DRINKING WATER IMPACT FEE FACILITY PLAN AND IMPACT FEE ANALYSIS

(HAL Project No.: 260.49.100)

DRAFT

MARCH 2020

SPRINGVILLE CITY

DRINKING WATER

IMPACT FEE ANALYSIS

(HAL Project No.:416.01.100)

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MARCH 2020

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IFA are modified or amended, or if assumptions presented in this analysis change substantially, this certification is no longer valid.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.

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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.

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TABLE OF CONTENTS

Page No

IMPACT FEE SUMMARY……..……...…….……iv

SECTION 1 – INTRODUCTION

1.1 Background 1-1
1.2 Purpose.....1-1
1.3 Impact Fee Collection.....1-1
1.4 Master Planning 1-1

SECTION 2 – EXISTING DRINKING WATER SYSTEM

2.1 General 2-1
2.2 Existing Equivalent Residential Connections and Irrigated Acreage 2-1
2.3 Level of Service.....2-1
2.4 Methodology Used to Determine Existing System Capacity 2-2
2.5 Water Source & Remaining Capacity 2-2
2.6 Storage Facilities & Remaining Capacity.....2-4
2.7 Distribution System 2-4

SECTION 3 – IMPACT FEE CALCULATION

3.1 General 3-1
3.2 Growth Projections..... 3-1
3.3 Cost of Future Drinking Water Facilities 3-2
3.4 Impact Fee Unit Calculation 3-4
3.5 Total Impact Fee Calculation 3-7
3.6 Revenue Options 3-9

Appendix A: Data and Calculations

Page No

LIST OF FIGURES

Figure 2-1: Existing Drinking Water System ..... After 2-1
Figure 3-1: Impact Fee Facility Plan Projects ..... After 3-2

LIST OF TABLES

Table 2-1: Existing Water Sources 2-3
Table 2-2: Source Demand and Capacity 2-3
Table 2-3: Existing Water Storage 2-4
Table 3-1: Growth Projections over Next 10 Years 3-1
Table 3-2: Cost of Existing Transmission Pipelines 3-2
Table 3-3: Estimated Cost of Future Facilities 3-3
Table 3-4: Source Cost by Time Period 3-4
Table 3-5: Storage Cost by Time Period 3-5
Table 3-6: Transmission Cost by Time Period 3-6
Table 3-7: Planning Impact Fees 3-7
Table 3-8: Total Proposed Impact Fee 3-7
Table 3-9: Total Proposed Impact Fee per Typical Single-Family Connection 3-8
Table 3-10 Springville City Drinking Water Impact Fee Based on Meter Size 3-8
Table 3-11: Facility Cost by Time Period 3-9

IMPACT FEE SUMMARY

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)
- Transmission 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 18,250 equivalent residential connections at the end of 2018. Projected **growth** adds 3,291 equivalent residential connections in the next 10 years for a total of 21,541 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 the table below, assuming an average irrigated area of 0.15 acres for a single-family home.

PROPOSED IMPACT FEE FOR TYPICAL SINGLE-FAMILY CONNECTION

Component	Indoor	Outdoor (0.15 irrigated acres)	Indoor and Outdoor (0.15 irrigated acres)
Source	$180.56	$1,275.00	$1455.56
Storage	$650.46	$1,438.20	$2,088.66
Transmission	$218.81	$0[B]	$218.81
Planning	$56.22	$112.43	$168.65
Total	**$1,106**	**$2,826**	**$3,932**

The proposed impact fee per irrigated acre is proposed in the table below.

PROPOSED IMPACT FEE PER IRRIGATED ACRE

Component	Fee per Irrigated Acre
Source	$8,500.00
Storage	$9,588.00
Transmission	$0
Planning	$749.55
Total	**$18,838**

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 33,294 in July 2017 (United States Census Bureau, 2017). 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.

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. A Drinking Water Master Plan was prepared to support this analysis. 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 conjunction with 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 of the Drinking Water System for the 20-year planning range including maintenance, repair,

replacement, and growth-related projects. 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 prepared to aid in the analyses performed to complete the Drinking Water System Master Plan. The model was used to assess existing performance, level of service, 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 11 pressure zones. Figure 2-1 illustrates the existing water system and its service area.

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.

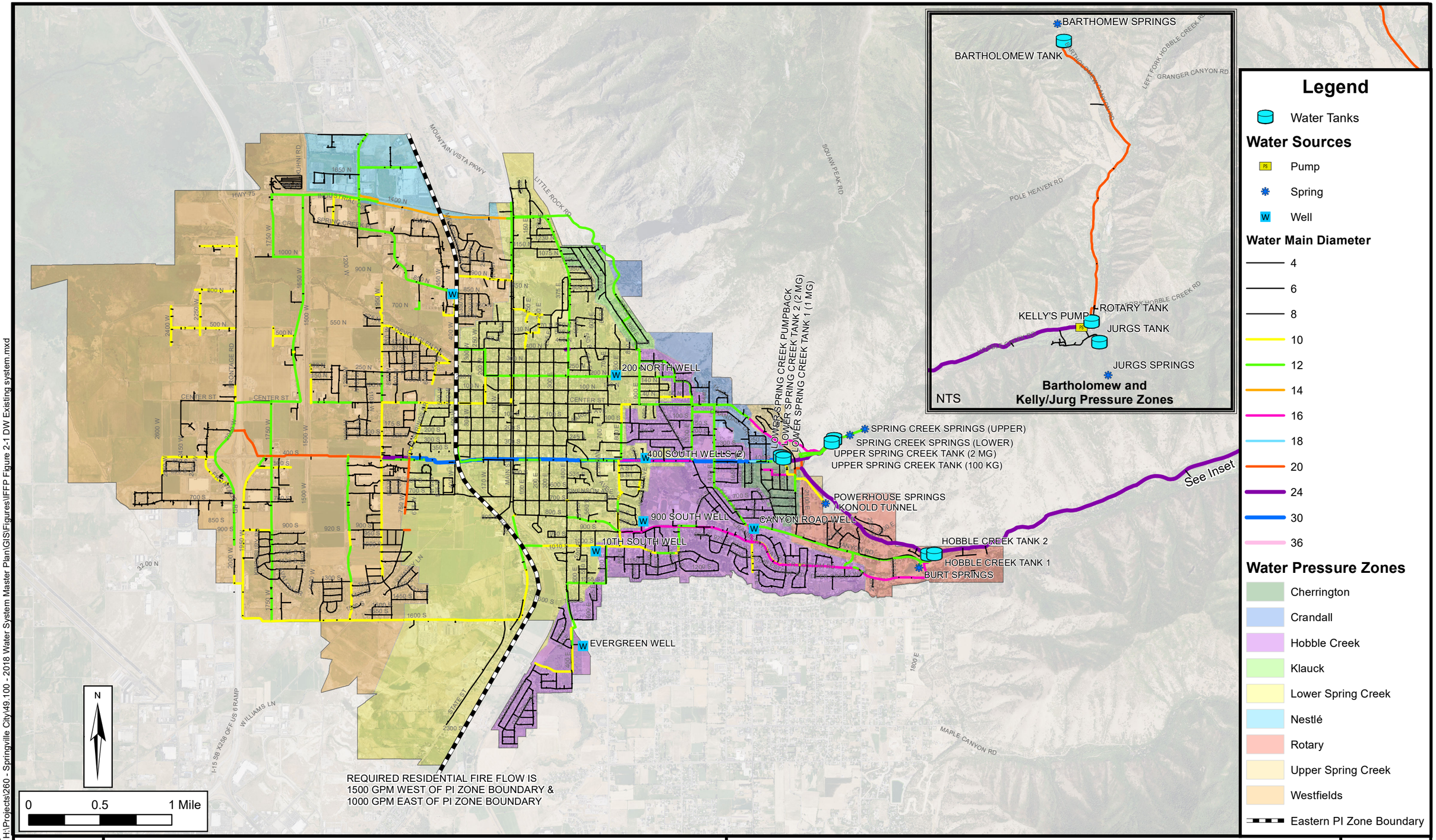
Springville operates a separate pressurized irrigation system that serves some customers on the west side of the City. Customers who are not served by the pressurized irrigation system irrigate from the drinking water system. In these areas, the City considers outdoor water demand in terms of irrigated acres. A typical residential lot has an average irrigated area of 0.15 acres.

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

At the end of 2018, the City was estimated to have 18,250 ERCs and 809 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:



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EXISTING DRINKING WATER SYSTEM

FIGURE 2-1

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/ERC (Peak Day)
- Outdoor Source Volume: 4.0 ac-ft/irr-ac (Annual Demand)
- Outdoor Storage Capacity: 6,120 Gallons/irr-ac
- Transmission 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 transmission 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.

TABLE 2-1
EXISTING WATER SOURCES

Source	Zone	Available Peak Day Flow (gpm)	Annual Volume[1] (ac-ft)
Bartholomew Springs	Rotary	448	723
Spring Canyon Springs	Upper Spring Creek	764	1,232
Konold Springs	Lower Spring Creek	188	303
Burt Springs	Hobble Creek	766	1,235
200 North Well	Lower Spring Creek	2,400	1,935
400 South Well #1	Lower Spring Creek	3,000	2,420
400 South Well #2	Lower Spring Creek	4,000	3,225
900 South Well	Hobble Creek	3,000	2,419
1000 South Well	Hobble Creek	570	460
Canyon Road Well	Hobble Creek	1,500	1,210
Evergreen Well	Hobble Creek	350	283
TOTAL		**16,986**	**15,445**

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)

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
SOURCE DEMAND AND CAPACITY

Demand Scenario	Demand	Capacity Considering Redundancy	Remaining Capacity
Peak Day (gpm)	12,870	12,986	+116
Average Yearly (ac-ft/yr)	9,890	12,220	+2,330

Peak day capacity in the system is nearly committed. No available buy-in capacity is assumed.

2.6 Storage Facilities & Remaining Capacity

Springville currently operates eight concrete water storage tanks totaling 12.65 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
EXISTING 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	0.80	0.50	0.10	1.4	0
Jurg Springs	0.25	0.11	0.12	0.02	0.25	0
Rotary	2.0	1.66	0.24	0.10	2.0	0
Upper Spring Creek	2.0	1.71	0.24	0.05	2.0	0
Lower Spring Creek 1	1.0	2.96	0	0.05	3.01	-0.01
Lower Spring Creek 2	2.0					
Hobble Creek 1	2.0	3.69	0.22	0.10	4.01	-0.01
Hobble Creek 2	2.0					
Totals	12.65	10.93	1.32	0.42	12.67	-0.02

Capacity in existing storage tanks is entirely committed. No buy-in capacity is assumed.

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 2-1 illustrates the existing distribution pipelines. 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 2029 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*
2018	18,250	809
2019	18,593	811
2020	18,944	813
2021	19,247	815
2022	19,556	817
2023	19,871	819
2024	20,192	821
2025	20,520	823
2026	20,854	825
2027	21,194	827
2028	21,541	829
10-year Difference	**+3,291**	**+20**

* Served by drinking water system

The existing system served about 18,250 ERCs and 809 irrigated acres at the end of 2018. Projected growth adds 3,291 ERCs and 20 irrigated acres in the next 10 years for a total of 21,541 ERCs and 829 irrigated acres.

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.

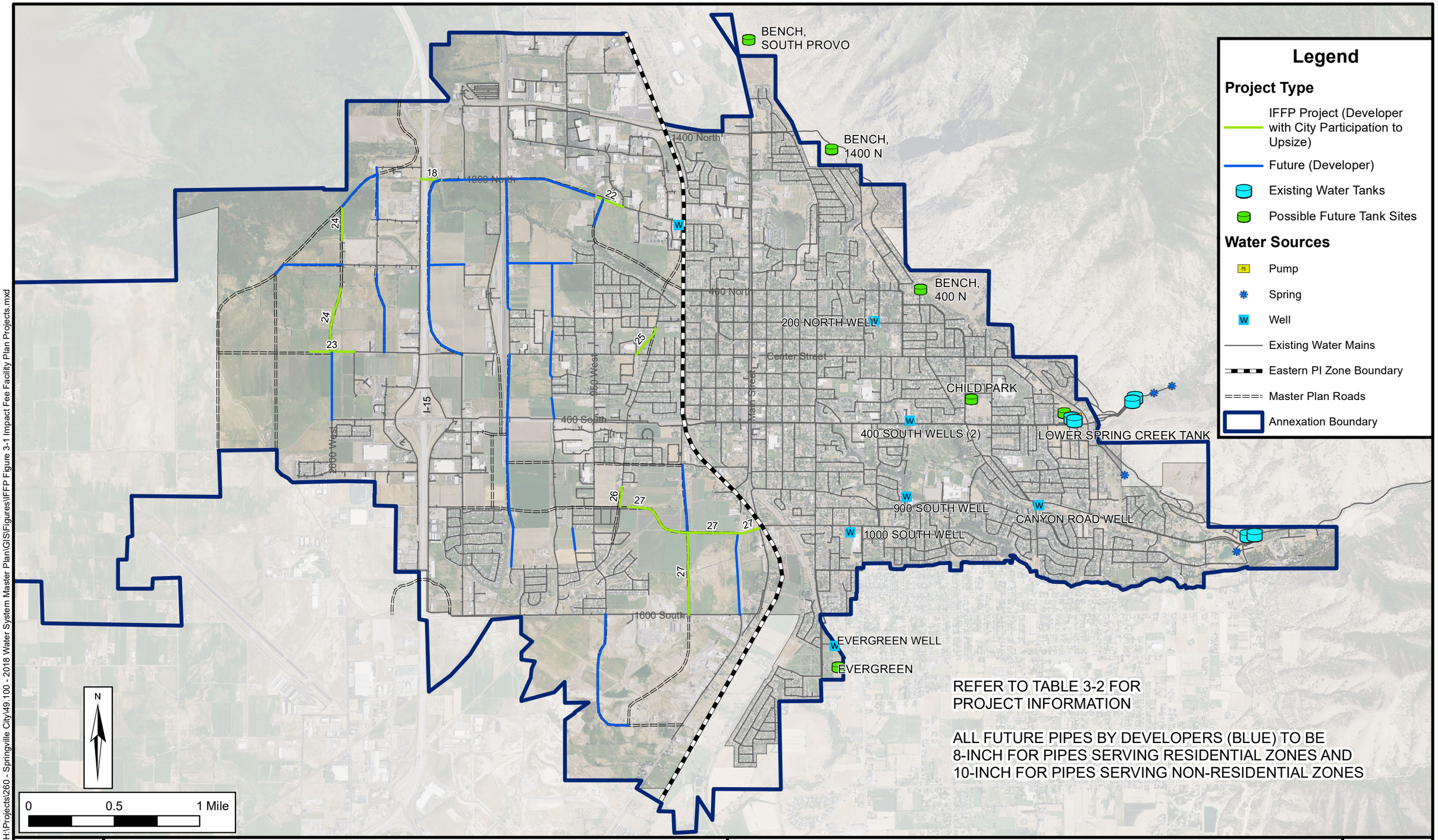
Costs attributable to existing transmission pipelines are shown in Table 3-2.

TABLE 3-2
COST OF EXISTING TRANSMISSION PIPELINES

Project	Cost
2008 bond improvements	$2,317,205.10
400 S pipeline	$1,383,929.57
Water line upsizing	$261,340.70
1200 W pipeline	$64,346.50
Total	**$4,026,821.87**

* See Appendix A for all costs

Future facilities needed to support growth are shown in Table 3-3 and on Figure 3-1. See the Drinking Water Master Plan report for more information on cost estimates.



Date: 12/3/2019
Document Path: H:\Projects\260 - Springville City\49.100 - 2018 Water System Master Plan\GIS\Figures\IFFP Figure 3-1 Impact Fee Facility Plan Projects.mxd

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IMPACT FEE FACILITY PLAN PROJECTS

FIGURE 3-1

TABLE 3-3
ESTIMATED COST OF FUTURE FACILITIES

Project	Map ID*	Source	Transmission	Storage	Planning
Construct 3 MG tank at Lower Spring Creek Site	N/A	$0	$0	$4,700,000	$0
Drill and develop additional well (assumes 2,000 gpm yield)	N/A	$2,000,000	$0	$0	$0
1000 N, 1750 W to W Frontage Rd. 1350 LF 12-in DIP bored under I-15.	18	$0	$355,000	$0	$0
Spring Creek Rd, 850 W to 950 W. 1020 LF 12-in DIP.	22	$0	$14,000	$0	$0
Center St, 2450 W to 2700 W. 1350 LF 16-in DIP.	23	$0	$100,000	$0	$0
2400/2600 W, 800 N to Center St. 3600 LF 10-in DIP.	24	$0	$73,000	$0	$0
500 W, Center St to 150 N. 900 LF 10-in DIP.	25	$0	$19,000	$0	$0
750 W, 750 S to 900 S. 630 LF 20-in DIP	26	$0	$68,000	$0	$0
900 S/1000S Main St to 700 W; 400 W, 900 S to 1600 S. 7,000 LF 12-in DIP	27	$0	$237,000	$0	$0
Planning Services	N/A	$0	$0	$0	$200,000
SUBTOTAL BY CATEGORY		$2,000,000	$866,000	$4,700,000	$200,000
TOTAL COST		**$7,766,000**			

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

The master plan shows the need for an additional well within the 10-year planning period. For the impact fee calculation, it was assumed one well would be drilled at a cost of $2,000,000 with a capacity of 2,880,000 gpd (2,000 gpm). Thus, the source impact fee becomes

$2,000,000 / 2,880,000 gpd = **$0.69 per gpd**

The calculation per ERC at the level of service of 260 gpd/ERC for indoor water then becomes

260 gpd/ERC * $0.69/gpd = **$180.56/ERC (indoor use)**

The calculation per irrigated acre for outdoor water use at the level of service of 12,240 gpd/irr-ac then becomes

12,240 gpd/irr-ac * $0.69/gpd = **$8,500.00/irr-ac (outdoor use)**

The well is expected to support growth for more than 20 years. The portion of its costs attributable to growth outside of the 10-year planning window is not impact fee-eligible. Table 3-4 describes the source cost incurred during each time period.

TABLE 3-4
SOURCE COST BY TIME PERIOD

Time Period	Growth Served[1]	Peak Day Source[2] (gpd)	Source Cost
Next 10 Years	3,291 ERCs 20.0 irr-ac	1,100,460	$764,208.33
Beyond 10 Years	6,844 ERCs	1,779,540	$1,235,791.67
Total	**10,135 ERCs 20.0 irr-ac**	**2,880,000**	**$2,000,000.00**

1. See Table 3-1. Growth beyond 10 years may include irrigated acreage.
2. Calculated according to the level of service of 260 gpd/ERC and 12,240 gpd/irr-ac

Storage

The master plan shows the need for an additional storage tank within the 10-year planning period. As specified in the master plan, the impact fee calculation assumes that a 3.0 MG tank will be constructed in the near future at an estimated cost of $4,700,000. Thus, storage impact becomes

$4,700,000 / 3,000,000 gal = **$1.57 per gallon of constructed storage**

By year 2060, the master plan specifies that there will be a total of 2,000,000 additional gallons of fire and emergency storage constructed to serve an additional 10,800 ERCs. Thus, each additional ERC will have an emergency and fire allocation of

2,000,000 gal / 10,800 ERC = **185.185 gal/ERC for fire and emergency storage**

The impact fee calculation per ERC at the level of service of 230 gpd/ERC for indoor equalization storage plus emergency and fire storage then becomes

(230 + 185.185) gal/ERC * $1.57/gal = **$650.46/ERC (indoor use)**

The calculation per ERC for outdoor water storage at the level of service of 6,120 gal/irr-ac then becomes

6,120 gal/irr-ac * $1.57/gal = **$9,588.00/irr-ac (outdoor use)**

The proposed 3 MG storage tank is expected to support growth for more than 10 years. The proportion of its costs attributable to growth outside of the 10-year planning window is not impact fee-eligible. Table 3-5 describes the source cost incurred during each time period.

TABLE 3-5
STORAGE COST BY TIME PERIOD

Time Period	Growth Served[1]	Storage Requirement[2] (gal)	Storage Cost
Next 10 Years	3,291 ERCs 20.0 irr-ac	1,488,774	$2,332,412.34
Beyond 10 Years	3,640 ERCs	1,511,226	$2,367,587.66
Total	**6,931 ERCs 20.0 irr-ac**	**3,000,000**	**$4,700,000.00**

1. See Table 3-1. Growth beyond 10 may include irrigated acreage.
2. Calculated according to the level of service of 230 gal/ERC and 6,120 gpd/irr-ac

Transmission

Springville City has paid for $4,026,821.87 in transmission improvements as shown in Table 3-2 and described in Appendix A. These improvements will serve an estimated 29,050 ERCs at year 2060. Buy-in cost for existing transmission improvements then becomes

$4,026,821.87 / 29,050 = **$138.62/ERC (transmission buy-in)**

Springville City policy requires developers to install 8-inch diameter pipes in residential areas and 10-inch diameter pipes in commercial areas at the time of development. The City will pay to upsize pipes if larger sizes are needed to meet master plan requirements.

The drinking water system is expected to grow by an additional 10,800 ERCs by 2060 (see the Master Plan report for details). Impact fee-eligible transmission projects (including upsizes) within the 10-year planning window are projected to cost $866,000 (see Table 3-2). Thus, the portion of the impact fee attributable to transmission projects becomes

$866,000 / 10,800 ERC = **$80.19/ERC (transmission growth)**

The planned future transmission 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 transmission fee for irrigated acreage has not been calculated. Future acreage irrigated by the drinking water system is assumed to be served from existing pipes.

Transmission 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 portion of this cost attributable to each time period is shown in Table 3-6.

TABLE 3-6
TRANSMISSION COST BY TIME PERIOD

Time Period	ERCs Served[1]	Buy-in Cost	Growth Cost	Total Cost
Existing	18,250	$2,529,759.01	$0	$2,529,759.01
Next 10 Years	3,291	$456,188.32	$263,889.44	$720,077.77
Beyond 10 Years	7,509	$1,040,874.54	$602,110.56	$1,642,985.10
Total	**29,050**	**$4,026,821.87**	**$866,000.00**	**$4,892,821.87**

See Table 3-1. No future transmission projects are attributable to future irrigated acreage.

Planning

Within the 10-year planning period, it is assumed that Springville will commission two planning studies of approximately $100,000 each. These studies will help the City to serve the estimated 3,291 ERCs and 20.0 irrigated coming within the next 10 years.

Planning costs will be apportioned between indoor and outdoor uses based upon the projected increase in annual water demand for each type of use. See Table 3-7.

TABLE 3-7
PLANNING IMPACT FEES

Type of use	10-year growth[1]	Annual Water Use[2] (ac-ft)	Percent of Annual Use	Planning Costs Attributable[3]	Cost per Unit[4]
Indoor	3,291 ERCs	987.3	93%	$185,008.90	$56.22/ERC
Outdoor	20.0 irr-ac	80.0	7%	$14,991.10	$749.55/irr-ac
Total	**-**	**1,067.3**	**100%**	**$200,000.00**	**-**

1. See Table 3-1
2. Calculated according to the level of service of 0.30 ac-ft/ERC and 4.0 ac-ft/irr-ac
3. Calculated as (percent of annual use) * (total planning costs)
4. Calculated as (planning costs attributable) / (10-year growth)

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 3-8 is a summary of the components of the impact fee for each type of use.

TABLE 3-8
TOTAL PROPOSED IMPACT FEE

Component	Indoor (per ERC)	Outdoor (per irr-ac)
Source	$180.56	$8,500.00
Storage	$650.46	$9,588.00
Transmission	$218.81	$0*
Planning	$56.22	$749.55
Total	**$1,106**	**$18,837.55**

* Future irrigated acres will be served from existing pipes

Table 3-9 is a summary of the total proposed impact fee per irrigated acre.

TABLE 3-9
PROPOSED IMPACT FEE PER
TYPICAL SINGLE-FAMILY CONNECTION

Component	Indoor	Outdoor (0.15 irrigated acres[A])	Indoor and Outdoor (0.15 irrigated acres)
Source	$180.56	$1,275.00	$1455.56
Storage	$650.46	$1,438.20	$2,088.66
Transmission	$218.81	$0[B]	$218.81
Planning	$56.22	$112.43	$168.65
Total	**$1,106**	**$2,826**	**$3,932**

A. The average lot in Springville has approximately 0.15 irrigated acres.
B. Future irrigated acres will be served from existing pipes

Table 3-10 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 3-10
SPRINGVILLE CITY DRINKING WATER
IMPACT FEE BASED ON METER SIZE

Water Meter Size	ERC	Indoor Impact Fee	Outdoor Impact Fee
¾" or 1"	1.00	$1,106	$18,838 per irr-ac (additive)
1 ½ "	3.33	$3,683	
2"	5.33	$5,895	

Table 3-11 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 3-11
FACILITY COST BY TIME PERIOD

	Existing	Next 10 Years	Beyond 10 Years	Total
Source	$0	$764,208.33	$1,235,791.67	$2,000,000.00
Transmission	$2,529,759.01	$720,077.77	$1,642,985.10	$4,892,821.87
Storage	$0	$2,332,412.34	$2,367,587.66	$4,700,000.00
Planning	$0	$200,000.00	$0.00	$200,000.00
Total Cost	**$2,529,759.01**	**$4,016,698.44**	**$4,205,489.89**	**$11,792,821.87**

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 finances 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.

2008 Series Bond Information

SECTION 4: EXISTING CAPACITY ANALYSIS

EXISTING SYSTEM VALUE

Based on information provided by the City, the existing system is valued as shown below. These values represent the total value of all assets related to the culinary water system. In the following analysis, the amounts that can be included in any excess capacity calculations will be identified.

TABLE 4.1: EXISTING SYSTEM VALUE

EXISTING CULINARY WATER SYSTEM VALUE	
Lands	$201,267
Building and Improvements	$51,218
System Improvements	$28,310,328
Debt Related Expense	$449,883
Vehicles and Equipment	$457,389
Water Shares	$1,199,919
Work in Progress	$654,691
Total Value	$31,324,695
Source: Springville City, Depreciation Statement ending June 30, 2013	

MANNER OF FINANCING EXISTING PUBLIC FACILITIES

The City has funded its existing capital infrastructure through a combination of different revenue sources, including general utility fund revenues and the issuance of debt. This analysis has removed all known funding related to project improvements that cannot be included in the calculation of the impact fee.

The analysis includes one piece of outstanding debt related to the system's capacity: the 2008 Amended Water and Sewer Revenue Bonds. This outstanding debt was issued for the purpose of constructing the treatment facility expansion and other sewer system improvements.

2008 AMENDED SEWER REVENUE BONDS

In 2008, the City issued $15,135,000 in Water and Sewer Revenue Bonds. These bonds were amended in 2013 to capitalize on interest savings. Approximately 61.8 percent of the proceeds were used to fund the expansion to the sewer treatment facility, with 23.2 percent used to funded collection improvements. The remaining 15 percent of the bond proceeds were used for water distribution projects. The principal and interest payments for the Amended 2008 bonds are shown in the table below. The total interest cost for the 2008 bonds is $3,008,034. The interest costs are an eligible cost that can be paid for with impact fees, as included below.

TABLE 4.2: OUTSTANDING DEBT INCLUDED IN ANALYSIS

$12,440,000 WATER & SEWER REVENUE BONDS SERIES 2008 (AMENDED) (RE-DATED: MAY 23, 2013)					
	PRINCIPAL	COUPON	INTEREST	TOTAL P+I	FISCAL TOTAL
Total	$12,440,000	2.80%	$3,008,034	$15,448,034	$15,448,034

IMPACT ON OR CONSUMPTION OF EXCESS CAPACITY

The current culinary water system consists of water rights, source improvements, storage facilities and distribution improvements. Many of these improvements have existing capacity available for future growth. As such, a buy-in component is contemplated for existing improvements.

WATER RIGHTS

According to the Master Plan and IFFP, the City anticipates it will have sufficient water rights for future culinary uses.[5] The City requires that water rights be turned over to the City as a condition of issuing a building permit on an undeveloped parcel of land (see Springville City Code 11-3-307 and 11-6-124). This is to help ensure that the City acquires sufficient water rights to meet the water needs of its residents. City code requires building permit applicants to transfer one equivalent share of Springville Irrigation Company water for each acre applicable to the building permit.

[5] Springville Culinary Water Master Plan and IFFP, p.22

Impact Fee Balances

West Fields PI Project Payment History

		FY 08-09	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	
GL #	DESCRIPTION	6/30/2009	6/30/2010	6/30/2011	6/30/2012	6/30/2013	6/30/2014	6/30/2015	6/30/2016	6/30/2017	6/30/2018	6/30/2019	6/30/2020	Total
	400 S Pipeline - 950 W to 1750 W	$ 730,840.30	$ 653,089.27	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,383,929.57
	Water line upsizing	$ -	$ 71,000.00	$ 6,510.00	$ -	$ 11,021.09	$ 12,863.61	$ -	$ -			$ 159,946.00	$ -	$ 261,340.70
	1200 W water line	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	64346.5	$ -	$ 64,346.50
	Totals	**$ 730,840.30**	**$ 724,089.27**	**$ 6,510.00**	**$ -**	**$ 11,021.09**	**$ 12,863.61**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 224,292.50**	**$ -**	**$ 1,709,616.77**

NOTE:

Expenses are taken from City records