

SPRING CITY CULINARY WATER IMPACT FEE ANALYSIS 2024

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November 2024

PREPARED BY:
Sunrise Engineering



SPRING CITY

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CERTIFICATION OF IMPACT FEE ANALYSIS BY CONSULTANT

In accordance with Utah Code Annotated, § 11-36a-306, Jesse Ralphs, P.E., on behalf of Sunrise Engineering, makes the following certification:

I certify that the attached impact fee analysis:

1. Includes only the costs of public facilities that are:
 - a. Allowed under the Impact Fees Act; and
 - b. Actually incurred; or
 - c. Projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. Does not include:
 - a. Cost for operation and maintenance of public facilities;
 - b. Costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents;
3. Offsets costs with grants or other alternate sources of payment; and
4. Complies in each and every relevant respect with the Impact Fees Act.

Dated: 11/11/2024

Sunrise Engineering

By: Jesse Ralphs

EXECUTIVE SUMMARY

Spring City commissioned this Impact Fee Analysis in conjunction with the Spring City Culinary Water Improvement Project to properly allocate a proportional cost of the culinary water system improvements to new development. An impact fee is a fee imposed on new development to mitigate the impact of the new development on public infrastructure.

Spring City, which is located approximately 5 miles south of Mt. Pleasant in Sanpete County near the geographical center of the State of Utah and has a culinary water system that currently serves a population of approximately 1,185 people. The culinary water system provides culinary water connections for residential, commercial, industrial, and institutional users. The projected annual growth rate for Spring City is 1.50%.

Because new growth places an added burden on the existing system and creates the need for new infrastructure, Utah law allows public water suppliers to charge an impact fee to new development. Not all costs associated with system improvements are allocable to future growth. Some system improvements increase the level of service for existing customers. Only the costs associated with those portions of the system improvements which are allocated to future growth may be considered in calculating a reasonable impact fee. Impact fees are assessed per Equivalent Residential Connection, or ERC.

Spring City plans to construct several improvements to the culinary water system within the impact fee planning period. A portion of these improvements will provide capacity to serve future growth, and will be included in the impact fee analysis herein.

After considering each of the improvements with their associated capacity increases and financing terms, this analysis proposes a **\$4,464** impact fee per ERC. Spring City may choose to assess a lower impact fee, but the City may not assess an impact fee higher than that justified by this analysis.

1.0 INTRODUCTION

An impact fee is a fee imposed on new development to “mitigate the impact of the new development on public infrastructure.” Utah Code § 11-36a-102-8(a). Impact fees are subject to the restrictions within the Fifth Amendment of the U.S. Constitution prohibiting the taking of private property for public use without just compensation. To comply with the U.S. Constitution, it is required that there will be an “essential nexus” between the fee imposed and the protected interest, and that the fee imposed be “roughly proportional” to the burden created by the new development. See *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987); and see *Dolan v. Town of Tigard*, 512 U.S. 374 (1994).

The levy of impact fees in Utah is governed by the Utah Impact Fees Act codified as Utah Code § 11-36a. and requires more specific analysis than that required by the U.S. Constitution. Before imposing an impact fee, a municipality or public service provider, such as Spring City, must prepare a written analysis of each impact fee. An impact fee analysis is designed to proportionally allocate to new development that portion of the cost of new facilities that may be required or excess capacity of existing facilities. The impact fee analysis must:

1. Identify the anticipated impact on existing facilities by new development.
2. Identify the anticipated impact on system improvements by anticipated development.
3. Demonstrate how those impacts are reasonably related to the anticipated development.
4. Estimate the proportionate share of costs to be recouped by the impact fee.
5. And identify how the impact fee was calculated. Id. at § 304.

Entities imposing impact fees must also prepare an impact fee facility plan unless excepted by statute. An impact fee facilities plan is not required if the municipality’s general plan, under Utah Code 10-9a-401, contains the elements required by the Impact Fees Act. Id. at § 301. Municipalities serving less than 5,000 people and charging total impact fees of less than \$250,000 annually are not required to prepare an impact fee facilities plan. However, they must ensure that the impact fees “are based upon a reasonable plan that otherwise complies with the common law and [other section of the Impact Fees Act].” Id. at § 301. This Impact Fee Analysis has been prepared in conjunction with the Spring City Culinary Water Improvement Project.

The Utah Supreme Court outlined a set of seven factors which may be considered in determining the reasonableness of an impact fee; these factors are now known as the “Banberry factors.” *Banberry Dev. Corp. v. S. Jordan Town*, 631 P.2d 899, 904 (Utah 1981). However, the Court has subsequently noted that these factors “were merely ‘means to [an] end.’ And the ultimate legal test is whether the impact fees relate to the cost of the benefits conferred on those paying the fees.” *Tooele Assoc. LTD. V. Tooele Town Corp.*, 247 P.3d 371 (Utah 2011) (quoting *Home Builders Ass’n of Utah v. Town of American Fork*, 973 P.2d 425, at ¶120 (Utah 1999). Nonetheless, this impact fee study will review each of the Banberry factors for the system impact fee. A brief analysis of the Banberry factors is attached to the analysis as Appendix A.

Although the municipality may enact a lower impact fee than that justified by the Impact Fee Analysis, the municipality may not impose a fee higher than that justified in the analysis.

2.0 PURPOSE OF THIS IMPACT FEE ANALYSIS

The purpose of this Impact Fee Analysis is to proportionally allocate to new development the cost of excess capacity in existing public facilities and the projected cost of excess capacity to be provided by

future system improvements that will be required to supply culinary water within the service area of the Spring City culinary water system. A summary of the existing system components with excess capacity is included in Section 6.4 of this analysis.

This impact fee calculates the highest proportionate share of the cost of these public facilities which may be reasonably allocated to new development. Spring City is a public water supplier serving about 1,185 people and is therefore exempt from providing an impact fee facilities plan. However, the impact fee analysis must be based on a reasonable plan, in this instance the Spring City Culinary Water Master Plan Update dated June 2020.

3.0 METHODOLOGY

The impact fee for the culinary water considers cost recovery for excess capacity of current system components. The City's current capital facilities plan includes the improvements that will be constructed as part of the Spring City Culinary Water Improvement Project as anticipated impact fee eligible improvements within the next six years.

Impact fees may not be used for maintenance or repair of the existing system, or for system improvements that increase the level of service to existing system users, unless the improvements provide additional system capacity that directly supports new development. Impact fees may not be used to recoup more than the actual public facility costs incurred or those projected to be incurred "within six years after the day on which each impact fee is paid." Id. at § 306. Also, impact fees must include an offset for grants or other alternative sources of payment and may not include expenses for operation and maintenance or for overhead, unless overhead expenses are calculated using a methodology consistent with generally accepted cost accounting practices and the standards accepted by the Federal Office of Management and Budget for federal grant reimbursement. An impact fee analysis must also identify the cost the existing system users would pay through user fees.

Accordingly, this analysis:

1. Determines the actual cost incurred or to be incurred within six years of the date of this report.
2. Sets forth existing levels of service.
3. Does not include any general overhead expenditures or costs for the operation of the facilities.
4. Offsets for potential grants for proposed projects.
5. Includes an analysis of the prior completed projects which remain impact fee eligible.
6. And includes a user fee credit to account for portions of projects paid for through user fees.

To determine the proportionate share of the cost to new development, this analysis reviews current and past demographic trends and provides a projection for future growth within the Spring City service area for the next 20 years. Capacity of the current system and excess capacity of each new system component that will be used in this analysis are based upon data provided in the Spring City Culinary Water Master Plan Update dated June 2020 and the Spring City Culinary Water Improvements Preliminary Engineering Report (PER) updated May 2023, prepared by Sunrise Engineering for Spring City. Costs of the proposed public facilities are based on actual bid prices for the Spring City Water Improvements Project.

Because water demands of multi-family, industrial, and commercial connections vary widely, excess

capacity of system components is expressed in terms of equivalent residential connections (ERCs), sometimes referred to as estimated residential units (ERUs). An ERC represents an average amount of water used by a typical single-family residence. ERCs are different for each type of public facility and are more particularly described in Section 6.2 of this analysis.

The determination of the existing Level of Service (LOS) of the current systems is based upon previous project design capacity as well as minimum standards required by current regulations.

4.0 DEMOGRAPHICS AND PROJECTIONS OF FUTURE DEMAND

Spring City has grown at a low to modest rate throughout its history. The average annual growth rate for Spring City over the last 20 years is about 1.50% with increasing growth rates in recent years. It is estimated that the City currently has a population of 1,185. This impact fee analysis relies upon these growth projections to estimate the number of future ERCs that may be served by the proposed water system improvements. The projected 20-year population growth is provided in Table 4.1.

Table 4.1 Spring City Projected 20 Year Population

Year	Population Projection
2024	1,185
2029	1,277
2034	1,375
2039	1,482
2044	1,596

5.0 BASIS OF ANALYSIS AND LEVEL OF SERVICE

The basis of analysis of the City’s culinary water system will be the Division of Drinking Water’s minimum sizing requirements as provided in Section R309-510 of the Utah State Code. Minimum sizing requirements for water source capacity, water rights, and storage capacity are determined, in part, by the system’s location. Within the State, there are six irrigated crop consumptive use zones that vary by climate and annual precipitation. Spring City falls within Zone 3, which is considered moderate for outdoor watering requirements. According to Spring City, approximately 90% of the current connections within existing town limits have access to, and primarily utilize secondary water for outdoor irrigation, while approximately 10% of current connections utilize culinary water for outdoor irrigation. Spring City has also observed that much of the current and future growth may extend beyond the current town limits into areas that the Horseshoe Irrigation Company does not service with secondary water. Spring City anticipates that 25% of future growth during the planning period will utilize culinary water for outdoor watering.

The minimum sizing requirements for systems in Zone 3 are summarized as follows:

1. Water Rights: The system shall have sufficient valid water rights for the average yearly demand for the system. The estimated average yearly demand for a system is based on:
 - a. 146,000 gal/ERC for indoor use (0.45 Ac-Ft)

- b. 1.66 Ac-Ft per irrigated acre for outdoor use
- 2. Source Capacity: The system shall have sufficient source capacity to be able to meet the anticipated peak day demand. The peak day demand is estimated based on:
 - a. 800 gpd/ERC for indoor use
 - b. 3.39 gpm/irrigated acre for outdoor use
- 3. Storage Capacity: The system shall have sufficient storage capacity to satisfy average day demands for water for indoor and irrigation use, fire flow storage, and emergency storage if deemed appropriate by the water supplier or the Director.
 - a. Average day demands for water are estimated based on:
 - i. 400 gal/ERC for indoor use
 - ii. 2,528 gal/irrigated acre for outdoor use
 - b. Fire flow storage volume shall be as required by the local fire code. Fire flow storage volume for Spring City is based on:
 - i. 1,500 gpm for a period of two hours, which equates to a total of 180,000 gallons.
- 4. Treatment Capacity: Continuous disinfection is required of all ground water sources that do not otherwise continuously meet microbiological standards. Surface water, or ground water under the influence of surface water, shall be filtered by conventional or alternative surface water treatment methods and disinfected to achieve Primary Drinking Water Standards as defined in Section R309-200-5.
- 5. Distribution System Capacity: The distribution system shall have sufficient capacity to maintain the following minimum pressures at all points throughout the system:
 - a. Water systems approved prior to January 1, 2007, are required to maintain a minimum of 20 psi at all locations within their distribution system.
 - b. Water systems, or expansions to water systems that are constructed after January 1, 2007 shall meet the following minimum water pressures at all points of connection:
 - i. 20 psi during conditions of fire flow and fire demand experienced during peak day demand. Minimum required fire flow for Spring City is 1,500 gpm.
 - ii. 30 psi during peak instantaneous demand; and
 - iii. 40 psi during peak day demand.

6.0 CULINARY WATER IMPACT FEE ANALYSIS

This impact fee analysis will determine the proportionate cost of excess capacity provided by previous and future projects that are allocable to future growth. Impact fee calculations may also include the proportionate costs of existing facilities and components that currently have excess capacity. It is recommended that this impact fee analysis be reviewed and updated every five years, at a minimum.

The existing capacity of the current system and the excess capacity of each component that will be used in the Impact Fee Analysis is based on the data provided by the Spring City Culinary Water Master Plan

Update dated June 2020 and the Spring City Culinary Water Improvements Preliminary Engineering Report (PER) updated May 2023. Excess capacity of system components will be expressed in terms of equivalent residential connections (ERCs). The determination of the existing Level of Service (LOS) of the current distribution system will be based on the design capacity of both the current system and the planned projects.

6.1 CURRENT SYSTEM

There are approximately 521 current connections on the Spring City culinary water system. This includes 497 residential connections, 9 commercial connections, 1 industrial connection, and 14 institutional connections.

6.2 CALCULATION OF AN ERC

Due to the wide variance of water use in residential, commercial, industrial, and institutional connections, an equivalent residential connection (ERC) is used. An Equivalent Residential Connection (ERC) is defined as the amount of culinary water required by an average residential connection. The Utah Division of Drinking Water (DDW) minimum sizing criteria for storage include an estimate of 400 gallons per day for indoor use, or approximately 12,000 gallons per month. Since commercial, industrial, and institutional connections can be related to residential usage through an ERC, this number can be used to estimate the amount of source storage and water rights needed for a system using the DDW standards.

6.3 PROJECTED DEMAND

The number of culinary water ERCs expected at the end of the planning period can be calculated using the compound interest formula and inserting the projected growth rate, the existing number of culinary water ERCs, and the 20-year planning period for culinary water improvements.

Based on the 1.50% growth, the City will have 702 ERCs in 2044. The projected number of ERCs for the 20-year planning period was calculated using the compound interest formula as follows: $Future\ Connections = Current\ Connections \times (1 + rate)^n$ where $n = 20$ years and the growth rate is 1.50% per year. As an example, the future residential ERCs are projected as follows:

$$F = 521 \times (1 + 0.015)^{20} = 702\ ERCs$$

The growth rate of 1.50% will also be applied to Industrial, Institutional, and Commercial users because it is assumed these types of connections will increase proportionally with the residential population.

As noted above, approximately 10% of current ERCs utilize culinary water for outdoor irrigation. However, due to the service area limits of the Horseshoe Irrigation Company, it is projected that approximately 25% of new connections through the planning period will not have access to the secondary system and will be required to utilize culinary water for outdoor irrigation. The projected demand calculations are included in Appendix B for reference.

The projected number of ERCs for each category are shown in Table 6.3.

Table 6.3. Spring City Current and Projected ERCs

EQUIVALENT RESIDENTIAL CONNECTIONS IN 2024				
CLASSIFICATION	CONNECTIONS	MULTIPLIER	ERC	20 YR PROJECTED ERCs
Residential	497	1.00	497	669
Commercial	9	1.00	9	12
Industrial	1	1.00	1	1
Institutional	14	1.00	14	19
TOTAL			521	702

* Figures are rounded to the nearest whole number

6.4 EXCESS CAPACITY AND ALLOCABLE COST OF EXISTING FACILITIES

The culinary water system capacity is determined by five system components, to include the system’s water rights, sources (springs and wells), treatment capacity, storage capacity (tanks), and distribution system capacity. Each component has its own independent capacity requirements and available capacity. Spring City’s current source capacity, treatment capacity (disinfection), and storage capacity (accounting for the anticipated demolition of the lower 350,000-gallon tank) do not have any surplus capacity. There is no financial record of the purchase agreements for the system’s water rights, and there is inadequate financial information to derive an impact fee for the system’s existing distribution system. As such, no costs from prior system improvements will be included in the impact fee analysis at this time.

6.5 NEW NEAR-TERM PROJECT

The Spring City Culinary Water Improvement Project 2024 is currently under construction, and therefore falls within the eligible six-year window for eligible future projects. As such, the improvements planned for the Spring City Culinary Water Improvement Project are included in this impact fee analysis. The project will include the following components.

1. **500,000-gallon Water Tank** – As part of the Spring City Culinary Water Improvements Project 2024, the existing 350,000-gallon culinary water tank will be decommissioned and demolished, and a new 500,000-gallon culinary water tank will be constructed to serve both the upper and lower pressure zones. After the decommissioning of the existing 350,000-gallon tank and the completion of the new 500,000-gallon tank, Spring City will have a total storage capacity of 1,000,000 gallons. This provides Spring City with an excess storage capacity of 453,094 gallons as calculated in Appendix B. As such, 95% of the capacity and cost of the new 500,000-gallon tank is allocable to future growth. The total cost of the new 500,000-gallon tank is \$1,448,316 (principal + interest), and the impact fee eligible portion of the cost is \$1,373,104. The excess capacity will support 776 ERCs.
2. **Upgraded Distribution Piping** – The Spring City Culinary Water Improvements Project 2024 will upgrade several lines in the distribution network to improve capacity (flow and pressure) throughout the system, with a focus on increasing capacity along the east side of the system where future growth is anticipated. The main transmission line from the tanks to the system will be upgraded from a 10” line to a 12” line, and sections of the main line along 700 E and 600 S will be upgraded from 6” and 8” lines to a new 10” main line. These upgrades will

simultaneously improve the system capacity along 700 E to meet the required level of service for fire flow capacity, and also increase the overall distribution system capacity throughout the system.

The available capacity within the distribution system is a dynamic metric that is dependent upon where the demands in the system may occur at any given time. As such, an average available capacity across the system is derived from the hydraulic model based on the average available design flow that can be achieved during peak day demands while still maintaining the minimum allowable pressures throughout the system. The average available design flow in the entire system is projected to increase from 2,114 gallons per minute (gpm) to 2,600 gpm, for a projected increase of 486 gpm on average across the system. Within the service area along 700 E, the average available design flow is projected to increase from 1,178 gpm to an average of 2,536 gpm, which represents a 115% increase within this localized service area. In this area, approximately 321 gpm of the increased capacity (approximately 24%) is required to meet the level of service (1,500 gpm fire flow), while the remaining 76% of the increase is allocable to future growth. Although the physical upgrades are geographically limited to this eastern service area, they provide increased capacity throughout the system. As such, 76% of the cost of the distribution system upgrades will be impact fee eligible, and will provide capacity for 581 additional ERCs as calculated in Appendix B. The total cost of the distribution system improvements is \$2,938,749 (principal + interest) and the impact fee eligible portion of the cost (76%) is \$2,242,963.

6.6 IMPACT FEE CALCULATION

The impact fee calculation is calculated by dividing the total allocable cost by the total number of ERCs served by the improvement. The allocable costs are shown in Table 6.6.

Table 6.6 System Components with Excess Capacity

Spring City Culinary System Eligible Improvements								
Improvement	Total Estimated Cost	Grant	Loan	Loan (Principal + Interest)	% Allocable to Future Growth	Eligible Cost	ERC Served	\$/ERC
New 500,000-Gallon Tank	\$ 1,693,418	\$ 500,120	\$ 1,193,297	\$ 1,448,316	95%	\$ 1,373,104	776	\$ 1,768.88
Upgrades to Distribution System	\$ 3,436,080	\$ 1,014,784	\$ 2,421,296	\$ 2,938,749	76%	\$ 2,242,963	581	\$ 3,862.80
Sum of Eligible Impact Fees								\$ 5,631.68
User Fee Credit								\$ (1,167.65)
Recommended Impact Fee								\$ 4,464.03

6.7 CREDITS

The improvements included in the impact fee analysis are part of a culinary water improvements project that is financed through the Utah Drinking Water Board with a combination of grant and loan funds as represented in Table 6.6. Because a portion of future monthly usage rates may be used to service debt payments for current and proposed infrastructure, a reasonable impact fee may account for the portion paid by new users to debt service payments. To calculate the per-ERC credit, an estimation of average contribution per ERC to the debt service payments over the course of the planning period is made.

As new ERCs are added to the system, the portion of individual user fees allocated to debt service payments will decrease, and the amount of collected impact fees that are available to offset the debt

service payments will increase. On average through the planning period, new ERCs will contribute to debt service payment for 9.01 years as shown in Appendix C. The calculation of the average years of payment, projected impact fees that are collected and allocated to paying down the debt service, and the average annual portion of user fees are included as Appendix C. It should be noted that additional impact fee eligible projects and debt service may be incurred within the planning period, and the impact fee analysis should be updated as these projects occur.

To calculate a reasonable credit, the impact fee eligible annual debt service for each year is divided by the number of ERCs served for each year through the 20-year planning period. The average portion of user fees used for debt service on impact fee eligible projects during the planning period is \$129.59 annually as shown in Appendix C. The credit is then calculated by multiplying the average portion of annual user fees by the average years an ERC will pay user fees during the planning period. Thus, the calculated credit (detailed further in Appendix C) is as follows:

$$\text{User Rate Credit} = \$129.59 \times 9.01 \text{ years} = \$1,167.65$$

6.8 RECOMMENDED CULINARY WATER IMPACT FEE

The total impact fee allowable for culinary water is the sum of the allocable costs for excess system capacity and new projects minus the calculated user rate credit. The maximum recommended impact fee for culinary projects is **\$4,464**.

7.0 CONCLUSION AND RECOMMENDATIONS

Sunrise Engineering recommends the maximum reasonable impact fee for Spring City's culinary water system to be no more than **\$4,464** per ERC fee as indicated in Section 6.8. The impact fee is to be in addition to, and separate from, connections fees.

Before enacting the actual impact fee, Spring City should take into consideration the relationship between impact fees and future growth. An impact fee can influence the growth in a community. Higher impact fees discourage growth, while lower impact fees encourage growth but provide reduced funds per ERC and require that growth be subsidized by user rates. The actual enacted impact fee should reference the calculated impact fee as the basis of the enacted fee to comply with State law and still meet funding requirements.

A residential connection represents 1 ERC, and no residential or commercial connection should pay less than the amount of impact fee charged for a residential connection. It is recommended that the impact fee charged for non-residential connections should equal the amount of the impact fee set for a residential customer times the estimated ERC equivalent of the proposed facility.

The impact fee that is adopted based on this impact fee analysis should be charged to new connections until any of the following events occur:

1. New system improvements (other than those included in Section 6.5) are anticipated within six years, and therefore become eligible for inclusion in the impact fee calculation.
2. The impact fee analysis is otherwise reviewed and updated. It is recommended that it be updated every five years at a minimum.
3. If the excess capacity of the existing system facilities that are included in this analysis is expanded.

Spring City has experienced increasing growth over the past two decades and continual growth is expected. This impact fee analysis will help the City apportion the costs of system improvements and expansion to the new growth that the improvements will serve.

Appendix A:

Analysis of Banberry Factors

Banberry Factors Analysis

Utah Code Ann. 11-36a-304(2) requires that the following factors, also known as Banberry Factors be considered as applicable in order to verify that the proportionate share of the costs of public facilities are reasonably related to the new development activity.

- a) *The cost of each existing public facility that has excess capacity to serve the anticipated development resulting from the new development activity:*

For a discussion of the cost of the new storage tank and upgrades to the distribution system and the associated excess capacity, please refer to Section 6.5, and Section 6.6.

- b) *The cost of system improvements for each public facility*

The costs of improvements to each public facility are discussed in Section 6.5 and Section 6.6.

- c) *Other than impact fees, the manner of financing for each public facility, such as user charges, special assessments, bonded indebtedness, general taxes, or federal grants:*

The manner of financing for public facilities excluding impact fees is discussed in Section 6.7.

- d) *The relative extent to which development activity will contribute to financing the excess capacity of and system improvements for each existing public facility, by such means as user charges, special assessments, or payments from the proceeds of general taxes:*

This extent to which development activity will contribute to financing the excess capacity of the each public facility is discussed in Section 6.7.

- e) *The relative extent to which development activity will contribute to the cost of existing public facilities and system improvements in the future:*

The capacity of planned and existing culinary water infrastructure was analyzed to determine its excess capacity as discussed in Appendix B. The excess capacity was included in the planned upgrades to existing infrastructure to account for the projected development activity that is anticipated throughout the planning period. The cost of the planned upgrades that is associated with the excess capacity that was included to support

projected development is discussed in Section 6.5 and Section 6.6. Development activity above and beyond the design capacity of the existing system will create a need for system improvements in the future. At that time a new impact fee should be developed to account for the additional system improvements.

- f) *The extent to which the development activity is entitled to a credit against impact fees because the development activity will dedicate system improvements or public facilities that will offset the demand for system improvements, inside or outside the proposed development:*

New development activity should be allowed a credit against impact fees to the extent that the development activity dedicates system improvements or public facilities that offset the demand for system improvements. However, simply installing the necessary components for system expansions that may be required to serve new development does not lessen the surplus capacity that is consumed in the source, storage, and distribution capacities. In this case, the impact fee for the existing system should still apply to the new development.

- g) *Extraordinary costs, if any, in servicing the newly developed properties:*

This factor is not currently applicable to this impact fee analysis. The existing water source infrastructure, storage infrastructure, and distribution infrastructure have been constructed to serve the existing community. No new development since the construction of the system has been considered to present extraordinary servicing costs. In the event that a future development should present extraordinary costs, it is recommended that Spring City evaluate the proposed development prior to issuing a construction permit to determine whether or not to allow the development to occur in that manner.

- h) *The time-price differential inherent in fair comparisons of the amounts paid at different times:*

The time-price differential of amounts paid at different times related to the impact fee is not influenced only by inflation, but also by the amount that is paid towards the system costs through user fees over time. For this purpose, a user fee credit is recommended in 6.7, if any portion of user fees is used to service debt/bond payments. It is not considered feasible to update the impact fee on an annual basis to account for the time price differential of amounts paid at different times. In order to ensure that the time-price differential associated with impact fees paid at different times is limited, Spring City should review and update this impact fee analysis at least once every five years.

APPENDIX B:

SYSTEM CAPACITY ANALYSIS

Spring City Storage Capacity Analysis

Average Day Demand/ERC	400 gpm
Outdoor Watering w/Culinary	25 %
Average Lot Size	1/3 Acre
Irrigation Zone	3
Outdoor Demand	2,528 gal/irrigated acre

Projected Storage Capacity:

Existing Upper Tank 1	250,000 gal.
Existing Upper Tank 2	250,000 gal.
New Tank	500,000 gal.
Total	1,000,000 gal.

Existing Storage Capacity Required

Residential Use:

Indoor Use (100%):

$$497 \text{ ERC} \times \frac{400 \text{ gal.}}{\text{ERC}} = 198,800 \text{ gal.}$$

Outdoor Use (assuming 25% of ERCs use culinary for outdoor):

$$124 \text{ ERC} \times \frac{1 \text{ acre}}{3 \text{ ERC}} \times \frac{2528 \text{ gal.}}{\text{irr. acre}} = 104,701 \text{ gal.}$$

Commercial Use:

$$9 \text{ ERC} \times \frac{400 \text{ gal.}}{\text{ERC}} = 3,600 \text{ gal.}$$

Industrial Use:

$$1 \text{ ERC} \times \frac{400 \text{ gal.}}{\text{ERC}} = 400 \text{ gal.}$$

Institutional Use:

$$14 \text{ ERC} \times \frac{400 \text{ gal.}}{\text{ERC}} = 5,600 \text{ gal.}$$

Parks and Cemeteries:

$$13 \text{ acres} \times \frac{2528 \text{ gal.}}{\text{acre}} = 32,864 \text{ gal.}$$

Fire Protection

$$\frac{1500 \text{ gal.}}{\text{min.}} \times \frac{2 \text{ hr.}}{\text{min.}} \times \frac{60 \text{ min.}}{1 \text{ hr.}} = 180,000 \text{ gal.}$$

Total Source Capacity Required (gal)	525,965 gal.
Current Storage Capacity (gal)	
Existing Source Capacity Surplus (gal)	474,035 gal.

Required Storage per ERC	610.67 gal./ERC
Existing Capacity (gal)	500,000 gal.
Existing Capacity (ERC)	818.78 ERC
Existing Surplus Capacity (gal)	(25,965) gal
Existing Surplus Capacity (ERC)	(42.52) ERC
New Tank Capacity	500,000 gal.
New Tank Surplus Capacity (gal)	474,035 gal.
New Tank Surplus Capacity (ERC)	776.26 ERC
New Tank Surplus Capacity (%)	95%

Distribution Capacity Analysis:

Peak Day Demand/ERC (Indoor)	0.56 gpm
Peak Day Demand/ERC (Outdoor - Assume 25%)	3.39 gpm/irrigated ac
Average Lot Size	1/3 Acre
Outdoor Watering w/Culinary	25%
Current Residential ERCs	497
Total Residential Indoor Peak Day Demand	276 gpm
Total Residential Outdoor Peak Day Demand	140 gpm
Peak Day Demand/ERC	0.84 gpm

Existing System (Pre-Improvements)		
Total ERCs	521	ERC
Average Existing Available Flow	2113.86	gpm
Total Nodes	134	nodes
Required Fire Flow	1500	gpm
Remaining Available Flow	613.86	gpm
Required Flow per ERC	0.84	gpm/ERC
Total Capacity (excluding fire flow)	733.38	ERC
Surplus Capacity	212.38	ERC

Post-Improvements System		
Total ERCs	521	ERC
Average Existing Available Flow	2599.88	gpm
Total Nodes	137	nodes
Required Fire Flow	1500	gpm
Remaining Available Flow	1099.88	gpm
Required Flow per ERC	0.84	gpm/ERC
Total Capacity (excluding fire flow)	1314.04	ERC
Surplus Capacity	793.04	ERC
New Surplus Capacity	580.66	ERC

Eastern Area (700 East) Analysis

Average Available Flow - Eastern Area (Pre-Improvements)	1178.5 gpm
Average Available Flow - Eastern Area (Post Improvements)	2536.4 gpm
Increase	1357.9
Total % Increase	115.22%
Increase to 1,500 gpm	321.5
% of Total Increase to achieve LOS	23.68%
% of Increased capacity to New Growth	76.32%

APPENDIX C:

ANNUAL USER FEE CREDIT CALCULATIONS

Growth Rate	1.50%		Impact Fee	\$ 4,464.03	
CALCULATION OF THE AVERAGE YEARS THAT NEW CONNECTIONS WILL PAY USER FEES WITHIN THE 20 YEAR PLANNING PERIOD					
Year	ERC's	New ERC's	Years Remaining in Planning Period	Total Years (Years Remaining x New ERC's)	Impact Fees Paid
2024	521	0	20	0	\$ -
2025	529	8	19	148	\$ 34,886.39
2026	537	8	18	143	\$ 35,409.69
2027	545	8	17	137	\$ 35,940.84
2028	553	8	16	131	\$ 36,479.95
2029	561	8	15	124	\$ 37,027.15
2030	570	8	14	118	\$ 37,582.55
2031	578	9	13	111	\$ 38,146.29
2032	587	9	12	104	\$ 38,718.49
2033	596	9	11	97	\$ 39,299.26
2034	605	9	10	89	\$ 39,888.75
2035	614	9	9	82	\$ 40,487.08
2036	623	9	8	74	\$ 41,094.39
2037	632	9	7	65	\$ 41,710.81
2038	642	9	6	57	\$ 42,336.47
2039	651	10	5	48	\$ 42,971.52
2040	661	10	4	39	\$ 43,616.09
2041	671	10	3	30	\$ 44,270.33
2042	681	10	2	20	\$ 44,934.39
2043	691	10	1	10	\$ 45,608.40
2044	702	10	0	0	\$ 46,292.53
		181	Total Years	1627	\$ 806,701.37

Average Years (Total Years/New ERC's)	9.01
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CALCULATION OF THE AVERAGE ANNUAL PORTION OF THE USER FEE PAID TO PLANNED PROJECTS AND THE USER FEE CREDIT

Year	ERC's	Annual Eligible Project Debt Service	Collected Impact Fees Allocated to Debt Service	Net Eligible Project Debt Service	Portion of User Fee to Planned Projects
2024	521	\$115,876.15	\$0.00	\$115,876.15	\$ 222.41
2025	529	\$115,876.15	\$34,886.39	\$80,989.75	\$ 153.15
2026	537	\$115,876.15	\$35,409.69	\$80,466.46	\$ 149.91
2027	545	\$115,876.15	\$35,940.84	\$79,935.31	\$ 146.72
2028	553	\$115,876.15	\$36,479.95	\$79,396.20	\$ 143.58
2029	561	\$115,876.15	\$37,027.15	\$78,849.00	\$ 140.48
2030	570	\$115,876.15	\$37,582.55	\$78,293.59	\$ 137.43
2031	578	\$115,876.15	\$38,146.29	\$77,729.85	\$ 134.43
2032	587	\$115,876.15	\$38,718.49	\$77,157.66	\$ 131.47
2033	596	\$115,876.15	\$39,299.26	\$76,576.88	\$ 128.55
2034	605	\$115,876.15	\$39,888.75	\$75,987.39	\$ 125.67
2035	614	\$115,876.15	\$40,487.08	\$75,389.06	\$ 122.84
2036	623	\$115,876.15	\$41,094.39	\$74,781.75	\$ 120.05
2037	632	\$115,876.15	\$41,710.81	\$74,165.34	\$ 117.30
2038	642	\$115,876.15	\$42,336.47	\$73,539.68	\$ 114.59
2039	651	\$115,876.15	\$42,971.52	\$72,904.63	\$ 111.92
2040	661	\$115,876.15	\$43,616.09	\$72,260.06	\$ 109.30
2041	671	\$115,876.15	\$44,270.33	\$71,605.82	\$ 106.71
2042	681	\$115,876.15	\$44,934.39	\$70,941.76	\$ 104.15
2043	691	\$115,876.15	\$45,608.40	\$70,267.74	\$ 101.64
2044	702	\$115,876.15	\$46,292.53	\$69,583.62	\$ 99.16
(A) Average Portion of Annual User Fee to Planned Projects					\$129.59
(B) Average Years of Payment					9.01
User Fee Credit					\$1,167.65