PREPARED FOR:

ASH CREEK SPECIAL SERVICE DISTRICT

PREPARED BY:

BOWEN COLLINS & ASSOCIATES

SEWER IMPACT FEE FACILITIES PLAN

JUNE 2022

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INTRODUCTION

The purpose of an Impact Fee Facilities Plan (IFFP) is to identify demands placed upon District facilities by future development and evaluate how these demands will be met by the District. The IFFP is also intended to outline the improvements which may be funded through impact fees.

WHY IS AN IFFP NEEDED?

The IFFP provides a technical basis for assessing updated impact fees throughout the District service area. This document addresses the future infrastructure needed to serve the District. The existing and future capital projects documented in this IFFP will ensure that level of service standards are maintained for all existing and future residents who reside within the service area. Local governments must pay strict attention to the required elements of the IFFP which are enumerated in the Impact Fee Act.

PROJECTED FUTURE GROWTH

To evaluate the use of existing capacity and the need for future capacity, it is first necessary to calculate the demand associated with existing development and projected growth. Using available information for existing development and growth projections from the District's Master Plan, projected growth in system demand is summarized in Table ES-1.

Table ES-1
ACSSD Service Area Sewer ERU Projections

Year	Projected ERUs	Estimated Sewer Flows (MGD)
2021	12,722	2.54
2026	15,863	3.17
2031	19,301	3.86
2040	26,958	5.39
2050	35,755	7.15

Wastewater flows are projected in terms of Equivalent Residential Units (ERUs). An ERU represents the wastewater produced by a typical single-family residence. The basis of an ERU from historical flow data is summarized in Table ES-2.

Table ES-2
ACSSD Service Area Historical Flows

Item	Value for Existing Conditions
Equivalent Residential Units (ERUs)	12,722
Domestic Wastewater Production, Peak Month, Average Day (mgd)	2.36
Infiltration (mgd)	0.18
Peak Month, Average Day Flow (mgd)	2.54
Peak Hour Flow[1] (mgd)	6.36
Flows per ERU	
Domestic Wastewater Production (gpd/ERU)	186
Average Day, Maximum Month Flow (gpd/ERU)	200
Peak Hour Flow[1] (gpd/ERU)	500
Average Indoor Water Use (gpd/ERU)	206

[1]Represents the estimated cumulative peak flow at the point of discharge. Observed peak flow will vary depending on the location in the system.

LEVEL OF SERVICE

Level of service is defined in the Impact Fee Act as "the defined performance standard or unit of demand for each capital component of a public facility within a "service area". Performance standards are those standards that are used to design and evaluate the performance of facilities. While the Impact Fee Act includes "defined performance standard" as part of the level of service definition, this report will make a subtle distinction between performance standard and level of service. The performance standard will be considered the desired minimum level of performance for each system component, while the existing level of service will be the actual current performance of the system component. The proposed level of service will be the actual performance of the component in the future. Summary values for these categories are contained in Table ES-3.

Table ES-3
Existing Performance Standards and Level of Service for Various System Requirements

	Existing Performance Standard	Existing Level of Service	Proposed Level of Service
Pipeline Capacity			
Maximum Ratio of Peak Flow Depth to Pipe Diameter[1]	0.7	0.73[2]	0.7
Treatment Capacity			
Available Plant Capacity – Average Day, Maximum Month Flow (gpd/ERU)	200	263[3]	200

[1]During peak hour, dry weather sewer flow. A ratio of peak flow depth to pipe diameter of 0.7 corresponds to the pipe flowing at approximately 75% of full flow capacity.
[2]Because there are thousands of pipeline components, the value given is for the worst case only. All other components have a higher level of service. Only a couple pipelines in the system do not currently meet the performance standard.
[3]Existing level of service represents level available, not necessarily level used. For example, the treatment being used per ERU is 200 gpd even though the amount currently available is 263 gpd per ERU.

EXISTING CAPACITY AVAILABLE TO SERVE FUTURE GROWTH

Projected future growth will be met through a combination of available excess capacity in existing facilities and construction of additional capacity in new facilities. Defining existing system capacity in terms of a single number is difficult. To improve the accuracy of the analysis, the system was divided into two different components (collection system and treatment system). Excess capacity in each component of the system is as follows.

Collection

Use of collection system capacity was evaluated using a hydraulic computer model of the District's collection system. The calculated percentage of existing collection capacity currently in use by existing development is 36.3 percent. Growth during the next 10 years is calculated to use an additional 5.7 percent, with the remaining 58.0 percent of existing capacity to be used by growth beyond the 10-year planning window.

Treatment

As documented in the Sewer System Master Plan (master plan), additional wastewater treatment capacity will be needed to meet the projected growth within the service area. The existing wastewater lagoons have a total estimated capacity of 3.35 million gallons per day (MGD). Current peak month, average day flows in the system are estimated to be 2.54 MGD. Therefore, the existing lagoons are 76.0 percent utilized by existing users.

Future wastewater treatment needs will be met through the combination of existing treatment capacity and new treatment capacity. Costs allocated to new users will be based on the average cost of available treatment capacity in the existing lagoons and in proposed wastewater treatment expansion. This approach equally distributes the cost of treatment capacity to future users. Based on this approach, 10-year growth will utilize 10.4 percent of the existing lagoon capacity, with 13.6 percent of the capacity allocated to growth beyond the 10-year planning window.

REQUIRED SYSTEM IMPROVEMENTS

Beyond available existing capacity, additional improvements required to serve growth are summarized in Table ES-4. To satisfy the requirements of Utah State law, Table ES-4 provides a breakdown of the percentage of future project costs attributed to existing and future users. For future users, capacity has been divided between capacity to be used by growth within the 10-year planning window of this IFFP and capacity that will be available for growth beyond the 10-year window.

Table ES-4
Sewer System Project Costs Allocated to Projected Development, 10-year Planning Window

CFP Project ID	Description	Estimated Total Project Cost	Percent to Existing	Percent to 10-yr Growth	Percent to Beyond 10-yr	Cost to Existing	Cost to 10yr	Cost to beyond 10yr
C1 - Reach 9B	Hurricane Major Interceptor Replacement – Reach 9B	$690,000	32.10%	4.43%	63.47%	$221,483	$30,544	$437,973
C1 - Reach 11	Hurricane Major Interceptor Replacement – Reach 11	$2,703,000	29.51%	4.08%	66.41%	$797,632	$110,311	$1,795,057
C20 - Reach 8A	Toquerville/La Verkin Trunk Line Replacement – Reach 8A	$589,000	3.65%	4.00%	92.35%	$21,509	$23,554	$543,937
C20 - Reach 9A	Toquerville/La Verkin Trunk Line Replacement – Reach 9A	$442,000	3.84%	3.97%	92.19%	$16,976	$17,548	$407,476
C20 - Reach 10A	Toquerville/La Verkin Trunk Line Replacement – Reach 10A	$161,000	3.85%	3.97%	92.18%	$6,198	$6,387	$148,415
C20 - Reach 11A	Toquerville/La Verkin Trunk Line Replacement – Reach 11A	$368,000	3.86%	3.97%	92.18%	$14,190	$14,598	$339,213
C24	Confluence Park Toquerville Pipeline Replacement	$608,000	0.00%	29.53%	70.47%	$0	$179,551	$428,449
E1	Pecan Valley Regional Lift Station	$1,039,000	4.18%	23.67%	72.15%	$43,401	$245,941	$749,658
E2	Pecan Valley Regional Force Main	$1,160,000	4.18%	23.67%	72.15%	$48,456	$274,582	$836,962
E3	Pecan Valley Sewer Main	$1,794,000	4.42%	25.04%	70.54%	$79,288	$449,301	$1,265,411
E4	Sand Hollow Regional Lift Station	$1,160,000	0.00%	18.89%	81.11%	$0	$219,079	$940,921
E5	Sand Hollow Regional Force Main	$2,415,000	0.00%	18.89%	81.11%	$0	$456,100	$1,958,900
E10	Hurricane Fields Sewer Main	$746,000	0.00%	38.46%	61.54%	$0	$286,923	$459,077
E11	Confluence Park Lift Station Inlet Pipe	$253,000	0.00%	29.53%	70.47%	$0	$74,715	$178,285
E12A	Confluence Park Lift Station – Phase A	$1,467,000	0.00%	29.53%	70.47%	$0	$433,227	$1,033,773
E13	Confluence Park Force Main	$757,000	0.00%	29.53%	70.47%	$0	$223,553	$533,447
E14	La Verkin to Confluence Park Transmission Line	$1,482,000	0.00%	29.53%	70.47%	$0	$437,657	$1,044,343
E15A	Confluence Park North Transmission Line – Phase A	$332,000	0.00%	29.53%	70.47%	$0	$98,045	$233,955
E16	La Verkin East Bench Transmission Line	$3,450,000	0.00%	3.50%	96.50%	$0	$120,862	$3,329,138
T1	Expand Facultative Lagoons with Additional Aerators	$135,000	0.00%	43.25%	56.75%	$0	$58,389	$76,611
T5	Confluence Park WRF - Phase 1	$26,450,000	0.00%	41.09%	58.91%	$0	$10,868,305	$15,581,695
PL	Update Master Plan and Associated Analyses	$94,795	0.00%	47.50%	52.50%	$0	$45,024	$49,771
	Total Costs	**$48,295,795**				**$1,249,133**	**$14,674,195**	**$32,372,467**

[1]Refer to Figures 7-1 and 7-2 from the master plan for more information on the location of each project.

SEWER IMPACT FEE FACILITIES PLAN

INTRODUCTION

Ash Creek Special Service District (ACSSD) has retained Bowen Collins & Associates (BC&A) to prepare an impact fee facilities plan (IFFP) for sewer collection and treatment services provided by the District. The purpose of an IFFP is to determine the public facilities required to service development resulting from new development activity. The IFFP is also intended to outline the improvements which may be funded through impact fees.

The analysis forming the basis of this IFFP has been taken from the District's Sewer System Master Plan (master plan). The reader should refer to the master plan for additional discussion of planning and evaluation methodology beyond what is contained in this IFFP.

Requirements for the preparation of an IFFP are outlined in Title 11, Chapter 36a of the Utah Code (the Impact Fees Act). Under these requirements, an IFFP shall accomplish the following for each facility:

1. Identify the existing level of service
2. Establish a proposed level of service
3. Identify excess capacity to accommodate future growth at the proposed level of service
4. Identify demands placed upon existing public facilities by new development
5. Identify the means by which demands from new development will be met
6. Consider the following additional issues
    a. revenue sources to finance required system improvements
    b. necessity of improvements to maintain the proposed level of service
    c. need for facilities relative to planned locations of schools

The following sections of this report have been organized to address each of these requirements.

EXISTING LEVEL OF SERVICE - 11-36a-302(1)(a)(i)

Level of service is defined in the Impact Fees Act as "the defined performance standard or unit of demand for each capital component of a public facility within a service area". This section discusses the level of service being currently provided to existing users.

Unit of Demand

The projected flow used to design and evaluate system components will vary depending on the nature of each component. For example, most treatment plant processes are designed based on peak month, average day flow. Conversely, sewer collection pipelines must be designed based on peak hour flow (function of diurnal flow variation). For the purposes of this analysis, it is useful to define these various demands in terms of Equivalent Residential Units (ERU). An ERU represents the wastewater production from a typical single-family residence. The basis of an ERU for historical flow rates is summarized in Table 1. Additional details regarding the calculation of values used in the definition of an ERU are contained in the master plan.

Table 1
ACSSD Service Area Historic Flows

Item	Value for Existing Conditions
Equivalent Residential Units (ERUs)	12,722
Domestic Wastewater Production, Peak Month, Average Day (mgd)	2.36
Infiltration (mgd)	0.18
Peak Month, Average Day Flow (mgd)	2.54
Peak Hour Flow[1] (mgd)	6.36
Flows per ERU	
Domestic Wastewater Production (gpd/ERU)	186
Average Day, Maximum Month Flow (gpd/ERU)	200
Peak Hour Flow[1] (gpd/ERU)	500
Average Indoor Water Use (gpd/ERU)	206

[1]Represents the estimated cumulative peak flow at the point of discharge. Observed peak flow will vary depending on the location in the system.

Performance Standard

Performance standards are those standards that are used to design and evaluate the performance of facilities. While the Impact Fees Act includes "defined performance standard" as part of the level of service definition, this report will make a subtle distinction between performance standard and level of service. The performance standard will be considered the desired minimum level of performance for each component, while the existing level of service will be the actual current performance of the component. Thus, if the existing level of service is less than the performance standard it is a deficiency. If it is greater than the performance standard it may indicate excess capacity. This section discusses the existing performance standards for the District. A subsequent section will consider the existing level of service relative to these standards.

To improve the accuracy of the analysis, this impact fee facilities plan has divided the system into two different components: pipeline capacity and treatment capacity. Each of these components has its own set of performance standards:

Pipeline Capacity. The master plan establishes that all sewer mains must have capacity to convey peak dry weather flows without exceeding 75% of the pipe's hydraulic capacity, using a Manning's roughness factor *n* of 0.013. This is approximately equal to a depth over diameter ratio of 0.70.

This allows for a small amount of extra capacity to be reserved in the pipeline to account for potential inflow into the system and other unknown fluctuations in flow. This design standard was used as the performance standard for pipeline capacity evaluation.

Treatment Plant Capacity. A treatment plant consists of a large number of different components. Each component may have different criteria for design depending on the nature of the component. For the majority of treatment related components, design is based on treating the average daily flow during the month of maximum flow. This is the same standard used by the State of Utah Department of Environmental Quality (UDEQ) when rating the capacity of a treatment plant.

Existing Level of Service

The existing level of service has been divided into the same two components as identified for the system performance standard (pipeline capacity and treatment capacity). Existing level of service values are summarized in Table 2 below. For comparison purposes, Table 2 also includes a summary of the existing performance standards.

Table 2
Existing Performance Standards and Level of Service for Various System Requirements

	Existing Performance Standard	Existing Level of Service
Pipeline Capacity		
Maximum Ratio of Peak Flow Depth to Pipe Diameter[1]	0.7	0.73[2]
Treatment Capacity		
Available Plant Capacity – Average Day, Maximum Month Flow (gpd/ERU)	200	263[3]

[1] During peak hour, dry weather sewer flow. A ratio of peak flow depth to pipe diameter of 0.7 corresponds to the pipe flowing at approximately 75% of full flow capacity.
[2] Because there are thousands of pipeline components, the value given is for the worst case only. All other components have a higher level of service. Only a couple of pipelines in the system do not currently meet the performance standard.
[3] Existing level of service represents level available, not necessarily level used. For example, the treatment being used per ERU is 200 gpd even though the amount currently available is 263 gpd per ERU.

As shown in the table, the District's pipeline capacity performance standard is higher than the existing level of service which indicates there is some deficiency in the existing system. However, this deficiency is associated with only a couple of pipelines in the existing system and excess capacity still exists in all other parts of the system. Excess capacity and curing of deficiencies will be discussed in subsequent sections of this report. Costs for projects to correct deficiencies that do not meet the required level of service will not be included as part of the impact fee as required by the Impact Fee Act.

PROPOSED LEVEL OF SERVICE - 11-36a-302(1)(a)(ii)

The proposed level of service is the performance standard used to evaluate system needs in the future. The Impact Fees Act indicates that the proposed level of service may:

1. diminish or equal the existing level of service; or
2. exceed the existing level of service if, independent of the use of impact fees, the District implements and maintains the means to increase the level of service for existing demand within six years of the date on which new growth is charged for the proposed level of service.

By definition, the proposed future level of service will be equal to the performance standard. No changes are proposed to the existing level of service. Table 3 presents the proposed level of service.

Table 3
Proposed Performance Standards and Level of Service for Various System Requirements

	Proposed Performance Standard	Proposed Level of Service
Pipeline Capacity		
Maximum Ratio of Peak Flow Depth to Pipe Diameter	0.7	0.7
Treatment Capacity		
Available Plant Capacity – Average Day, Maximum Month Flow (gpd/ERU)	200	200

EXCESS CAPACITY TO ACCOMMODATE FUTURE GROWTH - 11-36A-302(1)(A)(III)

Projected future growth will be met through a combination of available excess capacity in existing facilities and construction of additional capacity in new facilities. This section will identify available excess capacity to serve future growth in the District's existing collection and treatment facilities.

Collection

To calculate the percentage of existing capacity to be used by future growth in existing facilities, existing and future flows were examined in a hydraulic computer model of the sewer collection system. The method used to calculate excess capacity available for use by future flows is as follows:

1. **Calculate Flows –** The peak flow in each facility was calculated in the model for both existing and future flows. The capacity at a 0.7 depth to diameter ratio of each pipeline was also calculated.
2. **Identify Available Capacity –** Where a facility has capacity in excess of projected flows at buildout, the available capacity in the facility was defined as the difference between existing flows and buildout flows. Where the facility has capacity less than projected flows at buildout, the available capacity in the facility was defined as the difference between existing flows and the facility's maximum capacity.
3. **Eliminate Facilities without Excess Capacity –** For the planning window period (in this case, 10 years), the projected growth in flow during the planning window was compared against the facility's available capacity. Where the future flow exceeded the capacity of the facility, the available excess capacity was assumed to be zero. By definition, this corresponds to those facilities with deficiencies that are identified in the facilities plan. By assigning a capacity of zero, this eliminated double counting those facilities against new users.
4. **Calculate Percent of Excess Capacity Used in Remaining Facilities –** Where the future flow was less than the capacity of the facility, the percent of excess capacity being used in each facility was calculated by dividing the growth in flow in the facility (future flow less existing flow) by the total capacity (existing flow plus available capacity).
5. **Calculate Excess Capacity for the System as a Whole –** Each pipeline in the system has a different quantity of excess capacity to be used by future growth. To develop an estimate of excess capacity on a system wide basis, the capacities of each of these pipelines and their contribution to the system as a whole must be considered. To do this, each pipeline must first

be weighted based on its actual cost. To accomplish this, each pipeline has been weighted based on the product of its diameter and length (which increase linearly in cost). For example, a pipe that is 36 inches in diameter and is 4,000 ft. long will cost proportionally more than a pipe that is 10 inches in diameter and 300 ft. long. The excess capacity in the system as a whole can then be calculated as the sum of the weighted capacity used by future growth divided by the sum of total weighted capacity in the system.

Based on the method described above, the amount of excess capacity in existing facilities available to accommodate future growth and the demands placed on the existing facilities by new development activity has been calculated for each element in the system by BC&A. As a whole, the calculated percentage of existing capacity in system facilities that is currently being used by existing users is 36.3 percent. Demands associated with growth during the 10-year planning window is calculated to use an additional 5.7 percent of the available excess capacity, with the remaining 58.0 percent of existing excess capacity to be used by demands associated with growth beyond the 10-year planning window.

Treatment

As documented in the master plan, the District will need additional wastewater treatment capacity to meet the projected growth within the service area. The existing wastewater lagoons have a total estimated capacity of 3.35 million gallons per day (MGD). Current peak month, average day flows in the system are estimated to be 2.54 MGD. Therefore, the existing lagoons are 76.0 percent utilized by existing users.

Future wastewater treatment needs will be met through the combination of existing treatment capacity and new treatment capacity. Costs allocated to new users will be based on the average cost of available treatment capacity in the existing lagoons and in proposed wastewater treatment expansion projects. This approach equally distributes the cost of treatment capacity to future users. Based on this approach, 10-year growth will utilize 10.4 percent of the existing lagoon capacity, with 13.6 percent of the capacity allocated to growth beyond the 10-year planning window.

DEMANDS PLACED ON FACILITIES BY NEW DEVELOPMENT - 11-36a-302(a)(iv)

Growth within the District's service area and projections of sewer flows resulting from said growth is discussed in detail in the master plan. Growth in terms of equivalent residential units and dry weather sewer flows is summarized in Table 4.

Table 4
ACSSD Service Area Sewer ERU Projections

Year	Projected ERUs	Estimated Sewer Flows (MGD)
2021	12,722	2.54
2026	15,863	3.17
2031	19,301	3.86
2040	26,958	5.39
2050	35,755	7.15

INFRASTRUCTURE REQUIRED TO MEET DEMANDS OF NEW DEVELOPMENT - 11-36A-302(1)(a)(v)

To satisfy the requirements of state law, the effect of demand placed upon existing system facilities by future development was evaluated using the process outlined below. Each of the steps were completed as part of this plan's development.

1. **Existing Demand** – The demand existing development places on the District's system was estimated based on historic water use and flow records.
2. **Existing Capacity** – The capacity of existing facilities was estimated using pipe size and treatment capacity data provided by the District and a hydraulic computer model.
3. **Existing Deficiencies** – Existing deficiencies in the system were identified by comparing defined levels of service against calculated capacities. Two sections of pipe were identified as having an existing deficiency.
4. **Future Demand** - The demand future development will place on the system was estimated based on development projections as discussed in the master plan.
5. **Future Deficiencies** - Future deficiencies in the collection system were identified using the defined level of service and results from the computer model as discussed in the master plan.
6. **Recommended Improvements** – Needed system improvements were identified to meet demands associated with future development.

The steps listed above "identify demands placed upon existing public facilities by new development activity at the proposed level of service; and… the means by which the political subdivision or private entity will meet those growth demands" (Section 11-36a-302(1)(a) of the Utah Code).

10-Year Improvement Plan

In the master plan, capital facilities projects needed to provide service to various parts of the District service area in the future are identified. Many of these projects will need to be constructed in phases as development occurs. Only infrastructure to be constructed within a 10-year horizon will be considered in the calculation of impact fees to avoid uncertainty surrounding improvements further into the future. Tables 5 summarizes the projects identified in the capital facilities plan that will need to be constructed within the next ten years.

Table 5
Sewer System Project Costs Allocated to Projected Development, 10-year Planning Window

CFP Project ID	Description	Estimated Total Project Cost	Percent to Existing	Percent to 10-yr Growth	Percent to Beyond 10-yr	Cost to Existing	Cost to 10yr	Cost to beyond 10yr
C1 - Reach 9B	Hurricane Major Interceptor Replacement – Reach 9B	$690,000	32.10%	4.43%	63.47%	$221,483	$30,544	$437,973
C1 - Reach 11	Hurricane Major Interceptor Replacement – Reach 11	$2,703,000	29.51%	4.08%	66.41%	$797,632	$110,311	$1,795,057
C20 - Reach 8A	Toquerville/La Verkin Trunk Line Replacement – Reach 8A	$589,000	3.65%	4.00%	92.35%	$21,509	$23,554	$543,937
C20 - Reach 9A	Toquerville/La Verkin Trunk Line Replacement – Reach 9A	$442,000	3.84%	3.97%	92.19%	$16,976	$17,548	$407,476
C20 - Reach 10A	Toquerville/La Verkin Trunk Line Replacement – Reach 10A	$161,000	3.85%	3.97%	92.18%	$6,198	$6,387	$148,415
C20 - Reach 11A	Toquerville/La Verkin Trunk Line Replacement – Reach 11A	$368,000	3.86%	3.97%	92.18%	$14,190	$14,598	$339,213
C24	Confluence Park Toquerville Pipeline Replacement	$608,000	0.00%	29.53%	70.47%	$0	$179,551	$428,449
E1	Pecan Valley Regional Lift Station	$1,039,000	4.18%	23.67%	72.15%	$43,401	$245,941	$749,658
E2	Pecan Valley Regional Force Main	$1,160,000	4.18%	23.67%	72.15%	$48,456	$274,582	$836,962
E3	Pecan Valley Sewer Main	$1,794,000	4.42%	25.04%	70.54%	$79,288	$449,301	$1,265,411
E4	Sand Hollow Regional Lift Station	$1,160,000	0.00%	18.89%	81.11%	$0	$219,079	$940,921
E5	Sand Hollow Regional Force Main	$2,415,000	0.00%	18.89%	81.11%	$0	$456,100	$1,958,900
E10	Hurricane Fields Sewer Main	$746,000	0.00%	38.46%	61.54%	$0	$286,923	$459,077
E11	Confluence Park Lift Station Inlet Pipe	$253,000	0.00%	29.53%	70.47%	$0	$74,715	$178,285
E12A	Confluence Park Lift Station – Phase A	$1,467,000	0.00%	29.53%	70.47%	$0	$433,227	$1,033,773
E13	Confluence Park Force Main	$757,000	0.00%	29.53%	70.47%	$0	$223,553	$533,447
E14	La Verkin to Confluence Park Transmission Line	$1,482,000	0.00%	29.53%	70.47%	$0	$437,657	$1,044,343
E15A	Confluence Park North Transmission Line – Phase A	$332,000	0.00%	29.53%	70.47%	$0	$98,045	$233,955
E16	La Verkin East Bench Transmission Line	$3,450,000	0.00%	3.50%	96.50%	$0	$120,862	$3,329,138
T1	Expand Facultative Lagoons with Additional Aerators	$135,000	0.00%	43.25%	56.75%	$0	$58,389	$76,611
T5	Confluence Park WRF - Phase 1	$26,450,000	0.00%	41.09%	58.91%	$0	$10,868,305	$15,581,695
PL	Update Master Plan and Associated Analyses	$94,795	0.00%	47.50%	52.50%	$0	$45,024	$49,771
	Total Costs	**$48,295,795**				**$1,249,133**	**$14,674,195**	**$32,372,467**

[1]Refer to Figures 7-1 and 7-2 from the master plan for more information on the location of each project

Project Cost Attributable to Future Growth

To satisfy the requirements of state law, Tables 5 provides a breakdown of the capital facilities projects and the percentage of the project costs attributed to existing users, users within the projected 10-year growth window, and users beyond the 10-year growth window. As defined in Section 11-36a-102(15), the impact fee facilities plan should only include the proportionate share of "the cost of public facilities that are roughly proportionate and reasonably related to the service demands and needs of any development activity." In general, cost distribution for each project has been calculated using the growth projections described in the master plan and the results from the hydraulic computer model. Additional notes regarding specific projects are found below.

- **Project C1 and C20 (multiple reaches)** – Cost distribution was determined by analyzing current and projected future wastewater flows. These projects involve replacing an existing pipe with a new, larger diameter pipe sized to meet future flows. Because existing users will still utilize these pipes within the system and are being provided with a new facility that will last further into the future than the one currently in place, a percentage of the project is allocated to existing users and not included in the cost allocated to future users. The percentages in Table 5 reflect the respective utilization of each project by existing and future users.
- **Project T-1 and T-5** – Treatment capacity needed to accommodate future growth will be met through the combination of existing facilities and new facilities. The cost of treatment allocated to future users has been determined by calculating the average cost of existing and future treatment capacity. This approach evenly distributes the cost of treatment to growth over the next 10 years, regardless of where growth is added into the system. The following sections provide additional information on how the costs of each project were allocated to future users:
    - **Project T-1**: Treatment capacity within the lagoons that is used by future growth consists of existing capacity and new capacity added by Project T-1. Project T-1 includes a relatively inexpensive addition to the lagoons that provides a significant increase in capacity. To determine the cost of treatment at the lagoons, the average cost of all the lagoon treatment capacity (existing and future) was considered. This was done in order to evenly distribute the cost of what has already been invested into the existing lagoon system together with the proposed T-1 expansion.
    - **Project T-5**: The Confluence Park WRF is planned for 2 phases of construction. The initial phase (Phase 1) will have a treatment capacity of 1.5 MGD, and a future expansion (Phase 2) will increase the capacity to 3 MGD. Although each phase will add a nominal 1.5 MGD worth of capacity to the system, Phase 1 will include certain components that are sized for the full 3.0 MGD design. This is a typical engineering practice that generally results in more cost-effective design and construction. Certain buildings, hydraulic structures, or pipelines can be sized and constructed in advance to avoid constructing a full parallel system in the future.

      While this approach will ultimately result in a more cost-effective approach overall, it does present an inequality in the costs of Phase 1 and Phase 2. While both phases add the same nominal capacity to the system, Phase 1 incurs a higher overall cost for the reasons previously discussed. On a "cost per gallon of treatment" basis, Phase 1 will be significantly more expensive. In order to equally distribute the cost of the new plant to future users, the full cost and capacity of the 3.0 MGD facility was considered. This approach creates an equitable distribution of costs to all future users and

prevents users that buy into the Phase 1 project from paying more than those that buy into the 2nd Phase in the future.

Only the costs of improvements to be constructed within the next 10 years have been included in this IFFP, which includes Phase 1 of the Confluence Park WRF. The cost of Phase 2 has not been included in this IFFP, but the percentage of Phase 1 attributable to growth over the next 10 years has been adjusted in accordance with the approach explained above.

- **Project C24, E11, E12A, E13, E14, E15A** – Each of these projects are collection system improvements that are needed as part of the Confluence Park WRF. New pipelines and pump stations need to be added to the system to convey flow from the existing collection system to the new treatment plant. These improvements are, effectively, part of the overall treatment plant project. This considered, the percentages shown in Table 5 reflect the proportional utilization of the treatment plant. Like Project T-5, the percentages have been adjusted to fairly distribute project costs over the full 3.0 MGD capacity of the Confluence Park WRF, not just the Phase 1 improvement. As previously discussed, this prevents users in the near future from paying more for treatment facilities than users that come online during the 2nd Phase of the project.
- **Project E1, E2, E3, E4, E5, E10, E16** – Cost distribution for these projects is based on the existing and future utilization of each facility. Utilization percentages come from the hydraulic computer model results for existing and future scenarios.
- **Project PL** – Utah code allows for the cost of planning and engineering associated with impact fee calculations to be recovered as part of an impact fee. The percentages shown reflect the portion of the planning work that directly benefits growth within the 10-year window and growth beyond the 10-year planning window.

Basis of Construction Cost Estimates

The costs for projects to be completed within ten years have been estimated based on past experience with projects of a similar nature. Details associated with the cost estimates used for each project are contained in the master plan.

ADDITIONAL CONSIDERATIONS

MANNER OF FINANCING - 11-36a-302(2)

The District may fund the infrastructure identified in this IFFP through a combination of different revenue sources.

Federal and State Grants and Donations

Impact fees cannot reimburse costs funded or expected to be funded through federal grants and other funds that the District has received for capital improvements without an obligation to repay. Grants and donations are not currently contemplated in this analysis. If grants become available for constructing facilities, impact fees will need to be recalculated and an appropriate credit given. Any existing infrastructure funded through past grants will be removed from the system value during the impact fee analysis.

Bonds

None of the costs contained in this IFFP include the cost of bonding. The cost of bonding required to finance impact fee eligible improvements identified in the IFPP may be added to the calculation of the impact fee. This will be considered in the impact fee analysis.

Interfund Loans

Because infrastructure must generally be built ahead of growth, there often arises situations in which projects must be funded ahead of expected impact fee revenues. In some cases, the solution to this issue will be bonding. In others, funds from existing user rate revenue will be loaned to the impact fee fund to complete initial construction of the project and will be reimbursed later as impact fees are received. Consideration of potential interfund loans will be included in the impact fee analysis and should also be considered in subsequent accounting of impact fee expenditures.

Impact Fees

It is recommended that impact fees be used to fund growth-related capital projects as they help to maintain the proposed level of service and prevent existing users from subsidizing the capital improvement needs for new growth. Based on this IFFP, an impact fee analysis will be able to calculate a fair and legal fee that new growth should pay to fund the portion of the existing and new facilities that will benefit new development.

Developer Dedications and Exactions

Developer exactions are not the same as grants. If a developer constructs a system improvement, dedicates land for a system improvement identified in this IFFP, or dedicates a public facility that is recognized to reduce the need for a system improvement, the developer will be entitled to an appropriate credit against that particular developer's impact fee liability or a proportionate reimbursement.

If the value of the credit is less than the development's impact fee liability, the developer will owe the balance of the liability to the District. If the recognized value of the improvements/land dedicated is more than the development's impact fee liability, the District must reimburse the difference to the developer.

It should be emphasized that the concept of impact fee credits pertains to system level improvements only. Developers will be responsible for the construction of project improvements (i.e. improvements not identified in the impact fee facilities plan) without credit against the impact fee.

NECESSITY OF IMPROVEMENTS TO MAINTAIN LEVEL OF SERVICE - 11-36a-302(3)

According to State statute, impact fees cannot be used to correct deficiencies in the District's system and must be necessary to maintain the proposed level of service established for all users. Only those facilities or portions of facilities that are required to maintain the proposed level of service for future growth have been included in this IFFP. Additionally, any portion of projects being used to cure existing deficiencies that will be paid for through future user rates will be accounted for through an impact fee credit to be calculated as part of the impact fee analysis. This will result in an equitable fee as future users will not be expected to fund any portion of the facilities that will benefit existing residents.

IMPACT FEE CERTIFICATION - 11-36a-306(1)

This IFFP has been prepared in accordance with Utah Code Title 11, Chapter 36a (the "Impact Fees Act"), which prescribes the laws pertaining to the imposition of impact fees in Utah. The accuracy of this IFFP relies in part upon planning, engineering, and other source data, provided by the District and its designees.

In accordance with Utah Code Annotated, 11-36a-306(1), Bowen Collins & Associates makes the following certification:

I certify that the attached impact fee facilities plan:

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. cost 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; or
   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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