



**PRESSURIZED IRRIGATION WATER
IMPACT FEE FACILITY PLAN
AND IMPACT FEE ANALYSIS**

(HAL Project No.: 415.02.100)

Adopted January 19, 2021

SANTAQUIN CITY

PRESSURIZED IRRIGATION WATER IMPACT FEE FACILITY PLAN AND IMPACT FEE ANALYSIS

(HAL Project No.: 415.03.100)



Steven C. Jones, P.E.
Project Manager



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Santaquin City Government

Kirk Hunsaker, Mayor
Nicholas Miller, Councilperson
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Dave Hathaway, Councilperson

Santaquin City Staff

Norm Beagley, Assistant City Manager/Engineer
Jon Lundell, City Engineer
Benjamin Reeves, City Manager
Jason Callaway, Public Works Operations Manager
Shannon Hoffman, Admin Service Director/Treasurer
Aaron Shirley, Finance Director/Recorder

Hansen, Allen & Luce, Inc.

Steven C. Jones, P.E., Vice President, Project Manager
Richard M. Noble, Vice President
Ridley J. Griggs, Staff Engineer

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IFA are modified or amended, or if assumptions presented in this analysis change substantially, this certification is no longer valid.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

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.

IMPACT FEE SUMMARY

PURPOSE OF STUDY

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 pressurized irrigation water system by new development and by identifying the means by which the City will meet these new demands. The Santaquin City Pressurized Irrigation 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 pressurized irrigation water system service area, which includes the current city boundary and potential expansion areas as identified in the City's Pressurized Irrigation Water Master Plan.

LEVEL OF SERVICE

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

Level of Service

- Peak Day Source Capacity: 8.0 gallons per minute per irrigated acre (gpm/irr-ac)
- Annual Source Volume: 4.0 acre-feet/irr-ac
- Storage Capacity: 9,200 Gallons/irr-ac
- Distribution Capacity: 30 psi minimum during peak instantaneous conditions

IMPACT FEE CALCULATION

The existing system served about 570 irrigated acres at the beginning of 2020. Projected **growth** adds 150 irrigated acres in the next 10 years for a total of 720 irrigated acres.

The **pressurized irrigation water impact fee** is calculated based on the buy-in cost for facilities which have capacity remaining and the estimated cost of projects required to support future growth. These costs were added together and divided by the number of irrigable acres that is projected to be added within the next 10 years.

Components of the impact fee are presented in the table below. The cost for a typical single-family connection (assuming 0.25 irrigable acres per connection) is also included. For lots with more or less than 0.25 irrigable acres, Santaquin City will charge impact fees on a per-irrigable-area basis.

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

Component	Per Irrigable Acre	Per Single Family Connection
Source	\$6,206.90	\$1,551.73
Storage	\$4,352.79	\$1,088.20
Distribution	\$5,357.39	\$1,339.35
Planning	\$206.13	\$51.53
Facilities	\$367.73	\$91.93
Total	\$16,491	\$4,123

For lots with more or less than 0.25 irrigable acres, Santaquin City will charge impact fees on a per-irrigable-area basis, as shown in Table S-2.

**Table S-2
Proposed Area-Based Impact Fee**

Fee (per irrigable acre)	\$16,491
Square feet per acre	43,560
Fee (per square foot)	\$0.3786

CHAPTER 1 INTRODUCTION

PURPOSE AND SCOPE

Santaquin City is experiencing significant growth. To ensure availability of funds for growth-related infrastructure projects, an Impact Fee Facility Plan (IFFP) and Impact Fee Analysis (IFA) were commissioned by the City.

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.

IMPACT FEE COLLECTION

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. 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.

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.

MASTER PLANNING

A Pressurized Irrigation Water System Master Plan was prepared in conjunction with this analysis. The master plan is incorporated by reference into this analysis.

The master plan for the City’s pressurized irrigation water system is more comprehensive than the IFFP and IFA. It provides the basis for the IFA as well as identifies all capital facilities required of the pressurized irrigation 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 pressurized irrigation water system was prepared to aid in the analyses performed to complete the Pressurized Irrigation 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.

CHAPTER 2 SYSTEM DEMAND AND CAPACITY

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.

Santaquin's existing pressurized irrigation water system is comprised of a pipe network, water storage facilities, and water sources. These facilities are found within 6 pressure zones. Figure 2-1 illustrates the existing water system and its service area.

EXISTING IRRIGABLE ACREAGE

Water demands in the pressurized irrigation water system have been determined in terms of irrigable acreage (irr-ac). The use of irrigable acreage is a common engineering practice used to describe the entire system's usage based on a common unit of measurement. Using irrigable acreage for analysis is a way to allocate existing and future demands over many different types of land use.

At the end of 2019, the City was estimated to have 570 irrigable acres served by the pressurized irrigation water system.

LEVEL OF SERVICE

The City has established a level of service for the pressurized irrigation water system. It establishes the sizing criteria for the City's distribution (pipelines), source, storage facilities, and water rights. The level of service standards are shown below:

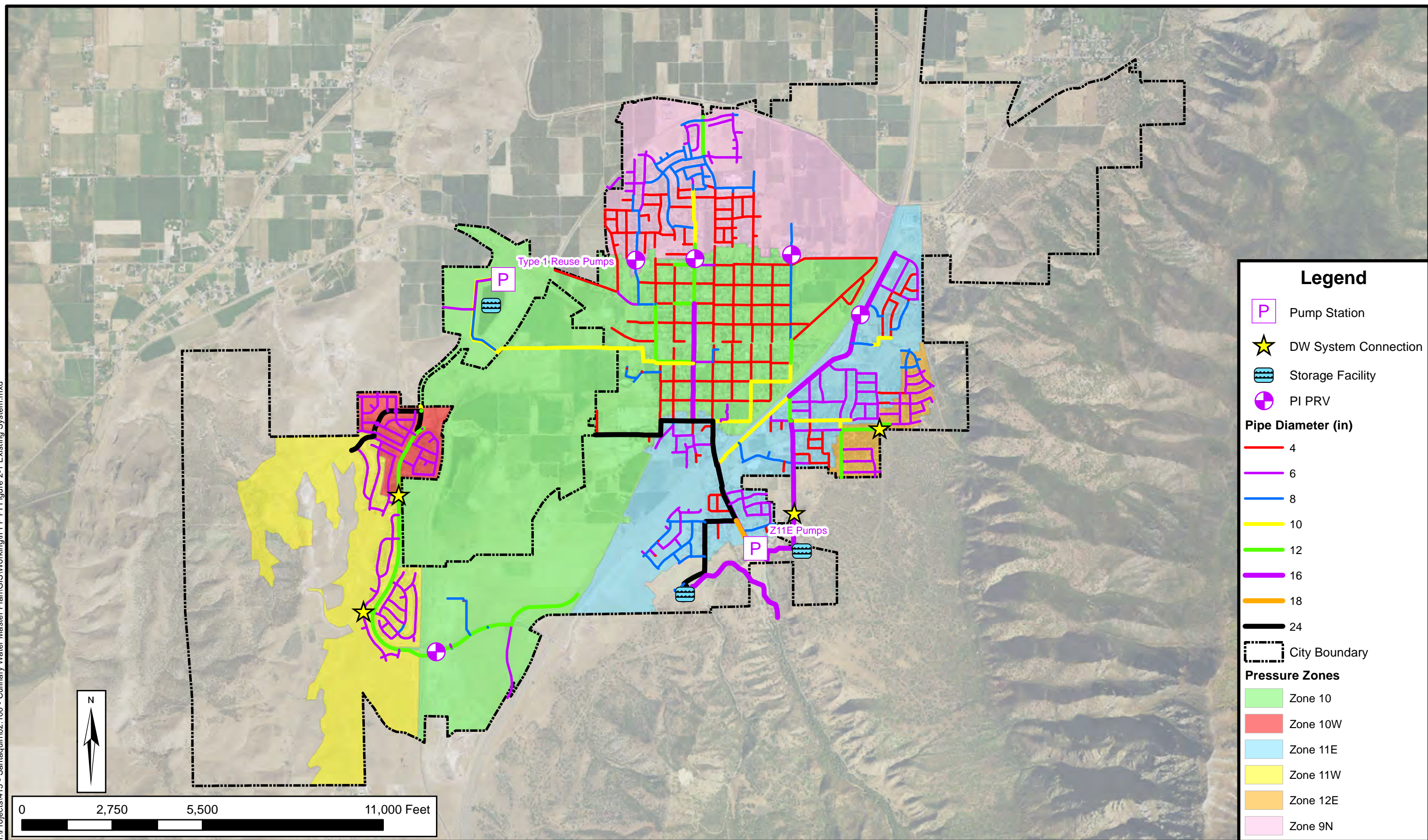
Level of Service

- Peak Day Source Capacity: 8.0 gallons per minute per irrigable acre (gpm/irr-ac)
- Annual Source Volume: 4.0 acre-feet/irr-ac
- Storage Capacity: 9,200 Gallons/irr-ac
- Distribution Capacity: 30 psi minimum pressure during peak instantaneous conditions

METHODOLOGY USED TO DETERMINE EXISTING SYSTEM CAPACITY

Each component of the pressurized irrigation 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 irrigable 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 additional irrigable acreage. A hydraulic model was developed for the purpose of assessing system operation and distribution capacity.

Date: 9/11/2020
Document Path: H:\Projects\415 - Santaquin\02.100 - Culinary Water Master Plan\GIS\Working\FFP PI Figure 2-1 Existing System.mxd



Legend

- Pump Station
- DW System Connection
- Storage Facility
- PI PRV

Pipe Diameter (in)

- 4
- 6
- 8
- 10
- 12
- 16
- 18
- 24

City Boundary

- City Boundary

Pressure Zones

- Zone 10
- Zone 10W
- Zone 11E
- Zone 11W
- Zone 12E
- Zone 9N



SANTAQUIN PRESSURIZED IRRIGATION IMPACT FEE FACILITIES PLAN

EXISTING PRESSURIZED IRRIGATION SYSTEM

FIGURE
2-1

WATER SOURCE AND REMAINING CAPACITY

Pressurized irrigation water sources in Santaquin include Summit Creek Irrigation Company, springs in Santaquin Canyon, the Type 1 reuse pond, and the drinking water system. These sources are described in Table 2-1.

**Table 2-1
Existing Pressurized Irrigation Water Sources**

Source	Pressure Zone(s)	Physical Flow Capacity (gpm)	Peak Day Planning Capacity (gpm)	Annual Flow Capacity (ac-ft)
Center Street Well ¹	10	560	490	390
Drinking Water System ²	10W	392	190	140
Drinking Water System ²	11W	2,450	1,170	180
Drinking Water System ²	12E	1,560	750	120
Drinking Water System ²	11E	900	700	570
Springs 2-5 bypass ³	10	900	0	0
Spring 1	10	200	75	60
SCIC Wells ⁴	10	1,300	575	470
SCIC Stream ⁴	10	3,000		
Type 1 Reuse Ponds ^{1,5}	10	800	700	490
Total			4,650	2,420
Demand at Level of Service			4,560	2,280
Capacity Remaining			+90	+140

1. Assumes that the pump runs 21 hours per day. Center Street Well is a drinking water source, but is listed here because it is generally used in the PI system.
2. Meters were assumed to be at physical capacity when velocity through the meter vault pipes reaches 10 ft/sec. Annual capacity is limited to the demand currently served in these zones. Peak day planning capacity was defined as the physical capacity divided by a diurnal peaking factor of 2.1. Annual capacity was defined as the current level of service demand within the zone served or the available amount, whichever is less.
3. Because the Springs bypass delivers excess drinking water to the PI system, its capacity is included in the capacity listed for the drinking water system in Zone 11E.
4. The City owns 666.5 shares in SCIC. The City reports a low-year flow rate of 0.7 ac-ft/share over a 184-day irrigation season (575 gpm and 470 ac-ft/yr).
5. 490 ac-ft of Type 1 water was used in 2019. This value is expected to increase as the City grows.

When considering excess capacity in the drinking water system, there is a small amount of excess capacity remaining in the pressurized irrigation water system for both peak day and annual flow capacity. However, this excess capacity will eventually be needed within the drinking water system, and will not be available for use within the pressurized irrigation water system.

Table 2-2 summarizes the capacity of the existing pressurized irrigation water pump stations.

**Table 2-2
Existing Pressurized Irrigation Water Pump Stations**

Name	From	To Zone	Pumps	Rated Capacity	Peak Day Demand (gpm)	Surplus (+) or Deficit (-)
400 N 200 W Booster	SCIC	10	2 @ 1,300 gpm	1,300 gpm	N/A ¹	N/A ¹
Canyon Road Booster	Zone 10	11E	2 @ 2,500 gpm	2,500 gpm	920	+1,580
Water Reuse Booster	Storage Ponds	10	2 @ 800 gpm	800 gpm	N/A ¹	N/A ¹

1. The 400 N 200 W booster and the Type 1 reuse booster are sources to the system, and thus were not individually evaluated for capacity, but were evaluated as part of the total system source capacity.

STORAGE FACILITIES AND REMAINING CAPACITY

Santaquin currently operates two storage facilities totaling 45.0 ac-ft. Table 2-3 shows the demand and capacity of each storage facility. Demands were calculated by applying the level of service to the irrigable acreage served by each tank.

**Table 2-3
Existing Storage Capacity**

Facility	Zone	Total Capacity (ac-ft)	Equalization Capacity (ac-ft)	Requirement (ac-ft)	Excess Capacity (ac-ft)
Ahlin Pond ¹	9N	41.5	19.5	9.32	+10.18
	10				
None ²	10W	0	0	1.13	-1.13
None ²	11W	0	0	1.55	-1.55
Z11E PI Tank	11E	10.0	10.0	3.25	+6.75
None ²	12E	0	0	0.85	-0.85
Total		51.5	29.5	16.10	+13.4

1. The top 7 feet of Ahlin pond will be used for equalization capacity, with the remainder required to support aquatic life and recreation. Listed equalization capacity includes only the top 7 feet. Ahlin Pond is located in Zone 10, but supplies Zone 9N through PRVs.
2. Storage capacity for Zones 10W, 11W, and 12E is currently provided in the drinking water system.

While Zones 9N, 10, and 11E have excess capacity remaining, the other zones currently have a deficit which is supported using excess capacity in the drinking water system. However, this capacity will eventually be needed in the drinking water system.

DISTRIBUTION SYSTEM

Pipe diameters range from 4 inches to 24 inches, with the majority being 6 and 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. Deficiencies are described in Chapter 5 of the Master Plan report. Costs to fix these 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.

OPERATIONS FACILITY

In 2016, Santaquin City constructed a public works operations facility to support the operation and maintenance of the City's drinking water, pressurized irrigation water, sanitary sewer, and street systems.

CHAPTER 3 IMPACT FEE FACILITY PLAN AND ANALYSIS

This section relies on the data presented in the previous sections to calculate a proposed impact fee based on an appropriate buy-in cost of available existing excess capacity previously purchased by the City, and the cost of projects needed to support projected growth.

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

GROWTH PROJECTIONS

The development of impact fees requires growth projections over the next ten years. Growth projections for Santaquin 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.

**Table 3-1
Growth Projections**

Year	Irrigable Acreage
2020	570
2021	584
2022	597
2023	611
2024	626
2025	641
2026	656
2027	672
2028	687
2029	704
2030	720
10-year Difference	+150

The existing system served about 570 irrigable acres at the end of 2019. Projected growth adds 150 irrigable acres in the next 10 years for a total of 720 irrigable acres.

COST OF EXISTING FACILITIES

This section contains a discussion of the excess capacity remaining within existing facilities, as well as the portion of the cost of those facilities that is eligible to be repaid using impact fees. Historic costs were obtained from the City's 2013 Pressure Irrigation System Impact Fee Facilities Plan (JUB, 2013) and from Santaquin City Records.

Source Facilities

Capacity in existing source facilities that has not been consumed by existing users is eligible to be reimbursed by impact fees. The impact fee-eligible cost of existing source facilities is summarized in table 3-2.

**Table 3-2
Impact Fee Eligible Cost of Existing Source Facilities**

Project	Cost	Funded by Santaquin (%)	Capacity Remaining (%)	Impact Fee Eligible Cost
Zone 11E PI Pump Station	\$1,112,903.04	100%	63% ¹	\$703,354.72
Springs 2-5 overflow bypass	\$16,004.88	100%	0% ²	\$0
Zone 11W backflow preventer	\$50,102.07	100%	69% ³	\$34,686.05
Totals	\$1,179,009.99	-	-	\$738,040.77

1. See Table 2-2.
2. Capacity from the overflow bypass is assumed to be loaned from the drinking water system.
3. Remaining capacity was calculated using the peak day capacity listed in Table 2-1 as compared to the peak day demand in the zone (see Table 3-3 of the Pressurized Irrigation Water Master Plan).

Storage Facilities

Capacity in existing storage facilities that has not been consumed by existing users is eligible to be reimbursed by impact fees. The impact fee-eligible cost of existing storage facilities is summarized in table 3-3.

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

Project	Cost	Funded by Santaquin (%)	Capacity Remaining² (%)	Impact Fee Eligible Cost
Ahlin Pond	\$926,066.12	59% ¹	25%	\$227,165.13
Zone 11E PI Tank	\$2,048,327.11	100%	68%	\$1,382,620.80
Totals	\$2,974,393.23	-	-	\$1,609,785.93

1. A portion of the construction of Ahlin pond was funded by a CUP grant.
2. Calculated capacity remaining is based on capacity in the facility and demands placed upon it by existing customers. See Table 2-3.

Distribution Facilities

Capacity in existing distribution facilities that has not been consumed by existing users is eligible to be reimbursed by impact fees. The impact fee-eligible cost of existing distribution facilities is summarized in Table 3-4.

**Table 3-4
Impact Fee Eligible Cost of Existing Distribution Facilities**

Project	Cost	Funded by Santaquin (%)	Capacity Remaining² (%)	Impact Fee Eligible Cost
Series 2012 Bonds Pipelines	\$7,399,224	59% ¹	67%	\$2,918,821.79
Harvest View Drive Pipeline	\$82,100.00	100%	67%	\$54,892.44
Summit Ridge 12" PRV	\$19,869.70	100%	67%	\$13,284.97
Totals	\$7,501,193.70	-	67%	\$2,986,999.21

1. A portion of the construction of the distribution system was funded by a CUP grant.
2. Capacity remaining in existing system distribution facilities was conservatively estimated as the difference between the existing irrigable acreage (570 irr-ac) and the projected irrigable acreage at 2060 (1,720 irr-ac).

Operations Facility

Because the operations facility is a necessary component of the pressurized irrigation water system, the portion of its cost attributable to new development is eligible to be reimbursed by impact fees. The cost of the existing operations facility attributable to the pressurized irrigation water system is summarized in Table 3-5.

**Table 3-5
Cost of Existing Operations Facility**

Project	Cost	Funded by Santaquin (%)	Attributable to PI System (%)	Cost Attributable to PI System
Totals	\$2,530,000	100%	25%¹	\$632,500

1. 25% of construction costs are considered attributable to the pressurized irrigation water system.

COST OF FUTURE FACILITIES

The facilities and costs presented in Table 3-6 and shown on Figure 3-1 are proposed projects essential to maintain the current level of service while accommodating future growth within the next 10 years. The facility sizing for the future proposed projects was based on the proposed level of service with growth projections provided by the City and hydraulic modeling. The proposed impact fee will be based both on costs of existing projects and the projected cost of future construction projects. Detailed information on these projects and their estimated cost is included in the City's pressurized irrigation water master plan report.

**Table 3-6
Estimated Cost of Future Facilities**

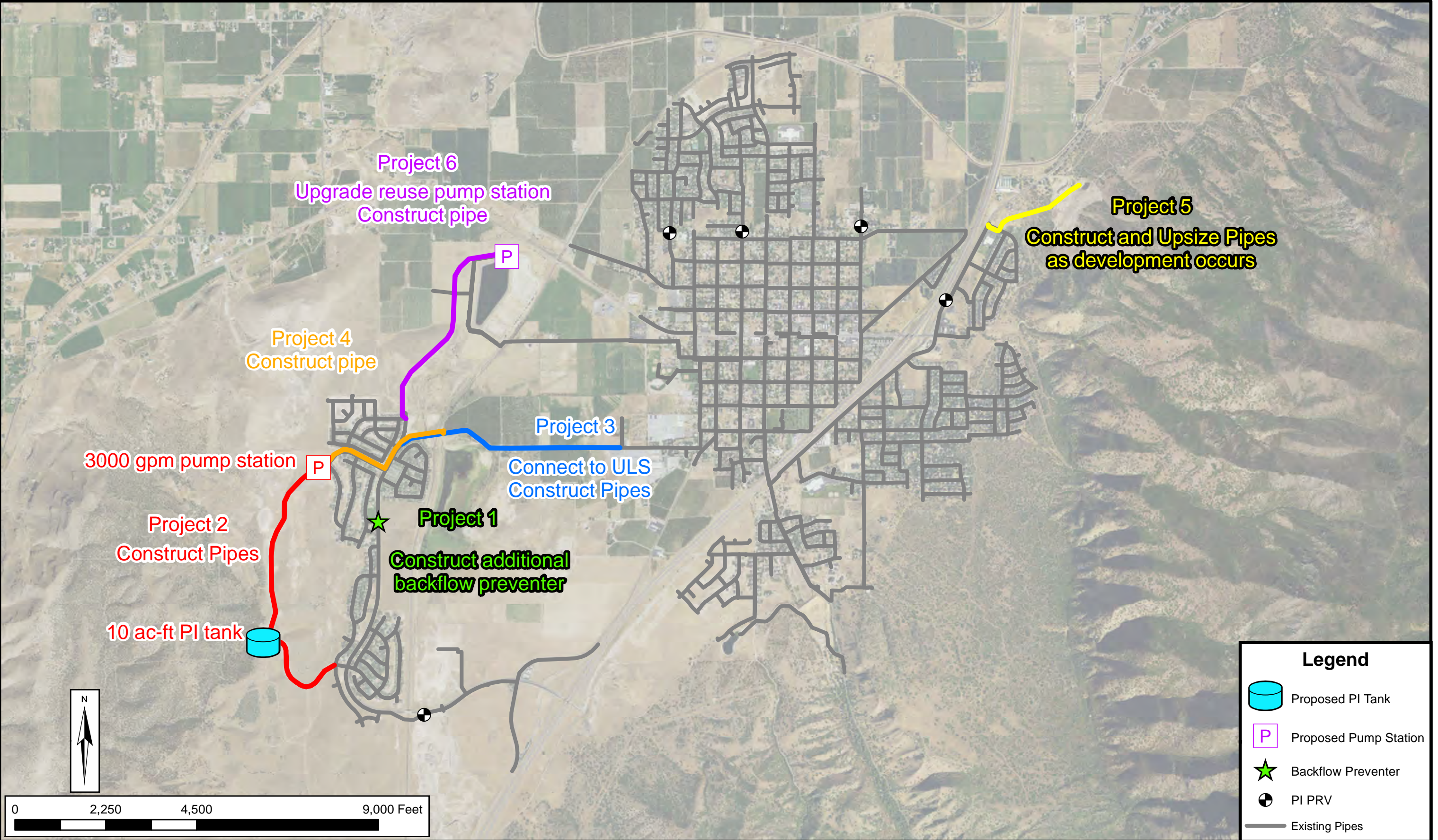
Project	Map ID*	Source	Distribution	Storage	Total	Capacity Added ¹
Zone 10W Backflow Preventer	1	\$84,000	\$0	\$0	\$84,000	980 gpm source
Zone 11W System Expansion	2	\$900,000	\$1,507,000	\$2,542,000	\$4,949,000	3,000 gpm pumping 10 ac-ft storage Distribution ¹
Zone 10 ULS Expansion	3	\$798,000	\$798,000	\$0	\$1,596,000	3,000 gpm source Distribution ¹
Zone 11W ULS Expansion	4	\$0	\$687,000	\$0	\$687,000	Distribution ¹
Zone 11E Distribution	5	\$0	\$182,000	\$0	\$182,000	Distribution ¹
Upgrade reuse pump station	6	\$1,489,000	\$0	\$0	\$1,489,000	500 gpm source
Total		\$3,271,000	\$3,174,000	\$2,542,000	\$8,987,000	Distribution 4,480 gpm source 3,000 gpm pumping 10 ac-ft storage

1. Transmission capacity for each pipeline is not explicitly accounted for in this table.

IMPACT FEE UNIT CALCULATION

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.

Date: 9/11/2020
Document Path: H:\Projects\415 - Santaquin\03.100 - Pressure Irrigation Master Plan\GIS\Working\IFFP PI Figure 3-1 CFP 0-10 Year Projects.mxd



**SANTAQUIN PRESSURIZED IRRIGATION
IMPACT FEE FACILITY PLAN**

**RECOMMENDED CAPITAL PROJECTS
0 - 10 YEAR TIMEFRAME**

**FIGURE
3-1**

Source

Projected growth in the system will require the construction of a new PI pump station in Zone 11W, a turnout from the planned future ULS pipeline, and pipelines to convey the source to the system. The source impact fee was calculated by combining the available buy-in capacity and cost of existing source (see Table 3-2) with the capacity and projected cost of the planned future sources (see Table 3-5). This calculation is shown in Table 3-7.

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

	Sources			Pump Stations		
	Existing ¹	Future ²	Total	Existing ³	Future ²	Total
Eligible Cost	\$34,686.05	\$2,731,000	\$2,405,686.05	\$703,354.72	\$900,000	\$1,603,354.72
Capacity (gpm)	1,170	4,480	5,650	1,580	3,000	4,580
Source impact (per gpm) ⁴ :			\$425.79	Pump Impact (per gpm) ⁴ :		\$350.08
Source impact (per irr-ac) ⁵ :			\$3,406.28	Pump Impact (per irr-ac) ⁵ :		\$2,800.62
Total Source Impact (per irr-ac)						\$6,206.90

1. See Tables 2-1 and 3-2
2. See Table 3-6
3. See Tables 2-2 and 3-2
4. Calculated as the sum of existing and future eligible costs divided by the sum of existing and future eligible capacity
5. Calculated at the proposed level of service of 8 gpm/irr-ac

Expected source costs by time period are listed in Table 3-8. 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 3-8
Source Cost by Time Period**

Time Period	Irr-ac served	Buy-in Cost	Growth Cost	Total Cost
Existing	570	\$440,969.22	\$0.00	\$440,969.22
Next 10 years	150	\$191,652.03	\$739,383.08	\$931,035.11
Beyond 10 years	1,000	\$546,388.74	\$2,531,616.92	\$3,078,005.66
Total	1,720	\$1,179,009.99	\$3,271,000.00	\$4,450,009.99

Storage

Projected growth in the system will require the construction of a new PI storage facility in Zone 11W. Buy-in capacity in the existing storage pond is also available. The storage impact fee was calculated as shown in Table 3-9.

**Table 3-9
Storage Impact Fee Unit Calculation**

	Existing¹	Future²	Total
Eligible Cost	\$1,609,785.93	\$2,542,000.00	\$4,151,785.93
Capacity (ac-ft)	16.93	10	26.93
Storage impact (per ac-ft)³			\$154,169.55
Storage impact (per irr-ac)⁴			\$4,352.79

1. See Tables 2-3 and 3-3
2. See Table 3-6
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 9,200 gal/irr-ac (0.0282 ac-ft/irr-ac)

Expected storage costs by time period are listed in Table 3-10. 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 3-10
Storage Cost by time period**

Time Period	Irr-ac served	Buy-in Cost	Growth Cost	Total Cost
Existing	570	\$1,364,607.30	\$0.00	\$1,364,607.30
Next 10 years	150	\$253,158.09	\$399,759.89	\$652,917.98
Beyond 10 years	1,000	\$1,356,627.85	\$2,142,240.11	\$3,498,867.95
Total	1,720	\$2,974,393.23	\$2,542,000.00	\$5,516,393.23

Distribution

Santaquin City funded the construction of a large number of pipes in the PI system when it was first constructed. More recently, the City constructed a PRV and an additional pipeline (see Table 3-4). Additionally, there are several planned distribution projects within the 10-year impact fee planning period (see Table 3-6). The portion of the impact fee to account for these projects was calculated as shown in Table 3-11.

**Table 3-11
Distribution Impact Fee Unit Calculation**

	Existing¹	Future²	Total
Eligible Cost	\$2,986,999.21	\$3,174,000.00	\$6,160,999.21
Capacity (irr-ac) ³	1,150	1,150	1,150
Distribution Impact (per irr-ac)⁴			\$5,357.39

1. See Table 3-4
2. See Table 3-6
3. Distribution infrastructure is sized to accommodate future users through year 2060. A remaining capacity of 1,150 irr-ac was calculated as the projected year 2060 irrigable acreage (1,720) minus irrigable acreage existing at the beginning of year 2020 (570).
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 3-12. 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 3-12
Distribution Cost by Time Period**

Time Period	Irr-ac served	Buy-in Cost	Growth Cost	Total Cost
Existing	570	\$4,514,194.49	\$0.00	\$4,514,194.49
Next 10 years	150	\$389,608.59	\$414,000.00	\$803,608.59
Beyond 10 years	1,000	\$2,597,390.62	\$2,760,000.00	\$5,357,390.62
Total	1,720	\$7,501,193.70	\$3,174,000.00	\$10,675,193.70

Planning

The planning portion of the impact fee was calculated as shown in Table 3-13. Portions of the City's 2020 master plan study that are attributable to growth (approximately 50% of total expenditures) are impact fee eligible. 100% of costs associated with the Impact Fee Facility Plan and Impact Fee Analysis are impact fee eligible.

**Table 3-13
Planning Component of Impact Fee**

Planning Document	Cost	% of Plan Associated with Growth	Cost Associated with Growth	Irr-ac Served	Cost per Irr-ac
2020 PI Master Plan	\$48,566	50%	\$24,283.11	150	\$161.89
2020 IFFP and IFA	\$6,636.75	100%	\$6,636.75	150	\$44.24
Total	\$55,202.96	-	\$30,919.85	150	\$206.13

Facilities

The impact fee cost for the public works facility was calculated as shown in Table 3-14.

**Table 3-14
Facilities Impact Fee Unit Calculation**

	Existing facility
Eligible Cost ¹	\$632,500
Irr-ac at Year 2060 ²	1,720
Facilities Impact (per irr-ac)³	\$367.73

1. See Table 3-5
2. See Pressurized Irrigation Water Master Plan. The Facility will serve customers throughout the planning horizon.
3. Calculated as the eligible cost divided by remaining capacity

Table 3-15 shows the cost of the public works facility attributable to each time period.

**Table 3-15
Facilities Cost by Time Period**

Time Period	Irr-ac served	Buy-in Cost
Existing	570	\$209,607.56
Next 10 years	150	\$55,159.88
Beyond 10 years	1,000	\$367,732.56
Total	1,720	\$632,500.00

TOTAL IMPACT FEE UNIT CALCULATION

The proposed pressurized irrigation water system impact fee for one irrigable acre is **\$16,491**. Assuming a typical single-family connection contains 0.25 irrigable acres, the impact fee of a typical single-family connection is **\$4,123**. See Table 3-16.

**Table 3-16
Total Proposed Impact Fee**

Component	Per Irrigable Acre	Per Single Family Connection
Source	\$6,206.90	\$1,551.73
Storage	\$4,352.79	\$1,088.20
Distribution	\$5,357.39	\$1,339.35
Planning	\$206.13	\$51.53
Facilities	\$367.73	\$91.93
Total	\$16,491	\$4,123

AREA-BASED IMPACT FEE CALCULATION

It is recommended that an area-based approach to impact fee calculation is taken for all nonresidential developments and residential developments that do not have 0.25 irrigable acres. The recommended impact fee per irrigable square foot is calculated as shown in Table 3-17.

**Table 3-17
Proposed Area-Based Impact Fee**

Fee (per irrigable acre)	\$16,491
Square feet per acre	43,560
Fee (per square foot)	\$0.3786

COSTS BY TIME PERIOD

Table 3-18 is a summary of the existing and future facility costs by pressurized irrigation water system component and by time period. Existing costs are those costs attributed to capacity currently being used by existing connections. Costs attributed to the next 10 years are costs for the existing capacity or new capacity for the assumed growth in the next 10 years. Costs attributed to beyond 10 years are costs for the existing capacity or new capacity for the assumed growth beyond 10 years.

**Table 3-18
Facility Cost by Time Period**

	Existing	Next 10 Years	Beyond 10 Years	Total
Source	\$440,969.22	\$931,035.11	\$3,078,005.66	\$4,450,009.99
Storage	\$1,364,607.30	\$652,917.98	\$3,498,867.95	\$5,516,393.23
Distribution	\$4,514,194.49	\$803,608.59	\$5,357,390.62	\$10,675,193.70
Planning	\$24,283.11	\$30,919.85	\$0.00	\$55,202.96
Facilities	\$209,607.56	\$55,159.88	\$367,732.56	\$632,500.00
Total Cost	\$6,553,661.71	\$2,473,641.42	\$12,301,996.79	\$21,329,299.88

REVENUE OPTIONS

Utah Code 11-36a-302(2) requires a local political subdivision to generally consider all revenue sources to finance the impacts on system improvements, including grants, bonds, interfund loans, impact fees, and anticipated or accepted dedications of system improvements. This impact fee facilities plan considers each of these options. An expanded discussion on options the City has to generate revenue is included in this section for reference.

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 to 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.

REFERENCES

JUB Engineers. 2013. "Santaquin City Pressure Irrigation System Impact Fee Facilities Plan."

APPENDIX A

Historic Project Costs
(JUB, 2013 and City Records)

APPENDIX D – HISTORIC COSTS

Table D-1. Historic Costs of Storage Projects Eligible for Impact Fee Collection

Storage Projects			
Ahlin Pond (Zone 10 Pond (E))			
Year of Construction	2009	Percent funded by City:	59.26%
		Percent to be Used by Growth:	59.44%
Item Description			Amount
Total Construction Costs (Per Final Pay Request)			\$1,003,431.12
Less Pipe Costs (Included in "Historic Pipe Costs")			(\$77,365.00)
Other Fees: Engineering, Legal, Administrative, Finance 25%			\$231,516.53
Total:			\$1,157,582.65
Historic Cost Eligible for Impact Fee Collection (Total x 59.26% x 59.44%):			\$407,738.12

Table D-2. Historic Costs Calculation for Pipes Eligible for Impact Fee Collection

Transmission and Distribution Piping Work														
Main Line Size	Schedule 1 (Ahlin Pond) 2008		Schedule 2 (South of Main) 2007		Schedule 3 (North of Main) 2007		Schedule 4 (Upper East Side) 2009		Supply Lines (No Schedule) 2008		Total Pipe Length (LF)	Prorated Unit Price	Cost of Pipes	Calculated Unit Price of Piping Related Work ¹
	Total Length (LF)	Unit Price Paid	Total Length (LF)	Unit Price Paid	Total Length (LF)	Unit Price Paid	Total Length (LF)	Unit Price Paid	Total Length (LF)	Unit Price Paid				
4"			20,462	\$8.49	63,934	\$8.82	16,823	\$5.24	60	\$21.00	101,279	\$8.17	\$827,033	\$20.05
6"			593	\$10.71	2,240	\$11.24	21,571	\$6.90	176	\$15.25	24,580	\$7.45	\$183,053	\$18.28
8"			1,845	\$14.34	10,667	\$14.08	2,995	\$10.38	40	\$49.00	15,547	\$13.49	\$209,697	\$33.11
10"			5,958	\$23.63	1,713	\$18.71	5,598	\$13.82			13,269	\$18.86	\$250,202	\$46.29
12"			2,187	\$27.87	3,783	\$24.68	3,402	\$18.20			9,372	\$23.07	\$216,233	\$56.64
16"	360	\$40.71	2,258	\$36.72	1,343	\$36.60	15,362	\$28.21	2,540	\$45.25	21,863	\$31.79	\$695,020	\$78.04
24"	890	\$70.46	4,733	\$60.10			2,581	\$58.29	1,844	\$73.25	10,048	\$62.97	\$632,682	\$154.58
Total Cost of Schedule	\$1,003,431		\$2,017,442		\$3,149,671		\$2,930,136		\$543,992		Total:		\$3,013,919	
Non-Pipe Related	\$926,066		\$203,535		\$631,490		\$467,331		\$17,026					
Pipe Related Items	\$77,365		\$1,813,907		\$2,518,181		\$2,462,805		\$526,967					
Total cost of pipe related items from all schedules is \$7,399,224														

¹The unit price of piping related work is calculated as follows: The cost of all pipes based on the bid unit prices of the pipes themselves is \$3,013,919. The total cost of all piping related work (excavation, backfill, valves, etc.) is \$7,399,224. The ratio of \$7,399,224 to \$3,013,919 is 2.46, which means that the unit price of all piping related work is 2.46 times the unit price of the pipe itself. We therefore multiply the unit price of the pipe itself by 2.46 to arrive at the calculated unit price of all work associated with piping (ie. for 10" pipe,

PI Water Infrastructure Projects (City Records)

Project	Cost to City	Funding Source
Zone 11 E tank	\$ 2,048,327.11	Bond
Main Zone/11 E Booster Pump	\$ 1,112,903.04	
Cypress point backflow preventor and 10" meter	\$ 50,102.07	Impact Fees
Install 8" PI line within Harvest View Drive	\$ 82,100.00	Impact Fees
installed 12" PRV in Summit Ridge Parkway	\$ 19,869.70	Impact Fees
CW Springs Overflow to PI system	\$ 16,004.88	Impact Fees