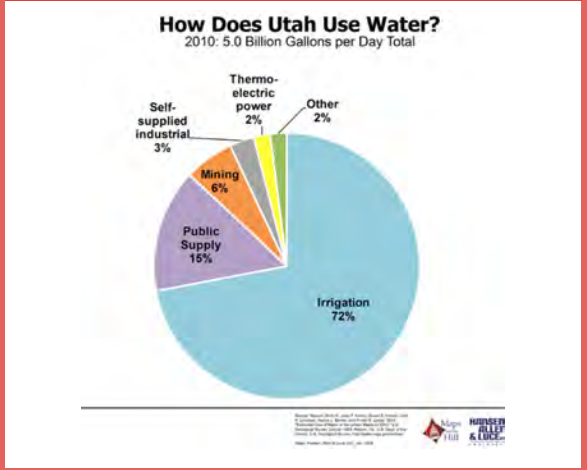
Source: Water Resources Plan (2022) pg 78. Pulled June 2, 2022 from https://water.utah.gov/wp-content/uploads/2022/01/Water-Resources-Plan-Single-Page-Layout.pdf.

METHODS OF REDUCING WATER DEMAND AND CONSUMPTION

The Utah Division of Water Resources has set a goal to reduce the Weber River basin's per capita water consumption by 20 percent by 2030. They further desire to reduce it by 30 percent by the year 2065.

Integrated throughout this Water Use and Preservation section, methods of reducing water demand and consumption are addressed pursuant to 17-27a-403.

Figure 57 - How Does Utah Use Water?



CULINARY WATER

Weber County currently plays no direct role in supplying culinary water to the planning area. Whether through development of additional private sources or expansion of existing community water systems, the area's projected growth will require additional culinary water and new water infrastructure.

West Central Weber residents expressed great concern over the availability and quality of culinary water sources. A number of the residents and businesses in West Central Weber rely on private water wells and developed springs for culinary (drinking) water service, but many residents depend on water service from three individual water companies. Taylor-West Weber Water Improvement District, Warren West Warren Water District, and Bona Vista Water Improvement District are the primary water service providers in the planning area. Each water company has a limit on the number of customers it can serve, based on its public water system certification. Apart from authorized capacity, water service providers are limited by the production capacity of their water sources, primarily wells, and several have experienced deliverability problems in the past, despite having fewer customers than their authorized capacity. Weber Basin Water Conservancy District is the water wholesaler for Weber County and has several projects underway to help expand service capabilities to water companies in the western portion of the county. Long term solutions from Weber Basin include surface water treatment.

Surface water can be treated for culinary uses, but the construction and operation of water treatment facilities are expensive. As the area's available water resources become scarce over time the State's plan is to tap water resources from other drainage basins. The Bear River Development Act of 1991, the infrastructure of which at the time was projected to be needed to serve the planning area by 2015, is a planned surface water development source for the area. Given technological advancements, conservation efforts, and other water projects in the area, the need for this infrastructure is now projected to be another 30 years out. The project will bring approximately 50,000 acre-feet of new water availability to the Weber Basin Water Conservancy District.

CULINARY WATER REDUCTION OPPORTUNITIES

Reducing culinary water waste is more challenging and perhaps more invasive than addressing water waste in secondary and irrigation water systems. This is because it effects the use of water inside buildings. Below are some methods that can be or are being employed to address this concern:

- ☐ The state has recently enacted new rules further restricting the amount of water allowed to flow from sink faucets and showers.
- ☐ Require water-wise educational signage in all public restrooms and hotel bathrooms that remind the public to be water conscientious and that encourage use of water only for what is necessary.
- ☐ Conduct robust educational campaigns to continually remind the public how to best conserve water.
- ☐ Provide outreach to schools to teach and encourage students to use water-wise behavior.
- ☐ Fund grants or loans for home plumbing repair of leaky or aging water infrastructure.

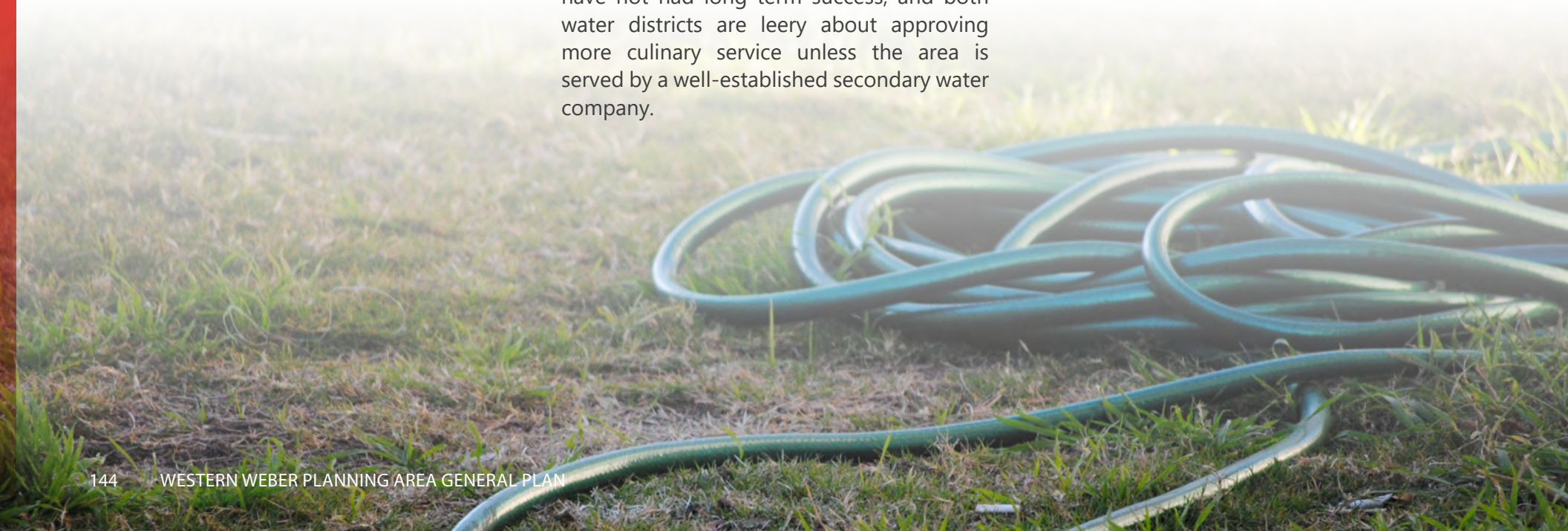
SECONDARY WATER

For the purposes of this general plan, "secondary water" refers to untreated pressurized water intended for the watering of outdoor landscaping.

Parts of the planning area are served by secondary water. Hooper Irrigation Company provides most of the secondary water service in West Central Weber. This water service is pressurized in the area south of the 12 Street corridor and east of the Weber River. The company is working toward providing pressurized services on the north side of the 12 Street corridor and east of the Weber River.

Neither the Taylor West Weber nor the Warren West Warren culinary water districts allow the use of culinary water for secondary water purposes. The districts do not have the capacity to serve secondary use. Both districts require provision of secondary water service prior to their approval of their culinary water use. Developers in areas that are not served by Hooper Irrigation Company have historically proposed individual secondary water systems per subdivision. These systems have not had long term success, and both water districts are leery about approving more culinary service unless the area is served by a well-established secondary water company.

Because both districts condition access to their culinary water on a secondary system over which they have no control or authority, it may be more prudent for these districts to control and operate both culinary and secondary water services, or plan for the unintended probability that their culinary service might be used for secondary purposes.



SECONDARY WATER REDUCTION OPPORTUNITIES

Weber Basin Water Conservancy District estimates that the typical yard of a single-family residence within its service area provides 8,000 square feet of turf grass or similar water intensive ground cover. This amount of turf grass and similar water-intensive ground cover requires approximately 10 percent more water than a typical single-family residence. In West Central Weber, the minimum lot area is predominantly 40,000 square feet. Assuming the lot owner covers 20,000 to 30,000 square feet of the lot in turf grass, the yard will demand between 50 and 64 percent more water than the typical indoor residential use.

Replacement of existing turf grass with water-wise landscaping and irrigation practices can significantly reduce this water demand. For example, drought tolerant plant species that are watered with targeted low-water irrigation, such as drip or trickle irrigation, and that are surrounded with rock, wood, or similar mulch can significantly reduce outdoor watering demands while continuing to provide an aesthetically pleasing landscape. There is a 40 to 90 percent water savings when switching from pressurized sprinkle irrigation to low-pressure drip or trickle irrigation.[1]

One of the best methods to reduce water use is to tie a financial value to the excessive use. To do this, metering is necessary. State code was recently changed to require all secondary water connections to be metered by 2030. Pricing water based on quantity used has proven useful for culinary systems.

Reducing lot area requirements and setback requirements will reduce ground area to be covered, and therefore will also help reduce an owner's desire for the more water-intensive ground cover.

Several water providers, with funding from the state, have started a turf buy-back program to provide financial assistance to turf replacement. Turf amortization through regulation or buy-back should be promoted. The County should also amend its street right-of-way standards to require water-wise landscaping within the public right-of-way.

The goals, principles, and implementation actions section of this chapter include additional water conservation recommendations.

1 Natural Resources Conservation Service (NRCS), National Engineering Handbook, Irrigation Guide. (1997). Pulled on June 21, 2022 from https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_033068.pdf.

IRRIGATION WATER

For the purposes of this general plan, "irrigation water" refers to gravity fed untreated water usually used for flood irrigation.

There are a number of private irrigation companies that serve West Central Weber. These systems are comprised of gravity-fed canals and ditches. A gravity fed system requires a certain volume of water directed into it, called headwater, in order to maintain its ability to push adequate water flows to the furthest extent of the ditch system. Because of this, irrigation companies have a limited supply of water rights or shares that can be transferred to other systems or converted to other water uses. As development occurs and demand increases for secondary pressurized water, it would be beneficial to be able to transfer irrigation water into a pressurized system. If irrigation systems are also pressurized in order for irrigation water to continue to provide necessary delivery flow, then there may be more motivation to allow the transfer or conversion of water rights to other systems. For this reason, Weber County should find ways to motivate and encourage the pressurization of irrigation systems.

IRRIGATION WATER REDUCTION OPPORTUNITIES

Typical flood irrigation wastes approximately 50 percent of the water applied through evaporation or percolation. Water wasted through percolation is water that seeps into the earth without positively moistening the root system of the crop. Similarly, typical spray irrigation wastes approximately 35 percent of the water applied.

DRIP OR TRICKLE IRRIGATION

In many agricultural circumstances, low-pressure drip or trickle irrigation can lead to increased crop production while increasing the efficiency of water use. It can more efficiently target a plant's roots, thereby avoiding much of the waste resulting from flood and spray irrigation. It can also be used to provide a more targeted method of fertilizer delivery.

However, while more water-efficient, in certain circumstances drip or trickle irrigation has limitations that may offset the overall balance of sustainable agriculture. The lifespan of drip and trickle irrigation tubing and emitters is relatively short and requires regular replacement, sometimes annually. Hard water clogs tubing and emitters and requires regular cleaning or replacement of emitters, or installation of a water softening system. An agricultural operator must weigh the water efficiency benefits with the overall agricultural productivity.

DITCHES AND CANALS

As with flood irrigation of crops, a significant amount of water is wasted in evaporation and percolation in flood irrigation delivery systems. This water waste is eliminated in a sealed system. As new development occurs, the construction and burial of a sealed irrigation water delivery system in place of existing ditches and canals will move each irrigation system towards a more water-efficient future.

WATER REDUCTION

IN COUNTY OPERATIONS

State statute requires a County's general plan to consider opportunities for the county's operations to eliminate water waste. Weber County's water-intensive operations are fairly minimal compared to the operations of incorporated cities, but there are facilities that could contribute to water reduction, even if only minimally.

Weber County is responsible for the operations of the Weber Center, the Sheriff's Complex, Ogden Eccles Conference Center, Perry Egyptian Theater, Weber County Sports Complex, the Golden Spike Events Center, and Fort Buenaventura, Memorial Park, and North Fork Park. In each of these facilities, the county should consider the water-saving improvements listed in the goals, principles, and implementation action section of this chapter.

WASTEWATER

Utah state law requires that community sewer service be provided by a "body politic," either a service district created by the County Commission or the Commission itself. The Commission may create a special district and delegate sewage control to the board of that district, while maintaining some control when it comes to the boundaries of the district. For community sewer systems that are not governed by a district, the County remains the body politic.

Sewer service for a limited portion of the planning area is provided by four districts: Central Weber Sewer Improvement District, Little Mountain Service Area, and Uintah Highlands Improvement District. Residents outside of existing sewer service areas rely on individual septic drainfield systems.[2]

2 To use a septic system, a building lot must be at least 20,000 contiguous square feet of less than 25 percent slope if the culinary water supply is from a community water system, or 1 to 1.75 acres of land if culinary water service is from an individual well. There must also be room on the parcel for a wellhead protection zone if a well exists, and a replacement drainfield in case the initial drainfield fails

EXISTING SERVICES

The body politic for each of the three sewer districts in the planning area is the district's governing board and not the County Commission, although current commissioners have a seat on the board of the Central Weber Sewer District and Little Mountain Sewer District.

CENTRAL WEBER SEWER IMPROVEMENT DISTRICT

The Central Weber Sewer Improvement District provides wholesale wastewater collection and treatment in the Taylor and West Weber areas. As a wholesale provider, Central Weber provides main sewer trunk lines through the area, but does not provide, own, or operate any of the smaller community lines that serve the area. In the absence of another entity owning and operating these community lines, the responsibility has defaulted to Weber County.

Weber County has a sewer master plan, as depicted in ***Map 18 - Weber County Sewer Master Plan on page 149.*** The plan provides a number of service areas wherein wastewater will gravity flow to the area's planned centralized lift station. The lift station will pressurize the wastewater and send it either to another lift station, or to one of Central Weber's main gravity trunk lines.

As development in the area occurs, the sewer master plan will need to be expanded to address more service areas and lift stations that feed into Central Weber's gravity lines. The County's desire is to move the entire West Central Weber area's wastewater to Central Weber's treatment facility in Marriott-Slaterville.

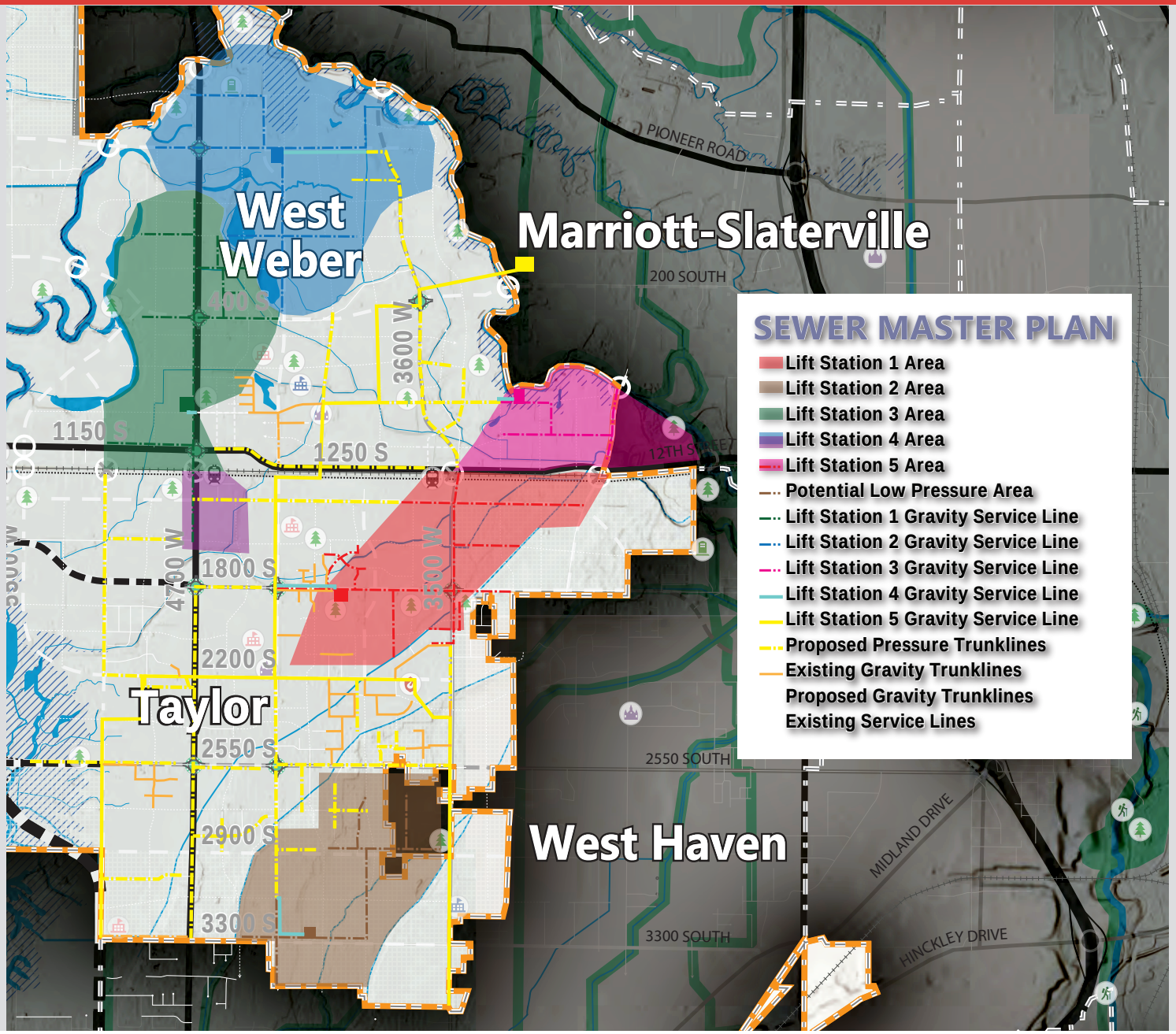
LITTLE MOUNTAIN SERVICE AREA

The Little Mountain Service Area provides sewer service to a few owners in the extreme western part of West Central Weber. It currently has capacity to serve more land in the immediate area, but does not have significant capacity like Central Weber. Little Mountain provides both wholesale and retail sewer service, and as such owns all of the lines connected to it. Recently, Little Mountain Service Area has provided a will serve letter and commitment to expand its service boundaries to a new development proposed along 7500 West.

UINTAH HIGHLANDS IMPROVEMENT DISTRICT

The Uintah Highlands Improvement District serves both culinary water and sanitary sewer to the Uintah Highlands area. Like Little Mountain, Uintah Highlands provides both wholesale and retail sewer service, and as such owns all of the lines connected to it. The Uintah Highlands service area is nearly built-out.

Map 18 - Weber County Sewer Master Plan

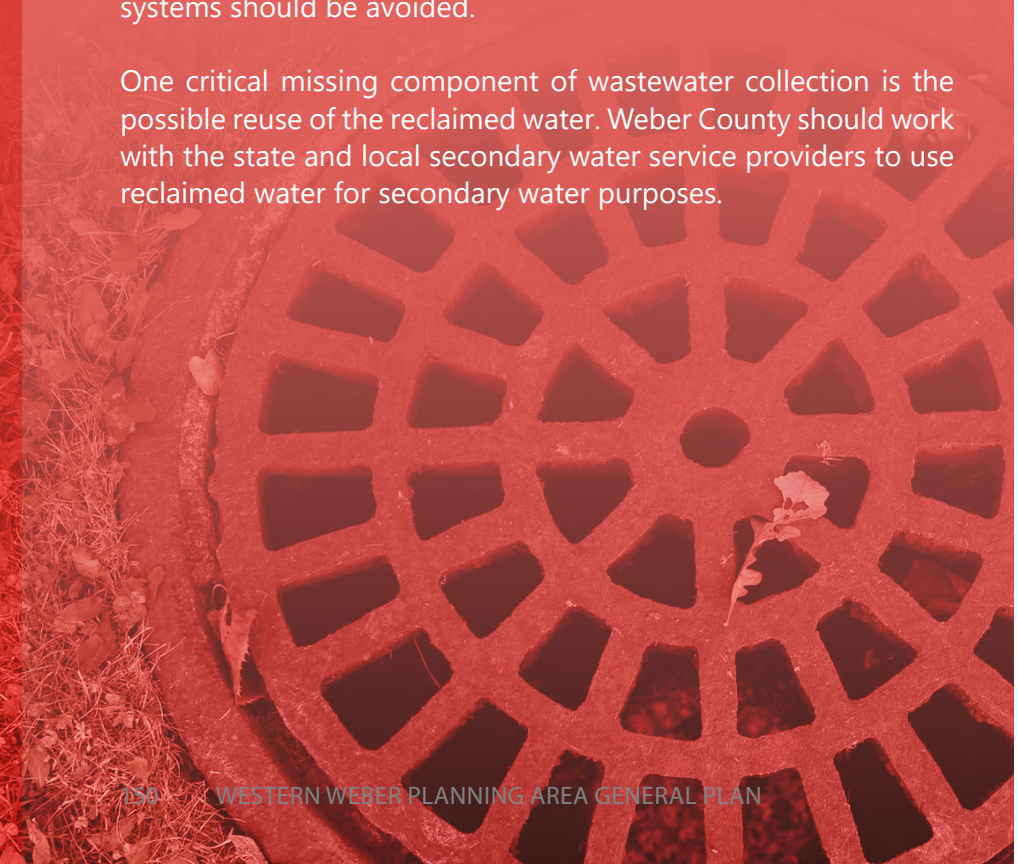


FUTURE OF WEST CENTRAL WEBER SEWER

The county plans for the entire planning area to be provided with sewer services at some point in the future. The County will likely need a special improvement district with revenue generation capability to own and operate existing and new service lines and lift stations in West Central Weber. When wastewater collection lines that connect to Central Weber Sewer Improvement District reach the same area served by Little Mountain, the County should encourage the two systems to merge into one consolidated sewer service.

Where sewer service is not available, most develop using septic systems. The Weber Morgan Health Department reports concerns over septic system densities in West Central Weber. New septic systems should be avoided.

One critical missing component of wastewater collection is the possible reuse of the reclaimed water. Weber County should work with the state and local secondary water service providers to use reclaimed water for secondary water purposes.



SURFACE & STORMWATER

The installation and maintenance of surface and stormwater management infrastructure is generally the responsibility of the developers and homeowners of development projects in Western Weber. As with sewer and water service, there currently is no county-wide entity for the planning and operations of surface/stormwater management facilities.

The county completed a stormwater master plan in 2015. The plan covers only West Central Weber. In 2020 the County funded a stormwater utility account. In 2021 the County applied a small stormwater tax to help fill the stormwater utility account to fund significant stormwater management improvements.

There is a public desire to entertain cross-jurisdictional stormwater infrastructure facilities planning. West Central Weber is downhill from most of the surrounding jurisdictions. Each uphill jurisdiction drains into West Central Weber. This leaves the owners in West Central Weber responsible for the management of this drainage. It would be beneficial to the future residents and businesses in West Central Weber to study and coordinate drainage systems as they cross from the Wasatch Mountains to the Great Salt Lake.

When doing cross-jurisdictional coordination, it may prove beneficial to create a special stormwater district similar to that in Salt Lake County. This new district would help consolidate services, and could be the revenue generation and operations and maintenance entity for the entire county.

Map 19 - Water Courses