



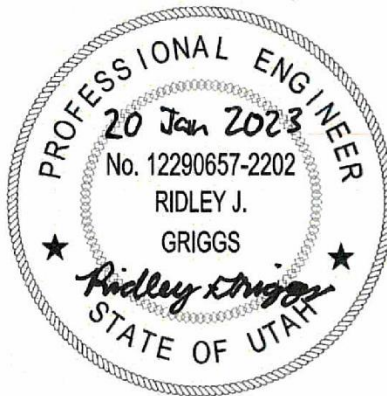
WASTEWATER COLLECTION SYSTEM IMPACT FEE FACILITY PLAN AND IMPACT FEE ANALYSIS

(HAL Project No.: 412.23.100)

January 2023

PAYSON CITY
WASTEWATER IMPACT FEE FACILITY PLAN
AND IMPACT FEE ANALYSIS

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Project Engineer



January 2023

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Payson City Government

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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IFA are modified or amended, or if assumptions presented in this analysis change substantially, this certification is no longer valid.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 sewer 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 sewer 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. offsets 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 purpose of the Impact Fee Facility Plan (IFFP) and Impact Fee Analysis (IFA) is to provide a technical and financial basis for impact fees and to document compliance with the Utah Impact Fee Act. The IFFP and IFA identify hydraulic loading placed on the existing wastewater collection system by new development and identify the means by which the City will accommodate them. This study replaces the Wastewater Collection System Impact Fee Facilities Plan (IFFP) adopted in 2020. This study addresses changes in conditions, level of service, available information, and assumptions that result in a change in the wastewater impact fee. In addition to the Wastewater Collection System Master Plan, information from additional ongoing modeling and planning assistance has also been used to support this analysis.

SERVICE AREA

The impact fee service area is the current Payson City municipal boundary and areas that are expected to be annexed into the City.

IMPACT FEE UNIT

The impact fee unit for sewer use is based on the Equivalent Residential Unit (ERU). An ERU is equal to the average loading of one residential connection. The method of using ERUs for analysis is a way for allocating existing and future demands of non-residential land uses.

LEVEL OF SERVICE

The level of service for indoor drinking water supply is 175 gpd per ERU for conveyance. The level of service for treatment is 220 gpd per ERU.

EXISTING AND FUTURE ERU COUNTS

The existing system served about 10,090 ERUs at the end of 2021. Projected growth is anticipated to add 3,607 ERUs in the next 10 years for a total of 13,697 ERUs by 2032.

IMPACT FEE ELIGIBLE COSTS

Impact fee eligible costs include costs of projects due to new development and the proportionate share of existing infrastructure costs that may be assigned to new development. The cost of providing capacity for existing deficiencies is not included in the impact fee. However, excess capacity can be built into projects intended to solve existing deficiencies, and this excess capacity can be included in the impact fee. Likewise, available capacity in existing facilities and capacity that is created through new projects is included in the impact fee. In addition to the proportionate share of costs of existing facilities, the impact fee is based on infrastructure that will be constructed within the next 10 years. The following table is a summary growth-related costs in the next 10 years.

WASTEWATER IMPACT FEE COSTS

Component	Cost
Collection	\$1,587,201.99
Treatment	\$14,987,085.00
Planning	\$60,456.90
Total	\$16,634,743.90

The impact fee is calculated based on the cost of the system divided by the capacity. This accounts for existing capacity used and results in a unit cost for future development. The recommended fee is **\$4,612 per ERU**.

PROPOSED WASTEWATER IMPACT FEE PER ERU

Component	Cost per ERU
Collection	\$440.03
Treatment	\$4,155.00
Planning	\$16.76
Total	\$4,612

Given that wastewater collection is not metered, and given that wastewater loading is created by water passing through the drinking water meter, the wastewater impact fee is based on drinking water use. The impact fee above has been calculated based on 1 ERU which would correspond to a standard 1" drinking water meter. Larger drinking water meters are assumed to serve more than 1 ERU and will have a higher corresponding drinking and wastewater impact fees. The table below indicates the impact fee rate schedule based on water meter size. The ERU factor is calculated based on American Water Works Association (AWWA) rated capacity for each meter size. This represents an equitable distribution of potential to use the City's sewer system. ERU capacity for users requiring larger meters will be assessed individually by the City.

PROPOSED WASTEWATER IMPACT FEE BASED ON METER SIZE

Drinking Water Meter Size	ERU	Impact Fee
1"	1.00	\$4,612
1 1/2"	2.00	\$9,224
2"	3.20	\$14,758

CHAPTER 1 INTRODUCTION

BACKGROUND

The City of Payson is experiencing rapid growth, which is expected to continue into the future. As this growth continues, additional wastewater collection, pumping, and treatment facilities will be required to provide adequate wastewater system capacity.

The City has recognized the importance of planning for increased demands on its wastewater collection system from new development as a result of the rapid growth. A new Wastewater Collection System Impact Fee Facilities Plan (IFFP) and Impact Fee Analysis (IFA) is required to address changes in conditions and assumptions that have occurred since the previous master plan. The previous Wastewater Collection System Master Plan and Capital Facility Plan completed by Bowen Collins & Associates (BC&A) in 2020 (See Appendix A) was used as a basis for this IFFP and IFA. Additional information collected since that time has also been incorporated into this analysis.

PURPOSE

The purpose of the IFFP and IFA is to provide a technical and financial basis for impact fees and to document the basis compliance with the Utah Impact Fee Act. Previously, Payson City prepared a wastewater collection system master plan and capital facilities plan (2020), which were used to prepare an IFFP and IFA. Since that time, several changes prompted Payson City to update these analyses, including new growth patterns, better information on the layout and pipe sizes in the existing network, increased construction costs, and a revised level of service.

IMPACT FEE COLLECTION

Impact fees enable local governments to finance public facility improvements necessary to service new developments without burdening existing development with capital facilities construction costs that are 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.

INCORPORATION BY REFERENCE OF THE WASTEWATER COLLECTION SYSTEM MASTER PLAN

This IFFP and IFA document is based on the analysis performed as part of the Payson City – Wastewater Collection System Master Plan (BC&A 2020) and on updated growth projections and modeling performed since that time. It predicts all growth-related wastewater collection system

capital facilities required for relevant planning periods. This study addresses changes in available information, level of service, and assumptions that result in a change in the wastewater impact fee. In addition to the Wastewater Collection System Master Plan, information from additional ongoing modeling and planning assistance has also been used to support this analysis. Variations from the previous IFFP and IFA documents are due to these updates and show a change in the capital projects needed to support growth in the next 10 years.

A hydraulic model of the wastewater collection system was prepared so that existing and future infrastructure needs could be identified. The model was used to assess existing system capacity and to confirm the effectiveness of the proposed capital facility projects.

CHAPTER 2 EXISTING WASTEWATER COLLECTION SYSTEM

GENERAL

The purpose of this chapter is to provide information regarding the existing wastewater collection system, identify the current and proposed levels of service, and analyze the remaining capacity of the existing system's facilities.

Payson's existing wastewater collection system is comprised of gravity pipes including laterals, collectors, interceptors and outfall. The system also includes lift stations, force mains and the wastewater treatment plant (WWTP). Figure 2-1 illustrates the existing wastewater system.

EXISTING EQUIVALENT RESIDENTIAL UNITS

In order to compare the relative quantities of wastewater loading between different types of land use, it is helpful to use a common unit of measure. The unit of measure that is used with this analysis is the Equivalent Residential Unit (ERU). The use of ERUs is a typical approach to describe the hydraulic loading imposed upon the wastewater collection system. An ERU is equal to the average loading of an average residential connection. Once the ERU is established, non-residential uses can be quantified in terms of fractions or multiples of an ERU. For this analysis all residential connections, including townhouses and apartments were equated to one ERU. The existing system served about 10,090 ERUs at the end of 2021.

For drinking water, Payson City has selected a 1-inch diameter water meter as the connection for a residential service. Non-residential developments are assigned a number of ERUs based on their meter size. Given that wastewater collection is not metered, and given that wastewater loading is created by water passing through the drinking water meter, the wastewater impact fee is also based on drinking water meter size. The number of wastewater ERUs designated for each property is the same the number of ERCs designated for the water according to the meter size.

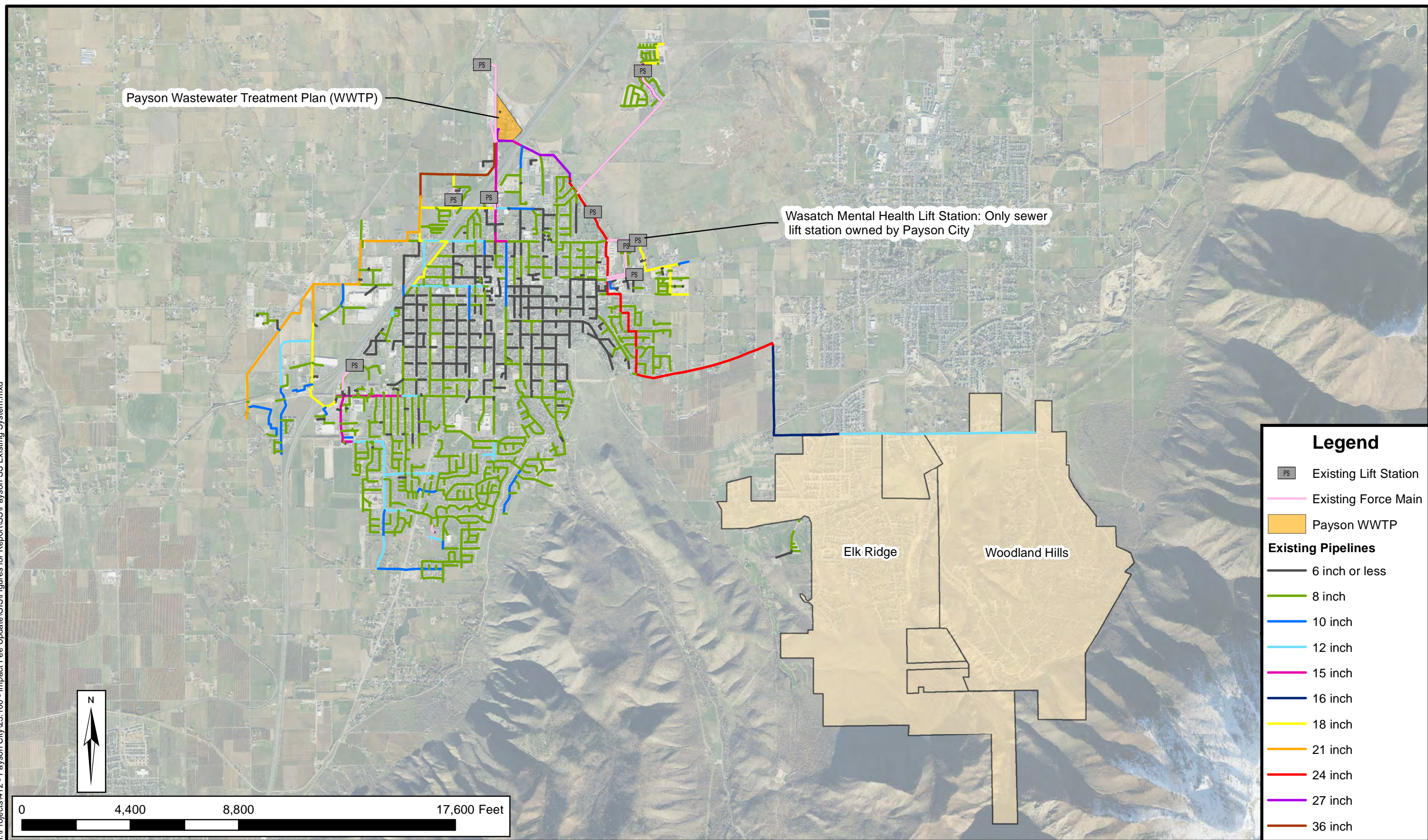
LEVEL OF SERVICE

The level of service designated for the wastewater collection system has been established by the City to provide adequate wastewater collection and treatment capacity.

ERU Loading

- Existing: The existing level of service is 175 gpd per ERU not including infiltration and inflow for City conveyance. The level of service for treatment is 220 gpd/ERU including both infiltration and inflow.

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Legend

- Existing Lift Station
- Existing Force Main
- Payson WWTP

Existing Pipelines

- 6 inch or less
- 8 inch
- 10 inch
- 12 inch
- 15 inch
- 16 inch
- 18 inch
- 21 inch
- 24 inch
- 27 inch
- 36 inch



PAYSON CITY

EXISTING SANITARY SEWER SYSTEM

FIGURE 2-1

Sewer Capacity

Existing

- Pipeline capacity (12-inch and smaller) – Peak flow in the pipe must be less than 50 percent of the full flow pipe capacity
- Pipeline Capacity (15-in and larger) – Peak flow in the pipe must be less than 75 percent of the full flow pipe capacity

Proposed

- Pipeline capacity (smaller than 12-inch) – Peak flow in the pipe must be less than 50 percent of the full flow pipe capacity
- Pipeline Capacity (12-in and larger) – Peak flow in the pipe must be less than 75 percent of the full flow pipe capacity

The proposed capacity is based on discussions with Payson City and is the basis for identifying deficiencies and developing recommendations for future Capital Facility Projects.

METHODOLOGY USED TO DETERMINE EXISTING SYSTEM CAPACITY

The method for determining the remaining capacity in the wastewater collection system was based on the defined level of service in terms of ERUs. Both collection (pipes and lift stations) and treatment components of the wastewater collection system were assessed a capacity in terms of ERUs. The evaluation of the treatment plant was performed by Forsgren Associates and is incorporated into this analysis (see Appendix B). The difference between the capacity of a facility and the existing demand on it (expressed as ERUs) is the remaining capacity. For example, to calculate the remaining capacity for treatment in ERUs, the required treatment for existing users in ERUs is subtracted from the capacity of the treatment plant in ERUs.

A hydraulic model was developed for the purpose of assessing system operation and capacity. For pipelines, the model was used to calculate a capacity in terms of ERUs. Each pipeline was sized to maintain an appropriate depth over pipe diameter (d/D) ratio under projected future conditions. Capacity, demand and remaining capacity is presented in the following paragraphs for each component of the sewer system.

COLLECTIONS

The existing Payson City wastewater collection system consists of nearly 100 miles of pipeline and over 1,970 manholes. The pipes range in size from 4-inch diameter to 36-inch diameter. The system also has force main piping ranging from 2-inch diameter to 12-inch diameter. Lift stations are used to pump wastewater where gravity flow sewers are not capable of conveying flow to the treatment plant.

The City operates one lift station and has several privately owned and operated lift stations. The pump stations lift the sewage to gravity lines which ultimately lead to the wastewater treatment plant and must therefore meet the level of service of 175 gpd/ERU. The pipelines within the service areas of these lift stations were sized based on the capacity of these lift station. As such, capacity of the collection pipes is directly related to the capacity of the lift stations. A summary of ERUs based on time period is shown in Table 2-1.

**Table 2-1
Summary of ERUs by Year**

Year	ERUs	Additional ERUs Added
2019	8,865	-
2022	10,090	1,225
2032	13,697	3,607
2050	37,443	23,746

TREATMENT

Payson operates one wastewater treatment plant. It was originally constructed at a capacity of 3.0 MGD. Later, an expansion was made adding 3.0 MGD capacity. A Sewer Impact Fee Analysis Amendment was completed by Forsgren Associates Inc. that evaluates the construction costs and establishes the eligible impact fee. It found a unit cost of \$4,155 per ERU. This amendment is used as a basis for treatment costs through this report and can be found in Appendix B.

CAPITAL FACILITIES TO MEET SYSTEM DEFICIENCIES

The existing wastewater collection system has adequate physical capacity to convey anticipated wastewater flow rates to the wastewater treatment plant. Capital projects to replace aging infrastructure are needed but not considered further in this report, as they are not eligible for impact fee reimbursement.

CHAPTER 3 IMPACT FEE CALCULATION

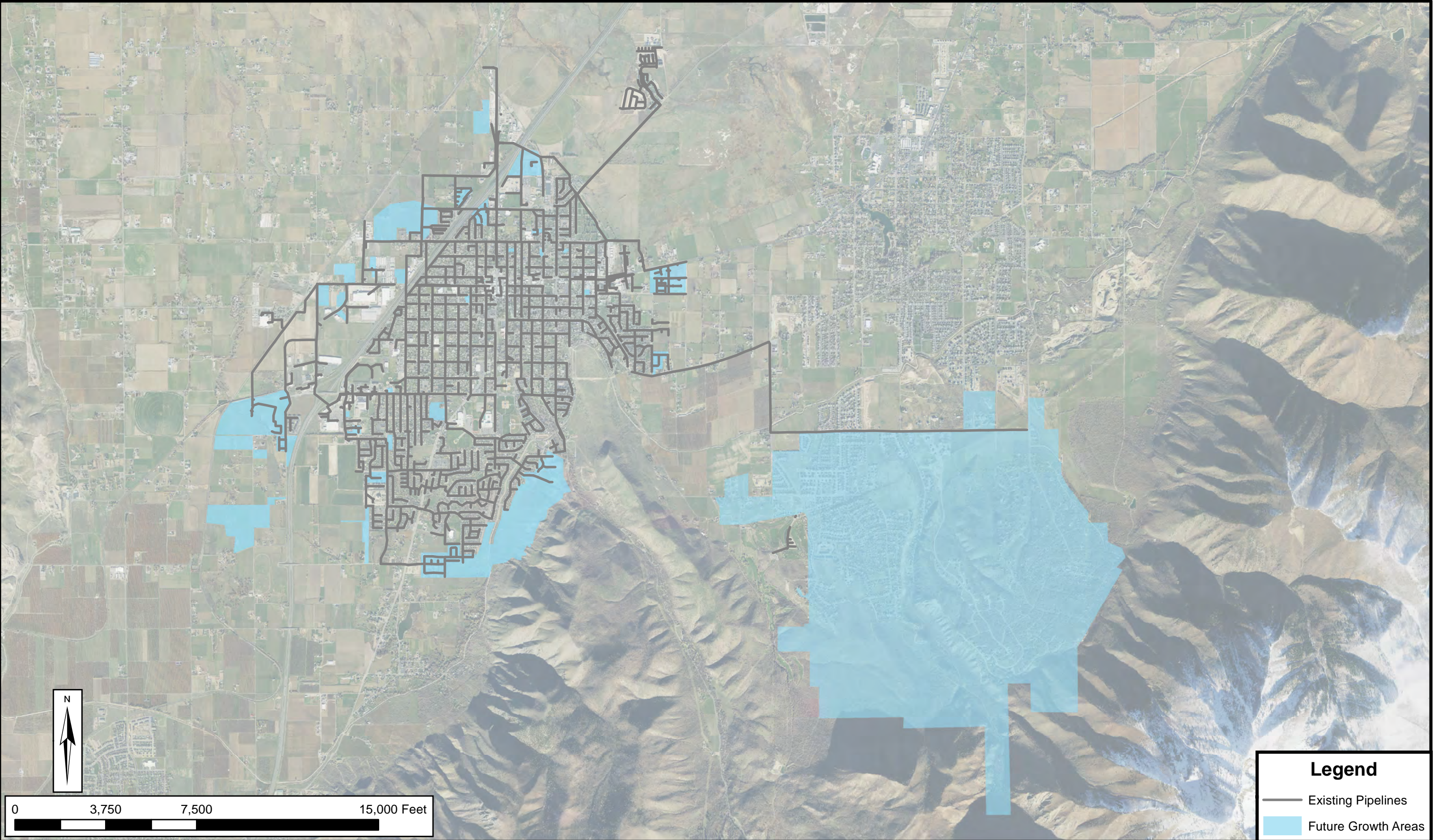
GENERAL

This chapter relies on the data presented in the previous chapters to calculate a proposed impact fee based on the appropriate proportion of cost of projects planned in the next 10 years to increase capacity for new growth and an appropriate buy-in cost of available existing excess capacity previously purchased by the City.

Capital facility projects planned to support growth within the next 10 years are presented. Also included in this chapter are the possible revenue sources that the City may consider to fund the recommended projects. The sewer system impact fee units include both collection and treatment components.

GROWTH PROJECTIONS

The development of impact fees requires growth projections over the next ten years. For this analysis, only growth within the service area of the wastewater treatment plant is considered. Growth projections for Payson were made considering population projections and projected areas of development. The growth projections for Elk Ridge and Woodland hills were assumed to be consistent with the growth rate presented in the Master Plan. The existing system serves about 10,090 ERUs. Projected growth adds 3,607 ERUs in the next 10 years for a total of 13,697 ERUs. Total growth projections are summarized in Table 3-1. The projected 10-year growth is shown in Figure 3-1.



Legend

- Existing Pipelines
- Future Growth Areas



PAYSON CITY

PROJECTED 10-YEAR GROWTH AREAS

FIGURE 3-1

**Table 3-1
Growth Projections**

Year	Annual Growth (ERUs)			
	Payson	Elk Ridge	Woodland Hills	Total
2022	9,242	584	264	10,090
2023	9,542	592	267	10,401
2024	9,846	599	270	10,715
2025	10,159	606	274	11,039
2026	10,482	614	277	11,373
2027	10,815	621	281	11,717
2028	11,159	629	284	12,072
2029	11,514	637	288	12,439
2030	11,880	648	293	12,821
2031	12,258	660	298	13,216
2032	12,722	672	303	13,697
Change	+3,480	+88	+39	+3,607

COST OF EXISTING AND FUTURE FACILITIES

The facilities and costs presented in Table 3-2 are existing facilities with remaining buy-in capacity. The historical costs for the existing facilities come from Payson City records.

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

Project	Collection	Treatment	Total
800 South Sewer Line	\$1,500,000.00	\$0.00	\$1,500,000.00
Red Bridge PID - Sewer Outfall ¹	\$3,150,542.83	\$0.00	\$3,150,542.83
Total	\$4,650,542.83	\$0.00	\$4,650,542.83

1. See Appendix D for information regarding the Red Bridge Sewer Outfall

A summary of ERUs based on time period is shown in Table 3-3.

**Table 3-3
Summary of ERUs by Year**

Year	ERUs	Additional ERUs Added
2019	8,865	-
2022	10,090	1,225
2032	13,697	3,607
2050	37,443	23,746

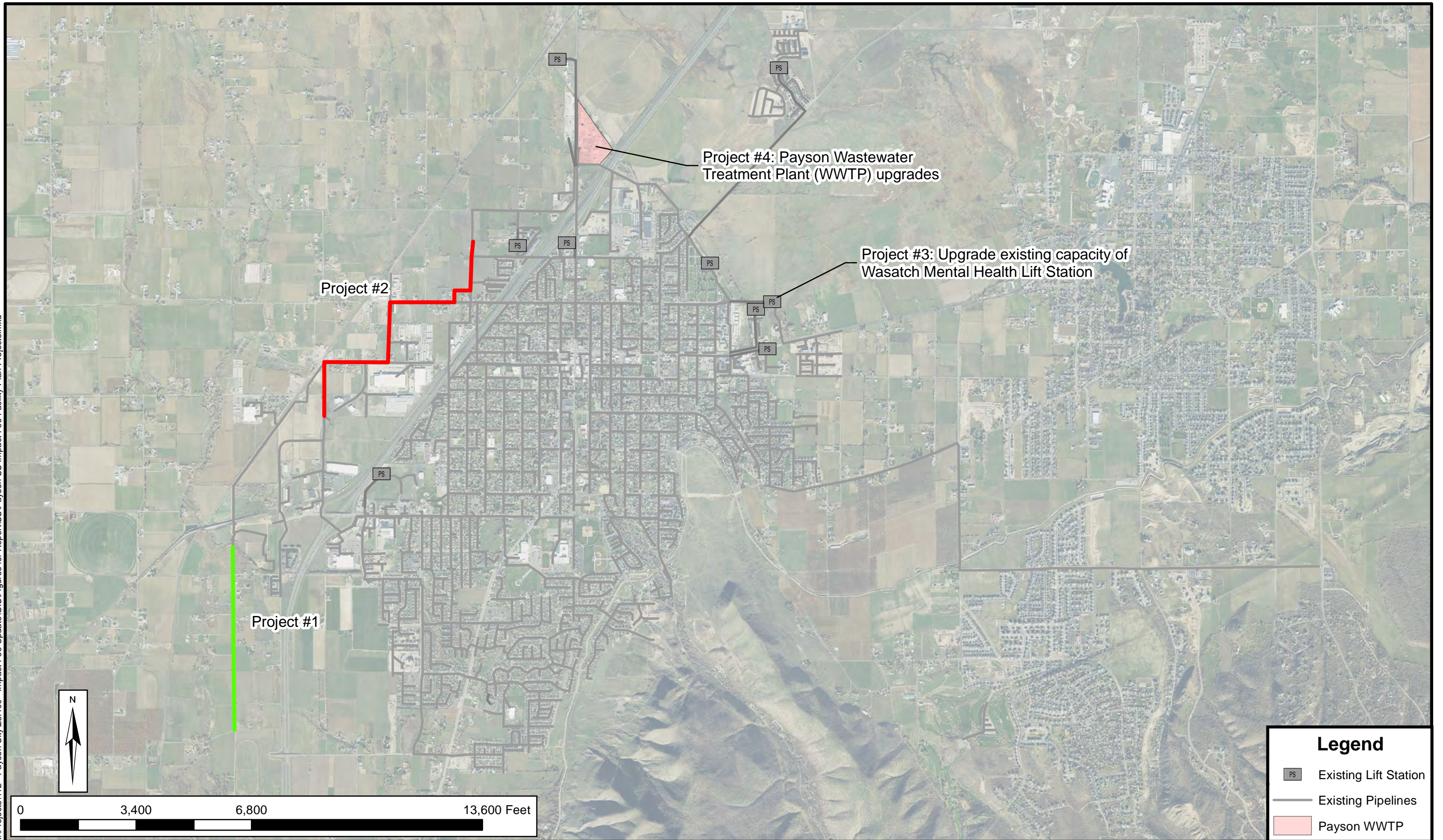
The impact fee eligible cost for the existing facilities is shown in Table 3-4 and is based on remaining capacity in the system from when it was first constructed.

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

Project	Cost	% To Growth	Eligible Cost
800 South Sewer Line	\$1,500,000.00	95.71% ¹	\$1,435,702.29
Red Bridge PID - Sewer Outfall	\$3,150,542.83	100.00% ²	\$3,150,542.83
Total	\$4,650,542.83	-	\$4,586,245.12

1. Calculated as the remaining capacity in ERUs from time of construction in 2019 to buildout in 2050. See Table 3-3.
2. Recently constructed project with 100% remaining capacity

The facilities and costs presented in Table 3-5 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 level of service with growth projections as described previously and output from hydraulic modeling. All future projects have a design life greater than 10 years, as required by the Impact Fee Act, and all of the projects are 100% growth-related. Future facilities needed to support growth are shown on Figure 3-2.



**Table 3-5
Estimated Impact Fee- Eligible Cost of Future Facilities**

Project	Map ID	Collection	Treatment	Total
1950 West Sewer Line	1	\$4,530,000.00	\$0.00	\$4,530,000.00
American Way, 400 S to 800 N. (BCA Project #4) ¹	2	\$1,120,000.00	\$0.00	\$1,120,000.00
Upgrade Wasatch Mental Health Lift Station	3	\$1,800,000.00	\$0.00	\$1,800,000.00
Wastewater Treatment Plant Upgrades ²	4	\$0.00	\$40,440,392.00	\$40,440,392.00
Total	-	\$7,450,000.00	\$40,440,392.00	\$47,890,392.00

1. Only the difference in cost between the existing 21-inch diameter pipe and the future 30-inch diameter pipe is assumed to be impact fee eligible. The remainder is considered a replacement cost.
2. See the Sewer Impact Fee Analysis Amendment Memorandum in Appendix B for details.

IMPACT FEE UNIT CALCULATION

Wastewater Impact Fee Unit

It is recommended that the City continue to use the ERU method to calculate a wastewater Impact Fee Unit. The number of ERUs is determined by the size of the water meter. One impact fee unit is equal to 1 ERU, which corresponds to a 1" drinking water meter. Larger meters correspond to a higher ERU count.

Impact Fee Calculation

The Wastewater impact fee per unit is has been calculated based on the on value of the excess capacity in the system and the cost of predicted future projects over the next 10 years.

Collections

The collections portion of the impact fee unit is calculated as shown in Table 3-6. Because infrastructure is sized in direct relation to the ultimate capacity of the system, the fee was calculated by dividing the impact fee-eligible cost of existing and planned 10-year projects by the capacity of the future system.

**Table 3-6
Collections Facility Costs by Time Period**

Time Period	Total ERUs Served	ERUs Towards Total Growth Capacity	Proportion of Total Capacity	Proportionate Cost
Existing	10,090	0	0%	\$64,297.71 ¹
10-year	13,697	3,607 ²	13%	\$1,587,201.99
Beyond 10-year	37,443	23,746 ³	87%	\$10,449,043.12
Total	-	27,353	100%	\$12,100,542.83

1. Existing cost is the cost that has already served growth (see Table 3-4).
2. Based on growth projections. See Table 3-1.
3. A remaining capacity of 27,353 ERUs was calculated as the projected ERUs at year 2050 minus ERUs existing at the beginning of year 2021. See Table 3-3.

Treatment

Payson operates one wastewater treatment plant with an existing capacity of 3.0 MGD. The City is currently working to complete a comprehensive upgrade to the treatment plant, which will provide capacity for future growth. The treatment portion of the impact fee was calculated in the Sewer Impact Fee Analysis Amendment completed by Forsgren Associates Inc. included in Appendix B. The amendment specifies a maximum treatment impact fee of \$4,155 per ERU.

The cost of the treatment facilities is shown by time period in Table 3-7.

**Table 3-7
Treatment Facility Costs by Time Period**

Time Period	Total ERUs Served	ERUs Towards Total Growth Capacity	Cost
Existing	10,090	0	0
10-year	13,697	3,607 ¹	\$14,987,085
Beyond 10-year	19,823	6,126 ²	\$25,453,307.00
Total	-	9,733	\$40,440,392.00

1. Based on Master Plan Growth projections. See Table 3-1.
2. A remaining capacity of 6,126 ERUs was calculated by taking the remaining cost for treatment not served in 10 years and dividing it by the impact fee of \$4,155.

Planning

The planning portion of the impact fee was calculated as shown in Table 3-8. Portions of the City's 2019 master plan study that are attributable to growth (approximately 60% 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 3-8
Planning Component of Impact Fee**

Planning Document	Cost	% of Plan Associated with Growth	Cost Associated with Growth	ERUs Served	Cost per ERU
BC&A 2019 Master Plan	\$35,367	60%	\$21,220	1,523 ¹	\$13.93
2022 IFFP and IFA	\$10,200.00	100%	\$10,200	3,607	\$2.83
Total	\$45,567	-	\$31,420	-	\$16.76

1. Value taken from 2019 IFFP and IFA report for Payson City.

It is assumed that the City will require another Sanitary Sewer Water Master Plan in the next 10 years, and that the unit cost per ERC for planning will be similar to the previous master plan. That cost is factored into the next 10 years for the growth cost.

Facility Cost by Time Period

Costs attributed to growth over the next 10 years are included in the impact fee. Table 3-9 is a summary of the existing and future facility costs 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. These costs are included in the impact fee.

**Table 3-9
Facility Cost by Time Period**

Component	Existing	Next 10 Years	Beyond 10 Years	Total
Collection	\$64,297.71	\$1,587,201.99	\$10,449,043.12	\$12,100,542.83
Treatment	\$0.00	\$14,987,085.00	\$25,453,307.00	\$40,440,392.00
Planning	\$17,068.12	\$60,456.90	\$0.00	\$77,525.02
Total	\$81,365.83	\$16,634,743.90	\$35,902,350.12	\$52,618,459.85

Table 3-10 is a summary of the cost included in the impact fee calculation by component. It shows the unit cost per ERU, which was calculated by dividing the impact fee eligible cost for the respective components by the total ERUs served. The cost per ERU for treatment is based on the value provided in the Sewer Impact Fee Analysis Amendment.

**Table 3-10
Proposed Wastewater Impact Fee Per ERU**

Component	Impact Fee-Eligible Cost	ERUs Served	Cost per ERU
Collection	\$1,587,201.99	3,607	\$440.03
Treatment	\$14,987,085.00	3,607	\$4,155.00
Planning	\$60,456.90	3,607	\$16.76
Total			\$4,612

Total Impact Fee Calculation for Various Meter Sizes

Table 3-11 shows the recommended impact fee by meter size. Users requiring larger meters will individually be assessed an ERU capacity based on projected water use. The total proposed impact fee for a typical single-family residential connection requiring a 1-inch drinking water connection would have an impact fee of **\$4,612**. For larger meter sizes, the fee scales proportionately according to the ERU capacity of the meter. The ERU count for each meter size is calculated based on American Water Works Association (AWWA) rated capacity for each meter size. This represents an equitable distribution of potential to use the City’s sewer system.

**Table 3-11
Proposed Wastewater Impact Fee Based on Meter Size**

Drinking Water Meter Size	ERUs	Impact Fee
1"	1.00	\$4,612
1 ½"	2.00	\$9,224
2"	3.20	\$14,758

REVENUE OPTIONS

Funding options for the recommended projects could include the following: Existing City funds, general obligation bonds, revenue bonds, State/Federal grants and loans, inter-fund loans and impact fees. The City may need to consider a combination of these funding options. The following discussion describes each of these options.

Existing City Funds

Existing City funds, such as a wastewater fund or the general fund, at times may be funding options for existing deficiency projects or infrastructure growth projects. The wastewater fund is often used to resolve existing deficiencies and to provide funding for operations and maintenance.

General Obligation Bonds

This form of debt enables the City to issue general obligation bonds for capital improvements and replacement. General Obligation (GO) 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. GO bonds are often the lowest-cost form of debt financing available to local governments and can be combined with other revenue sources 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.

Revenue Bonds

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

State/Federal Grants and Loans

Historically, local 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. State and federal grants and loans may be investigated as possible funding sources for needed water system improvements.

Impact Fees

Impact fees can be applied to water related facilities according to the Utah Impact Fees Act (Act). The Act is intended to provide a framework for establishing new development assessments. The fundamental objective for the impact fee structure is the imposition on new development of costs

associated with providing or expanding water infrastructure to meet the capacity needs created by new development. Impact fees cannot be applied retroactively.

Interfund Loans

Loans between City funds can be considered as a method of financing capital improvement projects.

Summary of Available Funding Options

Each of the above options have been considered for funding infrastructure project. Of the above options, impact fees are the most appropriate funding method for growth related projects. At this time, Payson City will implement impact fees to fund growth improvements.

APPENDIX A

2020 Sanitary Sewer Master Plan
- Payson City

The 2020 Sanitary Sewer Master Plan for Payson City can be found on their website at the link listed below:

<https://www.paysonutah.org/publicworks-sewerservices>

APPENDIX B

2020 Sewer Impact Fee Analysis
Amendment – Forsgren Associates Inc.

TECHNICAL MEMORANDUM

PREPARED FOR: Travis Jockumsen, PE – City Engineer (Payson City)

PREPARED BY: Jason Broome, PE/Forsgren Associates

COPIES:

DATE: April 8, 2022 (***DRAFT***)

SUBJECT: Sewer Impact Fee Analysis Amendment

1.0 INTRODUCTION

Payson City completed a Sewer Impact Fee Facilities Plan (IFFP) and Sewer Impact Fee Analysis (IFA) in July 2020. Since completion of these studies, the scope and budget for the Wastewater Treatment Plant (WWTP) upgrade and expansion project has changed. The purpose of this technical memorandum is to provide a new analysis of the portion of the sewer impact fee that covers the WWTP improvements. Impact fees for the sewer collection system will remain unchanged. For more information about either of the studies or the scope of the WWTP upgrade, see the following documents:

- Sewer Impact Fee Facilities Plan, Bowen Collins Associates, July 2020.
- Sewer Impact Fee Analysis, Bower Collins Associates, July 2020.
- WWTP Upgrade Preliminary Design Report (PDR), Forsgren Associates, April 2022 (Draft).

Note that the 2020 IFA recommended that the WWTP portion of the impact fee be set at \$1,156.31.

2.0 CALCULATION OF EQUIVALENT RESIDENTIAL UNITS

Current and future equivalent residential units (ERUs) for the WWTP upgrade project are as discussed in this section. Table 1 shows the average number of ERUs served by the wastewater system in 2021.

**Table 1
Wastewater ERUs for 2021**

Account	No. of Accounts	No. of ERUs
501-Sewer Residential		
Payson residential/commercial/industrial	6,227	6,227
Elk Ridge	1	1,150
Woodland Hills	1	61
Arrowhead (Salem)	1	217
Sub-Total	6,230	7,655
504-Sewer Multi-Unit		
Ridgestone	1	180
Eversage	1	168
Grand Vista	1	26
Mountain View	1	52
Pine Ridge	1	93
Others	21	42
Sub-Total	26	561
Total Sewer Accounts/ERUs		
Total	6,256	8,216

Table 2 shows the expected ERUs for 2022 and the projected ERUs through 2045. Phase 1 of the upgrade will be designed for the 20-year projected growth. The WWTP upgrade is expected to be completed in 2025, so the starting year of the 20-year design period is 2025. The design target year is therefore 2045.

**Table 2
Wastewater ERU Projections**

Year	2021	2022	2025	2030	2035	2040	2045
Avg Growth Rate During Period		3.10%	3.10%	3.10%	3.30%	3.30%	4.00%
ERUs	8,216	8,471	9,283	10,814	12,720	14,962	18,204
Flow per ERU (gal/day/ERU)	220	220	220	220	220	220	220
Annual Avg Flow (mgd)	1.81	1.86	2.04	2.38	2.80	3.29	4.00

3.0 WWTP UPGRADE PROJECT COST

The cost of the WWTP upgrade has increased since the 2020 IFA was completed. The primary reasons for the increased cost are discussed below. Additional information on the cost increase can be found in the presentation given to the City Council on January 19, 2022.

- Construction costs have greatly escalated in the past 2 years.
 - Labor and materials costs increased 10% in 2021.
 - There is a high volume of local construction work, putting further strain on labor and materials in Utah.

- Unemployment in the construction industry is very low, resulting in labor shortages.
- COVID has dramatically affected material supplies.
- The goals of the project have evolved since the project was originally scoped out in the 2019 Capital Facilities Plan, including:
 - Provide a true biological nutrient removal process system.
 - Design for easier future expansion in Phase 2.
 - Make provisions to produce Type I reuse water in the future.
 - Meet future potential low nutrient limits for Utah Lake with minimal changes.
 - Improve operations staff safety.
- The cost of the original scope in the 2019 Capital Facilities Plan was underestimated.

Forsgren worked with Alder Construction (selected as the CM/GC contractor for the project) in November-December 2021 to produce a 10% level of design cost estimate for the project based on the PDR. The total cost of the project based on the new construction cost estimate and the current values of other items is shown in Table 1.

**Table 3
WWTP Upgrade Project Cost Summary**

Item	Description	Cost
1	Land/Right of Way	\$60,000
2	Legal/Bonding	\$140,000
3	DWQ Loan Origination Fee	\$230,000
4	Engineering-Design	\$1,927,000
5	CMGC Preconstruction Services	\$228,000
6	Engineering-Construction	\$2,500,000
7	Construction	\$42,274,000
8	Contingency	\$8,455,000
9	Escalation	\$1,268,000
10	Total	\$57,082,000

The project is expected to be funded as shown in Table 2.

**Table 4
WWTP Upgrade Project Funding Summary**

Item	Description	Cost
1	Local Contribution	\$2,155,000
2	Water Quality Board SRF Loan	\$13,500,000
3	Water Quality Board Principal Forgiveness	\$1,000,000
4	Open Market (Private) Loan	\$40,427,000
5	Total	\$57,082,000

4.0 IMPACT FEE CALCULATION

The project costs that are eligible for inclusion in the impact fee are:

- Capital cost of the project, including all costs shown in Table 3.
- Interest for the SRF loan listed as item 2 in Table 4.
- Interest for the private loan listed as item 4 in Table 4.

Table 5 shows the calculations for the new impact fee.

**Table 5
New Impact Fee Calculation**

Item	Capital Costs	Interest from SRF Loan	Interest from Private Loan	Total
Project Capital Cost	\$57,082,000			
Loan Amount		\$13,500,000	\$40,345,000	
Term (years)		30	30	
Interest Rate		0.500%	2.500%	
Annual Payment		\$485,715	\$1,927,589	
Total Payments		\$14,571,462	\$57,827,667	
Total Interest		\$1,071,462	\$17,482,667	
Current ERUs (2022)	8,471	8,471	8,471	
ERUs at Design Flow (2045)	18,204	18,204	18,204	
New ERUs Served by Project	9,733	9,733	9,733	
Portion of Project Serving New Connections	53%	53%	53%	
Value of Project Serving New Connections	\$30,520,050	\$572,879	\$9,347,463	
Treatment Impact Fee/ERU	\$3,135.75	\$58.86	\$960.39	\$4,155.00

5.0 RESULTS & CONCLUSIONS

It is recommended that the WWTP portion of the Sewer Impact Fee be increased to \$4,155 as calculated in this memo.

APPENDIX C

Capital Project Cost Estimates

**Payson City Capital Facility Plan
Wastewater Collection System Recommended Improvements
Preliminary Engineers Cost Estimates**

	Item	Unit	Unit Price	Quantity	Total Price w Contingency
1	<i>1950 West Sewer Line</i>				
	Gravity (21" Pipeline)	LF	\$ 700	5400	\$ 4,530,000
	Total to 1950 West Sewer Line				\$ 4,530,000
2	<i>American Way, 400 S to 800 N. (BCA Project #4)</i>				
	Gravity (Cost to upsize 21" pipeline to 30")	LF	\$ 99	9400	\$ 1,120,000
	Total to American Way, 400 S to 800 N. (BCA Project #4)				\$ 1,120,000
3	<i>Upgrade Wasatch Mental Health Lift Station</i>				
	Upgrade Capacity of Existing Lift Station	LS	\$ 1,500,000	1	\$ 1,800,000
	Total to Upgrade Wasatch Mental Health Lift Station				\$ 1,800,000
	Total for Improvements				\$ 7,450,000

APPENDIX D

Pioneering Agreement for
Red Bridge Sewer Outfall

RED BRIDGE

6/22/2022

SEWER CAPACITY ANALYSIS PID SEWER PHASES A & C

Exist Payson City 21" Sewer Outfall Line in Utah Ave at 75% Capacity		4.980 cfs ✓
Measured flowrate of existing Payson City Sewer @ PID tie-in location in Utah Ave		1.19 cfs ✓
Total available PID Sewer Capacity @ tie-in to existing sewer system		3.790 cfs ✓
Red Bridge Station - Sewer Capacity Reservation		1.723 cfs ✓
1240 Dwelling Units		
560 Additional ERU's (Mtech, Hotels, Retail, Restaurants)		
Projected Peak Hourly Flow		1.723 cfs ✓
Remaining PID Sewer Capacity for areas South of Red Bridge Development		2.067 cfs ✓
Projected South Service Area of PID Sewer Line	360 ac	
Projected South Service Area Zoning	3.0 DU/ac	
Projected Total # of Dwelling units	1,080 DU	
Projected Peak Hourly Flow		2.064 cfs

CONSTRUCTION COSTS

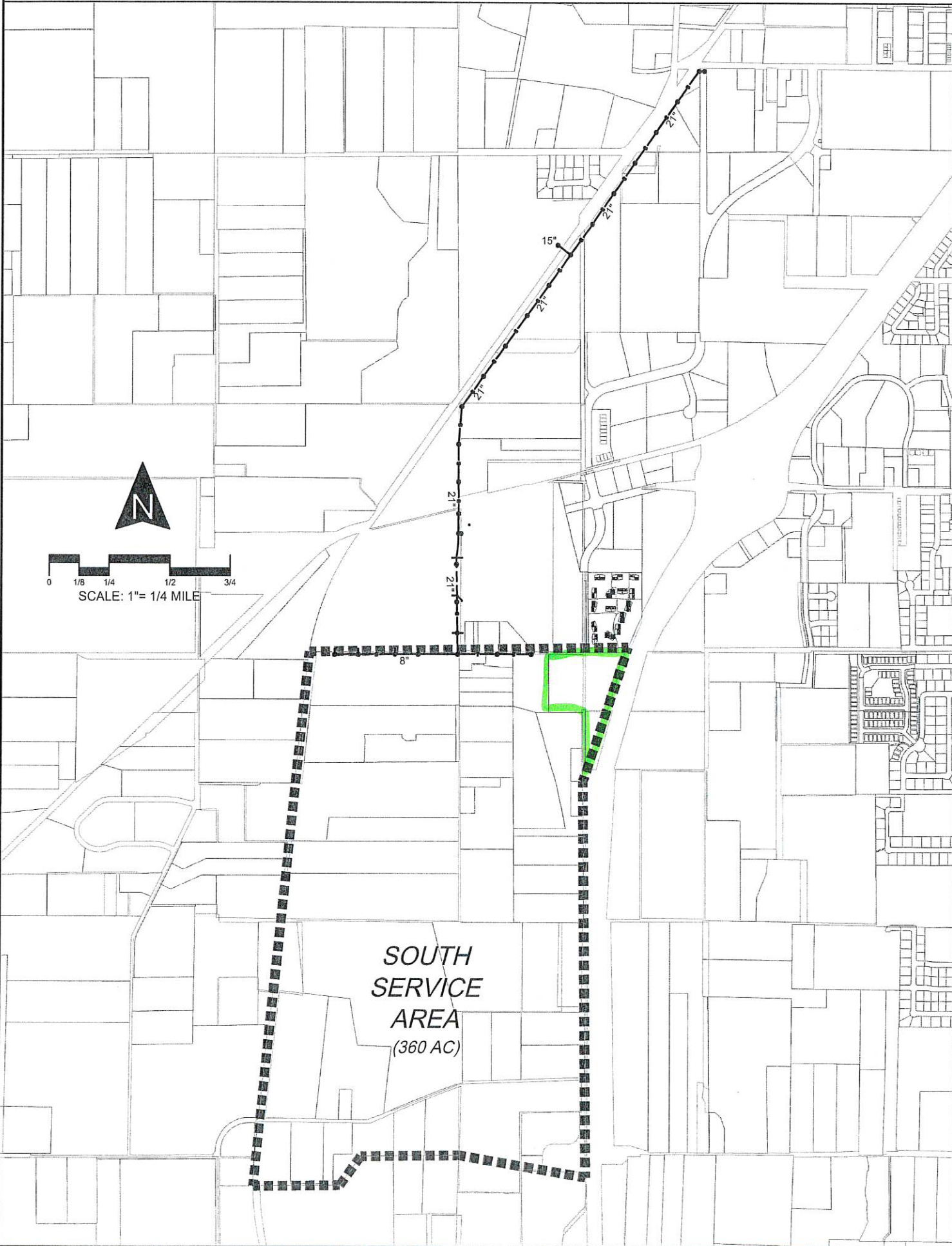
Description	Total Cost
Red Bridge PID - Sewer Outfall Phase 1 A Overall Cost	\$ 2,934,486.83
Red Bridge PID - Sewer Outfall Phase 1 C Overall Cost	\$ -
Engineering & Surveying	\$ 119,400.00
Easements	\$ 96,656.00
Total Red Bridge PID - Sewer Outfall Cost	\$ 3,150,542.83

SOUTH SERVICE AREA - PIONEERING AGREEMENT CONNECTION FEE

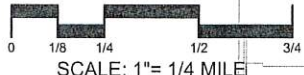
TOTAL RED BRIDGE PID - SEWER OUTFALL		\$ 3,150,542.83
	<u>Peak Flowrate</u>	<u>% of Flowrate</u>
RED BRIDGE	1.723 cfs	45%
SOUTH SERVICE AREA	2.064 cfs	55%
TOTALS	3.787 cfs	100%
SOUTH SERVICE AREA TOTAL PIONEERING AMOUNT		\$1,717,116.56
SOUTH SERVICE AREA - TOTAL # OF DWELLING UNITS	1,080 DU	

PIONEERING AGREEMENT CONNECTION FEE PER DU	\$1,589.92
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RED BRIDGE PID SEWER OUTFALL



SOUTH
SERVICE
AREA
(360 AC)



SCALE: 1" = 1/4 MILE