



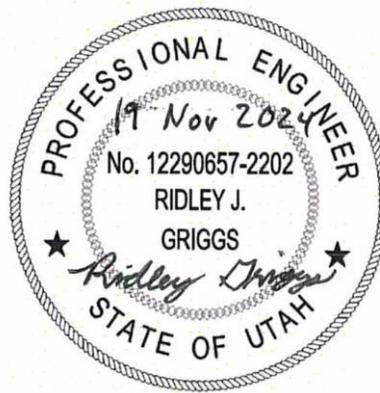
**DRINKING WATER
IMPACT FEE FACILITY PLAN AND
IMPACT FEE ANALYSIS**

(HAL Project No.: 260.59.200)

Adopted November 19, 2024

**SPRINGVILLE CITY
DRINKING WATER
IMPACT FEE ANALYSIS**

(HAL Project No.:260.59.200)



Ridley J. Griggs, P.E.

Project Manager



NOVEMBER 2024

IMPACT FEE CERTIFICATION

The Utah Impact Fee Act requires certifications for the Impact Fee Facilities Plan (IFFP) and the Impact Fee Analysis (IFA). Hansen, Allen & Luce provides these certifications with the understanding that the recommendations in the IFFP and IFA are followed by City Staff and elected officials. If all or a portion of the IFFP or IFA are modified or amended, or if assumptions presented in this analysis change substantially, this certification is no longer valid. All information provided to Hansen, Allen & Luce, Inc. is assumed to be correct, complete, and accurate.

IFFP Certification

Hansen, Allen & Luce, Inc. certifies that the Impact Fee Facilities Plan (IFFP) prepared for the drinking water system:

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. costs of 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;
 - c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement; and
3. complies in each and every relevant respect with the Impact Fees Act.

HANSEN, ALLEN & LUCE, INC.

IFA Certification

Hansen, Allen & Luce, Inc. certifies that the Impact Fee Analysis (IFA) prepared for the drinking water system:

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. costs of 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;
 - c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement;
 - d. costs with grants or other alternate sources of payment; and
3. complies in each and every relevant respect with the Impact Fees Act.

HANSEN, ALLEN & LUCE, INC.

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IMPACT FEE SUMMARY

The impact fees for the Springville drinking water system were last updated as a part of the City's 2018 – 2019 master planning project. Since that time, construction costs have risen substantially due to a number of factors, including material shortages, labor shortages, and supply chain constraints. To account for rising construction costs, Springville City commissioned this impact fee update.

The **purpose** of the Impact Fee Facility Plan (IFFP) and Impact Fee Analysis (IFA) is to comply with the requirements of the Utah Impact Fees Act by identifying demands placed on the existing Drinking Water System by new development and by identifying the means by which the City will meet these new demands. The Springville City Drinking Water System Master Plan has been used in support of this analysis. There are several growth-related capital facilities anticipated to be needed in the next 10 years, so the calculated impact fee is based on anticipated capital facility projects as well as existing excess capacity and documented historic costs.

The impact fee **service area** is the current Springville City municipal boundary, and future areas anticipated to be annexed into the city.

The existing and proposed **level of service** for the drinking water system includes the following:

Water Supply

- Peak Day Indoor Source Capacity: 260 gallons per day per equivalent residential connection (gpd/ERC)
- Indoor Source Volume: 0.30 acre-feet/ERC (Annual Demand)
- Indoor Storage Capacity: 230 Gallons/ERC
- Peak Day Outdoor Source Capacity: 12,240 gallons per day per irrigated acre
- Outdoor Source Volume: 4.0 acre-feet per irrigated acre (Annual Demand)
- Distribution Capacity: 50 pounds per square inch (psi) minimum pressure during peak day demand conditions and 30 psi minimum pressure during peak instantaneous conditions

Fire Suppression

- Minimum Fire Flow: 1,000 gpm for 2 hours, east of 400 W (120,000 gallons fire suppression storage); 1,500 gpm for 2 hours, west of 400 W (180,000 gallons fire suppression storage); 2,000 gpm at 20 psi for 2 hours, nonresidential connections (240,000 gallons fire suppression storage)
- Minimum Pressure: 20 psi residual during peak day + fire flow event

The existing system served about 20,192 equivalent residential connections at the end of 2023. Projected **growth** adds 3,150 equivalent residential connections in the next 10 years for a total of 23,342 equivalent residential connections.

The costs calculated for the capacity required for growth in the next 10 years comes from the new projects required entirely to provide capacity for new development.

The **drinking water impact fee** is calculated based on the estimated cost of projects required to support future growth. These costs were added together and divided by the number of equivalent residential connections (ERCs) that are projected to be added within the next 10 years.

Components of the proposed impact fee are presented in Table S-1. These costs represent an increase of approximately 14% as compared to the previous impact fee.

**Table S-1
Proposed Impact Fee by Component**

Component	Per Typical Residential Connection (Indoor Use)	Per Irrigated Acre
Source	\$163	\$7,650
Storage	\$735	\$10,833
Distribution	\$325	\$0
Planning	\$33	\$0
Total	\$1,256	\$18,483

SECTION 1 INTRODUCTION

1.1 Background

Springville is located in central Utah County, alongside I-15 and on the southern end of the Provo-Orem metropolitan area. Springville had an estimated population of 35,832 in July 2022 (United States Census Bureau, 2024). The primary drinking water sources for Springville are springs in Hobble Creek Canyon and wells in the City.

1.2 Purpose

The City has recognized the need to plan for increased demands on its drinking water system as a result of growth. To do so, an Impact Fee Facility Plan (IFFP) and Impact Fee Analysis (IFA) were completed to allow the City to charge an impact fee to help pay for capital projects necessary to support future growth.

The impact fees for the Springville drinking water system were last updated as a part of the City's 2018 – 2019 master planning project. Since that time, construction costs have risen substantially due to a number of factors, including material shortages, labor shortages, and supply chain constraints. To account for rising construction costs, Springville City commissioned this impact fee update.

This report identifies those items that the Utah Impact Fees Act specifically requires, including demands placed upon existing facilities by new development and the proposed means by which the municipality will meet those demands. The Drinking Water Master Plan that was prepared in 2020 was also used to support this analysis. Actual growth since the master plan has also been incorporated into this analysis. Information from the master plan was updated to characterize existing conditions. The master plan identified several growth-related projects needed within the 10-year planning window. Therefore, the calculated impact fee is based on excess capacity and documented historic costs, as well as future capital projects.

1.3 Impact Fee Collection

Impact fees enable local governments to finance public facility improvements necessary for growth, without burdening existing customers with costs that are exclusively attributable to growth.

An impact fee is a one-time charge on new development to pay for that portion of a public facility that is required to support that new development.

In order to determine the appropriate impact fee, the cost of the facilities associated with future development must be proportionately distributed. As a guideline in determining the “proportionate share”, the fee must be found to be roughly proportionate and reasonably related to the impact caused by the new development.

1.4 Master Planning

A Drinking Water System Master Plan was prepared in 2020 and is incorporated by reference into this analysis. The master plan for the City’s drinking water system is more comprehensive than the IFFP and IFA. It provides the basis for the IFFP and IFA and identifies all capital facilities required for the drinking water system inside the 20-year planning range, including maintenance, repair, replacement, and growth-related projects. This updated IFFP and IFA is also based on updated information on actual growth that has occurred since the last report was completed.

The recommendations made within the master plan are in compliance with current City policies and standard engineering practices.

A hydraulic model of the drinking water system was used to complete the Drinking Water System Master Plan. The model was used to assess existing performance, to establish a proposed level of service and to confirm the effectiveness of the proposed capital facility projects to maintain the proposed level of service over the next 10 years.

SECTION 2 SYSTEM DEMAND AND CAPACITY

2.1 General

The purpose of this section is to identify the current level of service, characterize the facilities of the existing system, and determine the remaining capacity of these facilities.

Springville's existing drinking water system is comprised of a pipe network, water storage facilities, and water sources. These facilities are found within 9 pressure zones. Figure 1-2 from the City's Drinking Water Master Plan illustrates the existing water system (at the time the master plan was published) and its service area and is included for reference in Appendix A. Since that time, some additional distribution pipelines and Spring Creek Tank #3 have been installed.

2.2 Existing Equivalent Residential Connections and Irrigated Acreage

Water demands from non-residential water users, such as commercial, industrial, or civic water users have been determined in terms of an Equivalent Residential Connection (ERC). The use of ERCs is a common engineering practice used to describe the entire system's usage based on a common unit of measurement. An ERC is equal to the average demand of one residential connection. Using ERCs for analysis is a way to allocate existing and future demands over non-residential land uses. For this analysis, all residential connections, including townhouses and apartments were equated to one ERC for indoor water demands.

Springville operates a separate pressurized irrigation system that serves some customers on the west side of the City. Customers who are not served by the pressurized irrigation system irrigate from the drinking water system. In these areas, the City considers outdoor water demand in terms of irrigated acres. For this study, it was assumed that a typical residential lot has an average irrigated area of 0.15 acres. The purpose of this value is to provide a reference for a standard residential unit in Springville. As impact fees are assessed, the planned irrigated area of the parcel should be determined and multiplied by the impact fee unit cost per irrigated acre.

The City assigns non-residential development an ERC value based on meter size.

At the end of 2023, the City was estimated to have 20,192 ERCs and 821 irrigated acres served by the drinking water system.

2.3 Level of Service

The City has established a level of service for the Drinking Water System. It establishes the sizing criteria for the City's distribution (pipelines), source, and storage facilities. Details

regarding the level of service are included in the Drinking Water System Master Plan. The level of service standards are shown below:

Level of Service

- Indoor Source Capacity: 260 gpd/ERC (Peak Day)
- Indoor Source Volume: 0.30 ac-ft/ERC (Annual Demand)
- Indoor Storage Capacity: 230 Gallons/ERC
- Outdoor Source Capacity: 12,240 gpd/irr-ac (Peak Day)
- Outdoor Source Volume: 4.0 ac-ft/irr-ac (Annual Demand)
- Outdoor Storage Capacity: 6,120 Gallons/irr-ac
- Distribution Capacity: 50 psi minimum during peak day demand conditions and 30 psi minimum during peak instantaneous conditions

Fire Suppression

- Minimum Fire Flow: 1,000 gpm for 2 hours, east of 400 W (120,000 gallons fire suppression storage): 1,500 gpm for 2 hours, west of 400 W (180,000 gallons fire suppression storage): 2,000 gpm at 20 psi for 2 hours, nonresidential connections (240,000 gallons fire suppression storage)
- Minimum Pressure: 20 psi residual during peak day + fire flow event

2.4 Methodology Used to Determine Existing System Capacity

Each component of the drinking water system was assessed a capacity in terms of gallons per minute (for peak day source), acre-feet per year (for annual source), or gallons (for storage). Demands on each component were computed by applying the level of service to the amount of ERCs and irrigated acreage served by each component. The difference between the capacity of the component and the demand on the component is the component's remaining capacity, which can be used to serve either ERCs or irrigated acres. A hydraulic model was developed for the purpose of assessing system operation and distribution capacity.

2.5 Water Source & Remaining Capacity

Springville's sources of drinking water are springs in Hobble Creek Canyon and wells in the City. Table 2-1 summarizes the information of each source and all sources total remaining capacity.

**Table 2-1
Demand on and Capacity of Existing Drinking Water Sources**

Source^{1, 2}	Available Flow (gpm)	Annual Volume (ac-ft)	Existing Demand (ERCs)	Existing Demand (irr-ac)³	Existing Demand (gpm)⁴	Remaining Capacity (gpm)
Bartholomew Springs	448	723				
Spring Canyon Springs	764	1,232				
Konold Springs	188	303				
Burt Springs	766	1,235				
200 North Well	2,400	1,935				
400 South Well #1	3,000	2,420	-	-	-	-
400 South Well #2	4,000	3,225				
900 South Well	3,000	2,419				
1000 South Well	570	460				
Canyon Road Well	1,500	1,210				
Evergreen Well	350	283				
TOTAL	16,986	15,445	20,192	821	13,323	3,663

1. Well Capacity assumes about half of the year-round flow at the given flow rate which matches the current drinking water right diversion capacity. Actual volume may be limited by demand or hydrologic constraints.
2. Spring capacity assumes the average flow of the minimum month on record (2003).
3. Existing irrigated acres are based on the intended number served by the drinking water system, consistent with the Drinking Water Master Plan.
4. Peak day demand is calculated based on a level of service basis to reflect historic peak day demands. It accounts for irrigated acres that are supposed to be served by the PI system, but still may be serviced by the drinking water system.

Because water sources have periods of time when they are not operational, Springville should plan to meet peak day demands with the largest water source (400 South Well #2) out of production. Table 2-2 shows a comparison of the available source and the system demand for peak day and average year, considering redundancy.

**Table 2-2
Summary of Source Demand and Capacity**

Demand Scenario	Demand	Capacity Considering Redundancy	Remaining Capacity
Peak Day (gpm)	13,323	12,986	-337
Average Yearly (ac-ft/yr)	10,521	12,220	1,699

A slight deficiency exists under peak day conditions when considering system redundancy. The City's master plan specifies an additional well to provide redundancy. It is assumed this well will be constructed in the near future.

2.6 Storage Facilities & Remaining Capacity

Springville currently operates eight concrete water storage tanks totaling 12.65 MG, and has recently completed the construction of an additional tank at the Lower Spring Creek site with a capacity of 3.0 MG. Table 2-3 shows the demand and capacity of each tank. Demands were calculated by applying the level of service to the ERCs served by each tank. The fire flow storage requirements were provided by the Fire Chief as per IFC.

**Table 2-3
Demand on and Capacity of Existing Drinking Water Storage**

Tank	Capacity (MG)	Existing Equalization Demand (MG)	Fire Storage (MG)	Emergency Storage (MG)	Existing Storage Demand (MG)	Remaining Capacity (MG)
Bartholomew	1.4	-	0.50	0.10	-	-
Jurg Springs	0.25		0.12	0.02		
Rotary	2.0		0.24	0.10		
Upper Spring Creek	2.0		0.24	0.05		
Lower Spring Creek 1	1.0		0	0.05		
Lower Spring Creek 2	2.0		0	0.50		
Lower Spring Creek 3	3.0		0.22	0.10		
Hobble Creek 1	2.0					
Hobble Creek 2	2.0					
Totals	15.65		11.45	1.32		

With completion of the Lower Spring Creek Tank #3, additional capacity will be available for future users.

2.7 Distribution System

Pipe diameters range from 4 inches to 36 inches, with the majority being 8 inches in diameter. The function of the larger pipes in the system is to fill the storage tanks and meet peak day and fire flow demands. Smaller pipes facilitate local distribution. Figure 1-2 of the Drinking Water Master Plan (included in Appendix A) illustrates the existing distribution pipelines (at the time the master plan was published). Since that time, some additional distribution pipelines and Spring Creek Tank #3 have been installed. A hydraulic model was used to identify areas with existing deficiencies and pipes required for future growth. Costs to fix deficiencies are not impact fee-eligible and are not considered in this report. The model was also used to identify pipes required for future growth. These projects are impact fee-eligible and are discussed further in Chapter 3.

SECTION 3 IMPACT FEE FACILITY PLAN AND ANALYSIS

3.1 General

This section relies on the data presented in the previous sections to calculate a proposed impact fee based on the cost of projects needed to support projected growth.

The costs of the drinking water system facility projects are presented. Also included in this section are the possible revenue sources that the City may consider to fund the recommended projects.

3.2 Growth Projections

The development of impact fees requires growth projections over the next ten years. Growth projections for Springville were made by incorporating the growth rate presented in the Master Plan. Total growth projections for the City through 2034 are summarized in Table 3-1. Most growth in the City is expected to occur where separate pressurized irrigation service is available, though some infill and redevelopment in eastern Springville will result in additional acreage irrigated from the drinking water system.

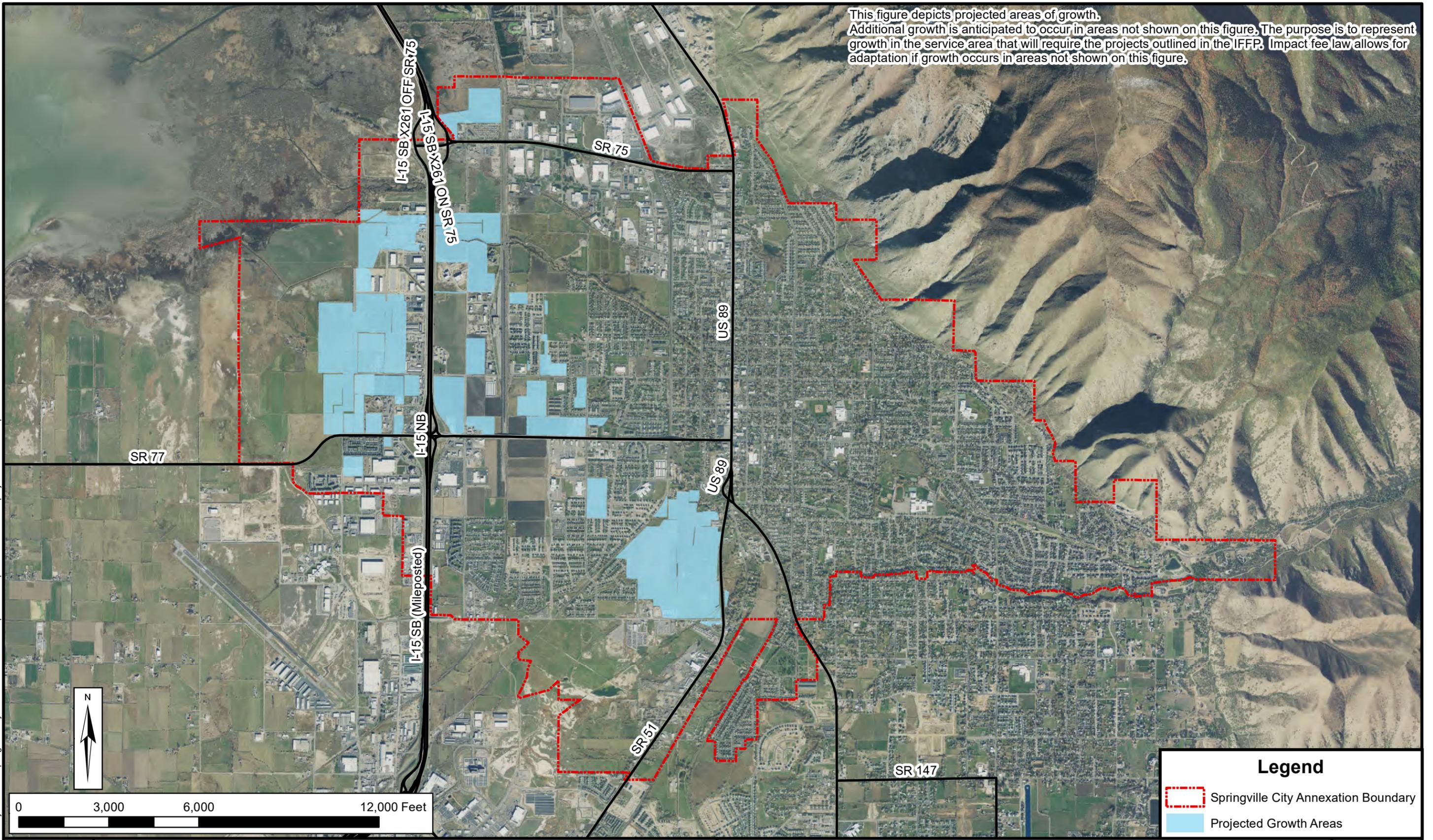
**Table 3-1
Growth Projections Over Next 10 Years**

Year	ERCs	Irrigated Acres ¹
2024	20,192	821
2025	20,520	823
2026	20,854	825
2027	21,194	827
2028	21,541	829
2029	21,895	831
2030	22,255	833
2031	22,522	835
2032	22,791	837
2033	23,064	839
2034	23,342	841
10-year Difference	+3,150	+20

1. Served by drinking water system

The existing system served about 20,192 ERCs and 821 irrigated acres at the end of 2023. Projected growth adds 3,150 ERCs and 20 irrigated acres in the next 10 years for a total of 23,342 ERCs and 841 irrigated acres. See Figure 3-1 for areas of projected growth.

This figure depicts projected areas of growth. Additional growth is anticipated to occur in areas not shown on this figure. The purpose is to represent growth in the service area that will require the projects outlined in the IFFP. Impact fee law allows for adaptation if growth occurs in areas not shown on this figure.



Legend

- Springville City Annexation Boundary
- Projected Growth Areas

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SPRINGVILLE CITY

PROJECTED 10-YEAR GROWTH AREAS

FIGURE 3-1

3.3 Cost of Existing and Future Drinking Water Facilities

Future growth can be served either by excess capacity in existing facilities or by constructing new facilities. The proposed impact fee will be based on both existing capacity and the projected cost of future construction projects.

Costs attributable to existing facilities are shown in Table 3-2. Costs were obtained from City records.

**Table 3-2
Type and Cost of Existing Facilities**

Project	Source	Distribution	Storage	Total
2008 bond improvements	\$0.00	\$2,317,205.10	\$0.00	\$2,317,205.10
400 S pipeline	\$0.00	\$1,383,929.57	\$0.00	\$1,383,929.57
Water line upsizing	\$0.00	\$311,685.03	\$0.00	\$311,685.03
1200 W pipeline	\$0.00	\$64,346.50	\$0.00	\$64,346.50
Lower Spring Creek Tank #3	\$0.00	\$0.00	\$5,310,269.00	\$5,310,269.00
Total	\$0.00	\$4,077,166.20	\$5,310,269.00	\$9,387,435.20

1. Records of costs for existing infrastructure can be found in Appendix B.

The impact fee eligible cost for each existing facility is shown below in Table 3-3. These values are based on the remaining capacity of each facility. The cost of each facility associated with its remaining capacity is attributable to growth and can be counted towards the impact fee.

Unit costs for the construction cost estimates are based on conceptual level engineering. Sources used to estimate construction costs include:

1. "Means Heavy Construction Cost Data, 2023"
2. Price quotes from equipment suppliers
3. Recent construction bids for similar work

All costs are presented in 2024 dollars.

Master plan projects are a high-level representation of the infrastructure the City will need to construct in order to address existing deficiencies or meet future growth needs. However, due to the many unknown factors at this stage of design (such as alignment and depth of pipes, utility conflicts, the cost of land and easements, construction methodology, types of equipment and material to be used, interest and inflation rates, permitting requirements, etc.), there is a significant level of uncertainty in estimated costs. Master plan-level cost estimates can typically be expected to be accurate within +/- 50% of their actual cost. Prices have been exceptionally

volatile from 2020 to 2024 due to supply chain and labor market issues, further complicating attempts to estimate future construction costs.

While detailed cost estimates for all projects are beyond the scope of this study, the intent of planning-level cost estimates is to present reasonable projections of expected project costs. This results in a computed impact fee that is reasonable and fair to both the City and the developer. This is consistent with impact fee law, which requires that the fee must be "roughly proportionate and reasonably related" to the impact caused by new development.

**Table 3-3
Impact Fee Eligible Cost of Existing Facilities**

Project	Total Cost	% To Growth	Eligible Source Cost	Eligible Distribution Cost	Eligible Storage Cost	Total Eligible Cost
2008 bond improvements	\$2,317,205.10	30.5% ¹	\$0.00	\$706,512.64	\$0.00	\$706,512.64
400 S pipeline	\$1,383,929.57	30.5% ¹	\$0.00	\$421,958.22	\$0.00	\$421,958.22
Water line upsizing	\$311,685.03	30.5% ¹	\$0.00	\$95,032.34	\$0.00	\$95,032.34
1200 W pipeline	\$64,346.50	30.5% ¹	\$0.00	\$19,619.16	\$0.00	\$19,619.16
Lower Spring Creek Tank #3	\$5,310,269.00	70.7% ²	\$0.00	\$0.00	\$3,753,068.67	\$3,753,068.67
Total	\$9,387,435.20	-	\$0.00	\$1,243,122.35	\$3,753,068.67	\$4,996,191.02

1. Capacity remaining in existing system distribution facilities was conservatively estimated as the difference between the existing ERC count (20,192) and the projected ERC count at 2060 (29,049).
2. The 2018 master plan specified that new storage capacity was needed in year 2018 (when 18,250 ERCs and 809 irrigated acres were served by the system). Equalization storage requirements from that time increased by 0.88 MG. This was calculated as the growth in ERCs (1,942) multiplied by a LOS of 230 gal/ERC and the growth in irrigated acres (12) multiplied by a LOS of 6,120 gal/irr-ac. The remaining capacity of the new 3.0 MG storage tank was calculated as $100\% - 0.88 \text{ MG} / 3.0 \text{ MG} = 70.7\%$.

Future facilities needed to support growth are shown in Table 3-4 and on Figure 4-1 in the Drinking Water Master Plan (which has been included in Appendix A for reference). Estimates for future project costs have been included in Appendix C.

**Table 3-4
Estimated Impact Fee-Eligible Cost of Future Facilities**

Project	Map ID¹	Total Cost	Percent Eligible for Impact Fee^{2,3}	Eligible Source Cost	Eligible Distribution Cost	Eligible Storage Cost	Total Eligible Cost	Associated Capacity Added
Drill and develop additional well (assumes 4,000 gpm yield)	N/A	\$3,600,000	100%	\$3,600,000	\$0	\$0	\$3,600,000	4,000 gpm
1000 N, 1750 W to W Frontage Rd. 1350 LF 12-in DIP bored under I-15.	18	\$1,072,000	60%	\$0	\$645,000	\$0	\$645,000	8,857 ERCs
Spring Creek Rd, 850 W to 950 W. 1020 LF 12-in DIP.	22	\$357,000	9%	\$0	\$34,000	\$0	\$34,000	8,857 ERCs
Center St, 2450 W to 2700 W. 1350 LF 16-in DIP.	23	\$537,000	30%	\$0	\$160,748	\$0	\$160,748	8,857 ERCs
2400/2600 W, 800 N to Center St. 3600 LF 10-in DIP.	24	\$1,140,000	12%	\$0	\$135,440	\$0	\$135,440	8,857 ERCs
500 W, Center St to 150 N. 900 LF 10-in DIP.	25	\$285,000	12%	\$0	\$33,860	\$0	\$33,860	8,857 ERCs
750 W, 750 S to 900 S. 630 LF 20-in DIP	26	\$304,000	42%	\$0	\$128,251	\$0	\$128,251	8,857 ERCs
900 S/1000S Main St to 700 W; 400 W, 900 S to 1600 S. 7,000 LF 12-in DIP	27	\$2,449,000	20%	\$0	\$495,705	\$0	\$495,705	8,857 ERCs
TOTAL		\$9,744,000	-	\$3,600,000	\$1,633,004	\$0	\$5,233,004	-

1. Refer to Figure 4-1 in the City's Drinking Water Master Plan for the project and its corresponding ID number. This figure has been included in Appendix A for reference.
2. In cases where the City is expected to upsize a developer-installed pipe, only the portion attributable to the upsize is considered impact fee eligible.
3. The need for an additional well is due to anticipated growth. See Table 2-2

Only those costs attributed to the new growth in the next 10 years can be included in the impact fee. The following sections describe the impact fee calculation for each component.

3.4 Impact Fee Unit Calculation

Currently, the City assigns non-residential development an ERC value based on meter size. A 1" water meter is assigned a value of 1 ERC. The ERC value for 1 ½" and 2" meters is scaled proportionally according to rated meter capacity. The ERC count for customers requiring meters larger than 2" is determined on a case-by-case basis based on projected water demands. The recommended impact fees for each system component are discussed below.

Source

Projected growth in the system will require the construction of an additional well. The source impact fee was calculated considering the estimated cost and estimated capacity of a future well. See Table 3-5.

**Table 3-5
Source Impact Fee Unit Calculation**

	Existing ¹	Future ²	Total
Eligible Cost	\$0.00	\$3,600,000.00	\$3,600,000.00
Capacity (gal)	-	4,000	4,000
Source impact (per gpm)³			\$900.00
Source impact (per ERC)⁴			\$162.50
Source impact (per irr-ac)⁵			\$7,650.00

1. See Tables 3-2 and 3-3
2. See Table 3-4
3. Calculated as the sum of existing and future eligible costs divided by the sum of existing and future eligible capacity
4. Calculated at a proposed level of service of 260 gpd/ERC or 0.18 gpm/ERC
5. Calculated at a proposed level of service of 8.5 gpm/irr-ac

Expected source costs by time period are listed in Table 3-6. Source facilities are expected to support growth for more than 10 years. The portion of their costs attributable to growth outside of the 10-year planning window is not impact fee-eligible.

**Table 3-6
Source Cost by Time Period**

Time Period	ERCs served	Irr-ac Served	Buy-in Cost	Growth Cost	Total Cost
Existing	20,192	821	\$0.00	\$302,975.00	\$302,975.00
Next 10 years	3,150	20	\$0.00	\$664,875.00	\$664,875.00
Beyond 10 years	5,707	19	\$0.00	\$2,632,150.00	\$2,632,150.00
Total	29,049	860	\$0.00	\$3,600,000.00	\$3,600,000.00

Storage

An additional storage tank with a capacity of 3.0 MG was recently constructed. It was constructed to provide the system additional capacity to accommodate future growth. The storage impact fee was calculated as shown in Table 3-7.

**Table 3-7
Storage Impact Fee Unit Calculation**

	Existing¹	Future²	Total
Eligible Cost	\$3,753,068.67	\$0.00	\$3,753,068.67
Capacity (gal)	2,120,270	0	2,120,270
Storage impact (per gal)³			\$1.77
Storage impact (per ERC)⁴			\$734.92
Storage impact (per irr-ac)⁵			\$10,832.95

1. See Table 3-2 and 3-3
2. See Table 3-4
3. Calculated as the sum of existing and future eligible costs divided by the sum of existing and future eligible capacity
4. Calculated at the proposed level of service of 230 gal/ERC plus 185.2 gallons of fire and emergency storage, which was computed by dividing the additional fire and emergency storage needs through 2060, totaling 2 MG as specified in the master plan, by the projected growth in ERCs from 2018 through 2060 ERC (totaling 10,800 as specified in the master plan).
5. Calculated at the proposed level of service of 6,120 gal/irr-ac

Expected storage costs by time period are listed in Table 3-8. Storage facilities are expected to support growth for more than 10 years. The portion of their costs attributable to growth outside of the 10-year planning window is not impact fee-eligible.

**Table 3-8
Storage Cost by Time Period**

Time Period	ERCs served	Irr-ac Served	Buy-in Cost	Growth Cost	Total Cost
Existing	20,192	821	\$1,557,200.33	\$0.00	\$1,557,200.33
Next 10 years	3,150	20	\$2,531,641.24	\$0.00	\$2,531,641.24
Beyond 10 years	5,707	19	\$1,221,427.43	\$0.00	\$1,221,427.43
Total	29,049	860	\$5,310,269.00	\$0.00	\$5,310,269.00

Distribution

The planned future distribution projects occur in areas that are served by the pressurized irrigation system, and as such, are expected to impose minimal irrigation demands on the drinking water system. For that reason, a separate distribution fee for irrigated acreage has not been calculated. Future acreage irrigated by the drinking water system is assumed to be served from existing pipes.

Distribution pipes installed during the next 10 years will have capacity to serve future users who connect to the system beyond the next 10 years. The portion of capacity reserved for users beyond 10 years is not impact fee-eligible. The impact fee unit cost for distribution was calculated as shown in Table 3-9.

**Table 3-9
Distribution Impact Fee Calculation**

	Existing¹	Future²	Total
Eligible Cost	\$1,243,122.35	\$1,633,003.77	\$2,876,126.12
Capacity (ERCs) ³	8,857	8,857	8,857
Distribution Impact (per ERC)⁴			\$324.73

1. See Table 3-2 and 3-3
2. See Table 3-4
3. Distribution infrastructure is sized to accommodate future users through year 2060. A remaining capacity of 8,857 ERCs was calculated as the projected year 2060 ERCs (29,049) minus ERCs existing at the beginning of year 2024 (20,192).
4. Calculated as the sum of existing and future eligible costs divided by the sum of existing and future eligible capacity.

Expected distribution costs by time period are listed in Table 3-10. Distribution facilities are expected to support growth for more than 10 years. The portion of their costs attributable to growth outside of the 10-year planning window is not impact fee-eligible.

**Table 3-10
Distribution Cost by Time Period**

Time Period	ERCs served	Buy-in Cost	Growth Cost	Total Cost
Existing	20,192	\$2,834,043.85	\$0.00	\$2,834,043.85
Next 10 years	3,150	\$442,117.58	\$580,779.26	\$1,022,896.83
Beyond 10 years	5,707	\$801,004.77	\$1,052,224.51	\$1,853,229.28
Total	29,049	\$4,077,166.20	\$1,633,003.77	\$5,710,169.97

Planning

Planning services are also needed to support growth. The City updates their master plans approximately every 5 years and their impact fee studies approximately every 3 years. Considering this schedule, and the cost of the most recent impact fee updates, a planning impact fee was calculated as shown in Table 3-11.

**Table 3-11
Planning Component of Impact Fee**

Planning Document	Cost	% of Plan Associated with Growth¹	Cost Associated with Growth	ERCs Served²	Cost per ERC
2020 Water Master Plan	\$49,500.00	60%	\$29,700.00	1,621	\$18.32
2024 IFFP and IFA	\$15,200.00	100%	\$15,200.00	1,002	\$15.17
Total	\$64,700.00	-	\$44,900.00	-	\$33.49

1. Percentages to growth for the master plan was based on a review of the scope of the plan and associated fees for tasks associated with the existing system and future growth. The IFFP and IFA are 100% associated with growth.
2. ERCs served was defined as the amount of ERCs expected to develop during the 5-year life of the master plan and the 3-year life of the IFFP and IFA, respectively.

Table 3-12 shows expected planning costs by time period.

**Table 3-12
Planning Cost by Time Period**

Time Period	ERCs Served	Buy-in Cost	Growth Cost	Total Cost
Existing	20,192	\$29,700.00	\$0.00	\$29,700.00
Next 10 Years	3,150	\$0.00	\$105,498.80	\$105,498.80
Beyond 10 Years	5,707	\$0.00	\$0.00	\$0.00
Total	29,049	\$29,700.00	\$105,498.80	\$135,198.80

3.5 Total Impact Fee Calculation

Impact fees were calculated for two types of use: (1) Indoor use, and (2) Outdoor (irrigation) use. The outdoor fee only applies to customers irrigating from the drinking water system. Customers who irrigate from the pressurized irrigation system will pay a separate impact fee for pressurized irrigation water service.

Table 3-13 is a summary of the components of the impact fee for each type of use. These costs represent an increase of approximately 14% as compared to the previous impact fee.

**Table 3-13
Total Proposed Impact Fee**

Component	Indoor (per ERC)	Outdoor (per irr-ac)
Source	\$162.50	\$7,650.00
Storage	\$734.92	\$10,832.95
Distribution ¹	\$324.73	\$0.00
Planning ²	\$33.49	\$0.00
Total	\$1,256	\$18,483

1. No future pipeline projects were upsized to account for irrigated acreage due to fire flow being the controlling influence.
2. Planning costs for irrigated acreage are associated with indoor uses and captured in the indoor portion of the fee.

Table 3-14 is a summary of the total proposed impact fee per irrigated acre.

**Table 3-14
Proposed Impact Fee Per
Typical Single-Family Connection**

Component	Indoor	Outdoor (0.15 irrigated acres¹)	Indoor and Outdoor (0.15 irrigated acres)
Source	\$162.50	\$1,147.50	\$1,310.00
Storage	\$734.92	\$1,624.94	\$2,359.86
Distribution ²	\$324.73	\$0.00	\$324.73
Planning	\$33.49	\$0.00	\$33.49
Total	\$1,256	\$2,772	\$4,028

1. Historically, the average lot in Springville has approximately 0.15 irrigated acres. This will change as higher-density development occurs but is shown for reference. Future connections should have a total impact fee assessed based on planned irrigated area.
2. No future pipeline projects were upsized to account for irrigated acreage because they occur within the service area of the PI system.

Table 3-15 shows the recommended impact fee by meter size. Users requiring larger meters will individually be assessed an ERC capacity based on projected water use.

**Table 3-15
Springville City Drinking Water
Impact Fee Based on Meter Size**

Water Meter Size	ERC	Impact Fee
¾" or 1"	1.00	\$1,256
1 ½ "	3.33	\$4,181
2"	5.33	\$6,693

For other sizes of meter, or when the values listed in Table 3-15 may not lead to an equitable result, the impact fee may alternatively be calculated based on anticipated peak day water consumption gallons per day as follows:

$$\text{Impact fee} = (\text{water consumption, gpd}) / (260 \text{ gpd/ERC}) * (\$1,256 \text{ per ERC})$$

For example, a nonresidential customer anticipated to consume 2,000 gpd on the peak day would have an impact fee calculated as follows:

$$\text{Impact fee} = (2,000 \text{ gpd}) / (260 \text{ gpd/ERC}) * (\$1,256 \text{ per ERC}) = \$9,661$$

Table 3-16 is a summary of the existing and future facility costs by Drinking Water System component and by time period. Costs attributed to the next 10 years will support projected growth inside of the 10-year impact fee planning period and are impact fee-eligible. Costs attributed to beyond 10 years are not impact fee-eligible.

**Table 3-16
Facility Cost by Time Period**

	Existing	Next 10 Years	Beyond 10 Years	Total
Source	\$302,975.00	\$664,875.00	\$2,632,150.00	\$3,600,000.00
Storage	\$1,557,200.33	\$2,531,641.24	\$1,221,427.43	\$5,310,269.00
Distribution	\$2,834,043.85	\$1,022,896.83	\$1,853,229.28	\$5,710,169.97
Planning	\$29,700.00	\$105,498.80	\$0.00	\$135,198.80
Total Cost	\$4,723,919.18	\$4,324,911.88	\$5,706,806.71	\$14,755,637.77

3.6 Revenue Options

Revenue options for the recommended projects include: general obligation bonds, revenue bonds, State/Federal grants and loans, user fees, and impact fees. Although this analysis focuses on impact fees, the City may need to consider a combination of these funding options. The following discussion describes each of these options.

General Obligation Bonds through Property Taxes

This form of debt enables the City to issue general obligation bonds for capital improvements and replacement. General Obligation (G.O.) Bonds would be used for items not typically financed through the Water Revenue Bonds (for example, the purchase of water source to ensure a sufficient water supply for the City in the future). G.O. bonds are debt instruments backed by the full faith and credit of the City which would be secured by an unconditional pledge of the City to levy assessments, charges or ad valorem taxes necessary to retire the bonds. G.O. bonds are the lowest-cost form of debt financing available to local governments and can be combined with other revenue sources such as specific fees, or special assessment charges to form a dual security through the City's revenue generating authority. These bonds are supported by the City as a whole, so the amount of debt issued for the water system is limited to a fixed percentage of the real market value for taxable property within the City. For growth related projects this type of revenue places an unfair burden on existing residents as they had previously paid for their level of service.

Revenue Bonds

This form of debt financing is also available to the City for utility related capital improvements.

Unlike G.O. bonds, revenue bonds are not backed by the City as a whole, but constitute a lien against the water service charge revenues of a Water Utility. Revenue bonds present a greater risk to the investor than do G.O. bonds, since repayment of debt depends on an adequate revenue stream, legally defensible rate structure /and sound fiscal management by the issuing jurisdiction. Due to this increased risk, revenue bonds generally require a higher interest rate than G.O. bonds, although currently interest rates are at historic lows. This type of debt also has very specific coverage requirements in the form of a reserve fund specifying an amount, usually expressed in terms of average or maximum debt service due in any future year. This debt service is required to be held as a cash reserve for annual debt service payment to the benefit of bondholders. Typically, voter approval is not required when issuing revenue bonds. For growth related projects this type of revenue places an unfair burden on existing residents as they had previously paid for their level of service.

State/Federal Grants and Loans

Historically, both local and county governments have experienced significant infrastructure funding support from state and federal government agencies in the form of block grants, direct grants in aid, interagency loans, and general revenue sharing. Federal expenditure pressures and virtual elimination of federal revenue sharing dollars are clear indicators that local government may be left to its own devices regarding infrastructure finance in general. However, state/federal grants and loans should be further investigated as a possible funding source for needed water system improvements.

It is also important to assess likely trends regarding federal / state assistance in infrastructure financing. Future trends indicate that grants will be replaced by loans through a public works revolving fund. Local governments can expect to access these revolving funds or public works trust funds by demonstrating both the need for and the ability to repay the borrowed monies, with interest. As with the revenue bonds discussed earlier, the ability of infrastructure programs to wisely manage their own finances will be a key element in evaluating whether many secondary funding sources, such as federal/state loans, will be available to the City.

Not charging impact fees or significantly lowering them could be viewed negatively from the perspective of State/Federal funding agencies. Charging a proper impact fee signals to these agencies that the community is using all possible means to finance the projects required to provide vital services their residents.

User Fees

Similar to property taxes on existing residents, user fees to pay for improvements related to new growth-related projects places an unfair burden on existing residents as they had previously paid for their level of service.

Impact Fees

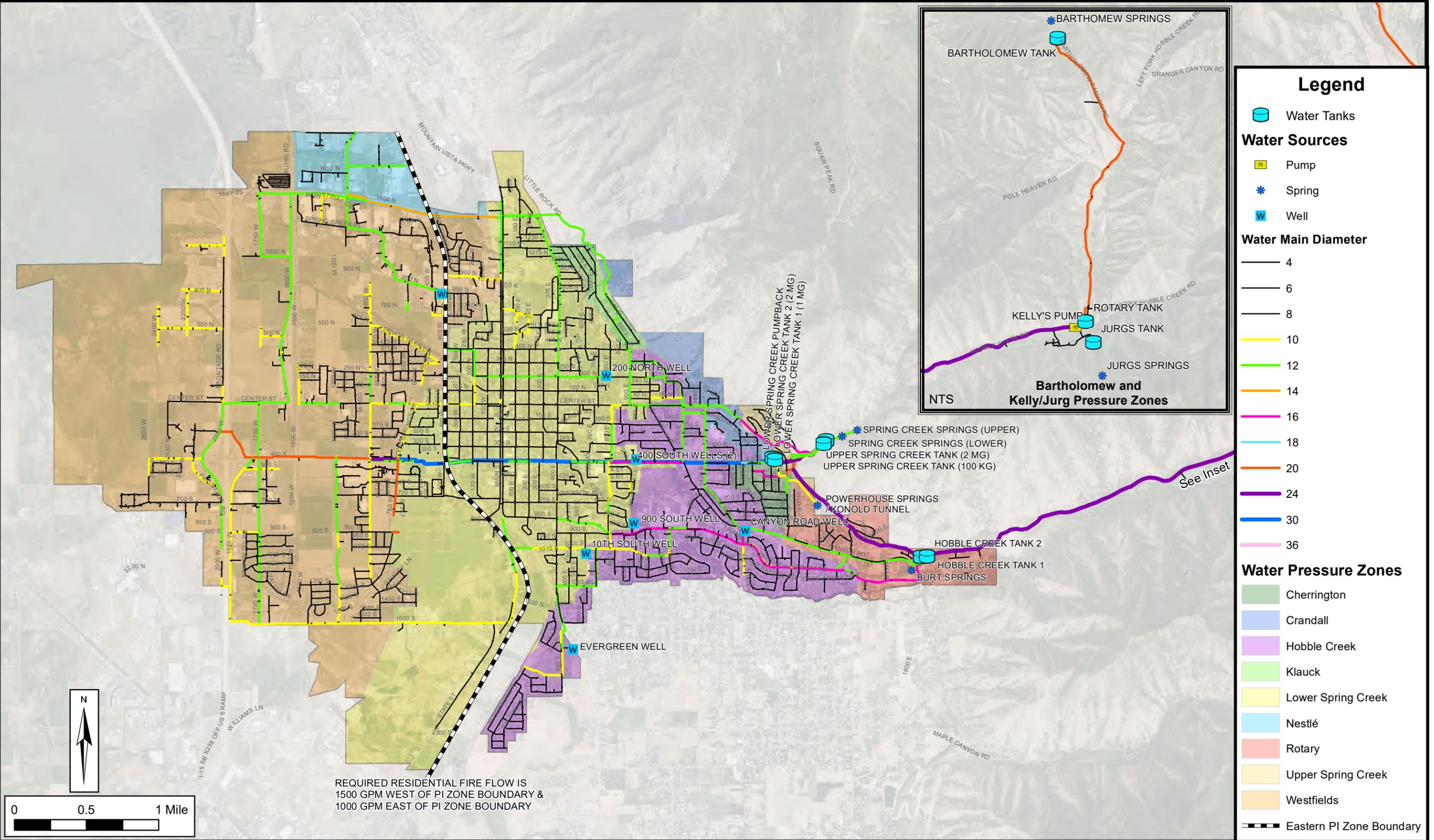
As discussed in Section 1, an impact fee is a one-time charge to a new development for the purpose of raising funds for the construction of improvements required by the new growth and to

maintain the current level of service. Impact fees in Utah are regulated by the Impact Fee Statute and substantial case law. Impact fees are a form of a development exaction that requires a fee to offset the burdens created by the development on existing municipal services. Funding the future improvements required by growth through impact fees does not place the burden on existing residents to provide funding of these new improvements.

APPENDIX A

Information from the Drinking Water Master Plan

Date: 9/27/2019
 Document Path: H:\Projects\260 - Springville City\49.100 - 2018 Water System Master Plan\GIS\Figures\Figure 1-2 DW Existing system.mxd



Legend

- Water Tanks
- Water Sources**
- Pump
- Spring
- Well
- Water Main Diameter**
- 4
- 6
- 8
- 10
- 12
- 14
- 16
- 18
- 20
- 24
- 30
- 36
- Water Pressure Zones**
- Cherrington
- Crandall
- Hobble Creek
- Klauck
- Lower Spring Creek
- Nestlé
- Rotary
- Upper Spring Creek
- Westfields
- Eastern PI Zone Boundary

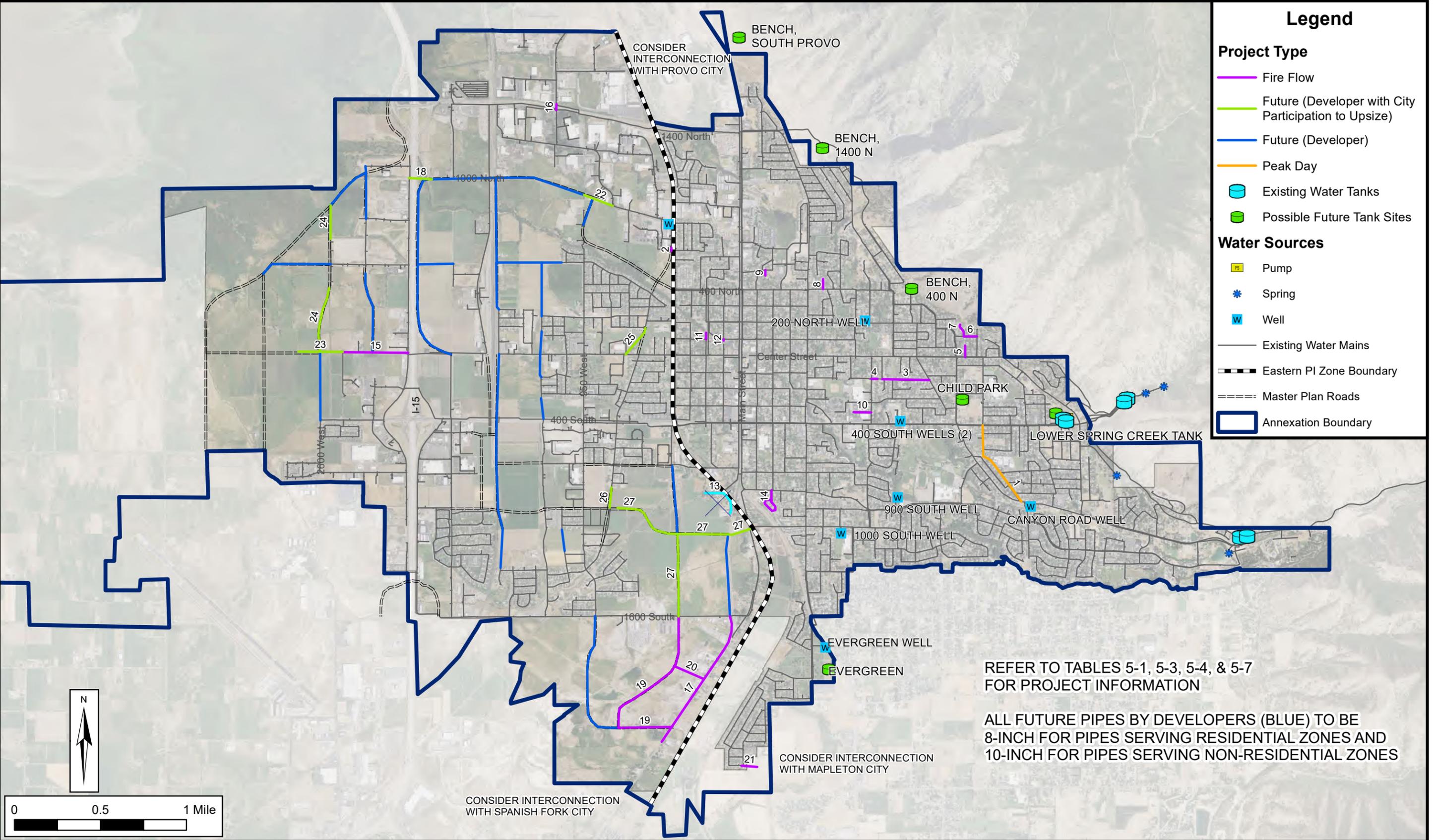
SPRINGVILLE CITY

EXISTING DRINKING WATER SYSTEM

FIGURE 1-2



Date: 9/27/2019
 Document Path: H:\Projects\260 - Springville City\100 - 2018 Water System Master Plan\GIS\Figures\Figure 2-1 Master Plan and CIP Map.mxd



Legend

Project Type

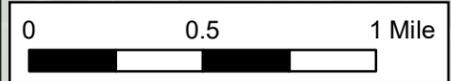
- Fire Flow
- Future (Developer with City Participation to Upsize)
- Future (Developer)
- Peak Day
- Existing Water Tanks
- Possible Future Tank Sites

Water Sources

- Pump
- Spring
- Well
- Existing Water Mains
- Eastern PI Zone Boundary
- Master Plan Roads
- Annexation Boundary

REFER TO TABLES 5-1, 5-3, 5-4, & 5-7 FOR PROJECT INFORMATION

ALL FUTURE PIPES BY DEVELOPERS (BLUE) TO BE 8-INCH FOR PIPES SERVING RESIDENTIAL ZONES AND 10-INCH FOR PIPES SERVING NON-RESIDENTIAL ZONES



SPRINGVILLE CITY

DRINKING WATER MASTER PLAN MAP AND CAPITAL FACILITIES PLAN

FIGURE 4-1



Springville City's master plans can be accessed in their entirety at the following location:

<https://www.springville.org/engineering/master-plans/>

APPENDIX B

Cost of Existing Infrastructure

Project	2018 Impact Fee Report	2018-2019	2019-2020	2020-2021	2021-2022	2022 - 2023	Totals
2008 bond improvements	\$2,317,205.10						\$2,317,205.10
400 S pipeline	\$1,383,929.57						\$1,383,929.57
Water line upsizing	\$261,340.70		\$50,344.33				\$311,685.03
1200 W pipeline	\$64,346.50						\$64,346.50
Lower Spring Creek Tank #3				\$10,269.18	\$1,054,100.99	\$4,245,898.83	\$5,310,269.00
Totals	\$4,026,821.87	\$0.00	\$50,344.33	\$10,269.18	\$1,054,100.99	\$4,245,898.83	\$9,387,435.20

APPENDIX C

Estimated Future Project Costs

**Springville City Impact Fee Facility Plan
Drinking Water Recommended Improvements
Preliminary Engineers Cost Estimates**

Item	Unit	Unit Price	Quantity	Total Price	% IF Eligible	IF Eligible Cost
DW 1. 900 S Well, 200 N Well						
Well drilling and development (4,000 gpm)	LS	\$ 1,500,000	1	\$ 1,500,000	100%	\$ 1,500,000
Well equipment and well house	LS	\$ 1,500,000	1	\$ 1,500,000	100%	\$ 1,500,000
			Total	\$ 3,000,000		
			Engineering & Admin. (10%)	\$ 300,000	100%	\$ 300,000
			Contingency (10%)	\$ 300,000	100%	\$ 300,000
			Total to 900 S Well, 200 N Well	\$ 3,600,000	100%	\$ 3,600,000
DW 18. 1000 North, 17509 West to West Frontage Road						
Install 12" water line	LF	\$ 292	1350	\$ 393,571	9%	\$ 37,342
Bore under I-15	LS	\$ 500,000	1	\$ 500,000	100%	\$ 500,000
			Total	\$ 893,571		
			Engineering & Admin. (10%)	\$ 89,357	60%	\$ 53,734
			Contingency (10%)	\$ 89,357	60%	\$ 53,734
			Total to 1000 North, 17509 West to West Frontage Road	\$ 1,072,000	60%	\$ 645,000
DW 22. Spring Creek Road, 850 West to 950 West						
Install 12" water line	LF	\$ 292	1020	\$ 297,365	9%	\$ 28,214
			Total	\$ 297,365		
			Engineering & Admin. (10%)	\$ 29,736	9%	\$ 2,821
			Contingency (10%)	\$ 29,736	9%	\$ 2,821
			Total to Spring Creek Road, 850 West to 950 West	\$ 357,000	9%	\$ 34,000
DW 23. Center Street, 2450 West to 2700 West						
Install 16" water line	LF	\$ 332	1350	\$ 447,861	30%	\$ 133,957
			Total	\$ 447,861		
			Engineering & Admin. (10%)	\$ 44,786	30%	\$ 13,396
			Contingency (10%)	\$ 44,786	30%	\$ 13,396
			Total to Center Street, 2450 West to 2700 West	\$ 537,000	30%	\$ 160,748
DW 24. 2400/2600 West, 800 North to Center Street						
Install 10" water line	LF	\$ 264	3600	\$ 949,944	12%	\$ 112,866
			Total	\$ 949,944		
			Engineering & Admin. (10%)	\$ 94,994	12%	\$ 11,287
			Contingency (10%)	\$ 94,994	12%	\$ 11,287
			Total to 2400/2600 West, 800 North to Center Street	\$ 1,140,000	12%	\$ 135,440
DW 25. 500 West, Center Street to 150 North						
Install 10" water line	LF	\$ 264	900	\$ 237,486	12%	\$ 28,217
			Total	\$ 237,486		
			Engineering & Admin. (10%)	\$ 23,749	12%	\$ 2,822
			Contingency (10%)	\$ 23,749	12%	\$ 2,822
			Total to 500 West, Center Street to 150 North	\$ 285,000	12%	\$ 33,860
DW 26. 750 West, 750 South to 900 South						
Install 20" water line	LF	\$ 402	630	\$ 253,364	42%	\$ 106,876
			Total	\$ 253,364		
			Engineering & Admin. (10%)	\$ 25,336	42%	\$ 10,688
			Contingency (10%)	\$ 25,336	42%	\$ 10,688
			Total to 750 West, 750 South to 900 South	\$ 304,000	42%	\$ 128,251
DW 27. 900 South/1000 South, Main Street to 700 West; 400 West, 900 South to 1600 South						
Install 12" water line	LF	\$ 292	7,000	\$ 2,040,740	20%	\$ 413,088
			Total	\$ 2,040,740		
			Engineering & Admin. (10%)	\$ 204,074	20%	\$ 41,309
			Contingency (10%)	\$ 204,074	20%	\$ 41,309
			Total to 900 South/1000 South, Main Street to 700 West; 400 West, 900 South to 1600 South	\$ 2,449,000	20%	\$ 495,705
			Total Costs	\$ 9,744,000	54%	\$ 5,233,004