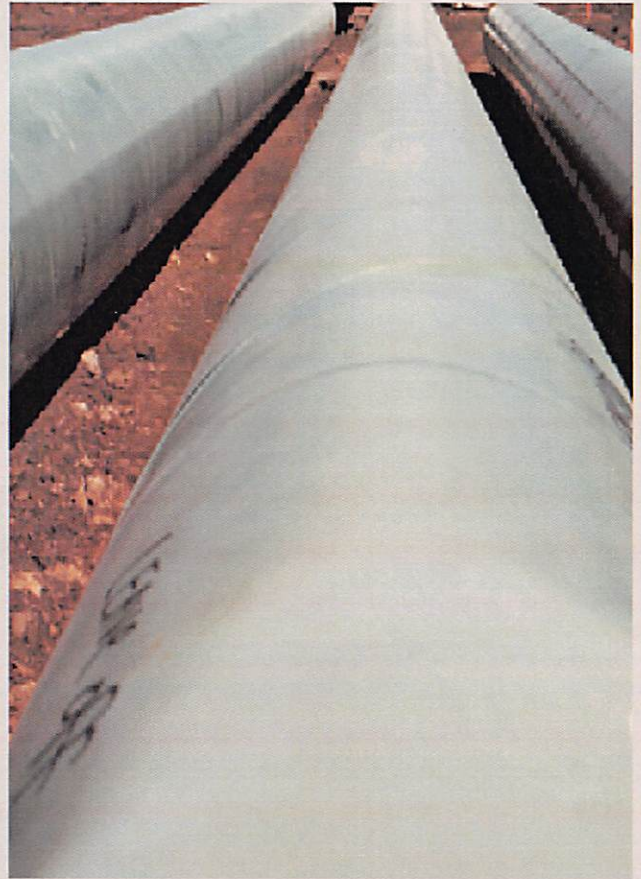


LAKE POINT IMPROVEMENT DISTRICT

Sewer System Impact Fee Facilities Plan



Adopted: June 11, 2020



WARD ENGINEERING GROUP

Planning • Engineering • Surveying

SEWER SYSTEM IMPACT FEE FACILITIES PLAN LAKE POINT IMPROVEMENT DISTRICT

INTRODUCTION

Lake Point Improvement District (reference hereafter as LPID) is located in unincorporated north Tooele County, just off of Interstate 80 (Exit 99) and State Route 36. LPID provides services for wastewater collection and treatment. The District presently comprises 3,967 acres, consisting of approximately 488 residential user accounts and 14 commercial and industrial accounts at the end of 2019.

The District was legally established in 1972 and the first two cells to the treatment lagoons were constructed by Exxon Mobile to serve the commercial district. A five-acre third cell was added in 1987. A Federal NPDES Discharge Permit (UT0020231) was issued in 1989 to allow the district to discharge its waters to an unnamed ditch toward the old salt plant evaporation ponds. In April 2005, (8) Aeromix Tornado Aerators were added in the primary cell to eliminate odor problems and to increase the capacity of the lagoons, thus extending the life of the existing lagoon system. Disinfection is accomplished with chlorination. The system's treatment facility now consists primarily of a 9-acre aerated lagoon with 7.5- and 5.0-acre polishing lagoons. Presently, LPID manages an average of approximately 250,000 gpd. The current NPDES Permit expires on April 20, 2020.

PURPOSE AND NEED

Impact fees are used to help reduce the economic burden of the infrastructure costs that new developments incur due to the expansion of the public service network. Therefore, a Sewer Master Plan update was prepared for LPID by Ward Engineering Group (WARD) January 2020. The Master Plan includes an inventory and analysis of existing sewer treatment facilities, pump stations, and collection pipelines. It identifies deficiencies within each component of the system, and describes future capital facility projects to be funded and constructed, focusing on a 20-year planning period.

The purpose of this document (IFFP) is to reiterate and more clearly identify the existing and future user demands on the sewer system and the means by which the demands will be satisfied. The IFFP also addresses the capital facility projects which will be funded by impact fees. The analysis forming the basis of this document is the January 2020 Sewer Master Plan.

Certain specific requirements and objectives of an IFFP are stated in the Utah Code (11-36a-302), and generally include the major points.

- Identify the existing level of service
- Establish a proposed level of service
- Identify any excess capacity to accommodate future growth at the proposed level of service
- Identify demands placed upon the existing public facilities by new development activity at the proposed level of service
- Identify the means by which the political subdivision will meet those growth demands
- Consider revenue sources to finance impacts on system improvements

Each of these points are addressed in the following sections.

EXISTING LEVEL OF SERVICE

The Level of Service is defined by Utah Code as, "...the defined performance standard of a unit of demand of each capital component of a public facility within a service area".

Service Area

The LPID Service Area is bounded by the district's established political boundary, as further illustrated in the 2020 Sewer Master Plan, Ex-04 (included in Appendix 1 of this document). For clarification, LPID contains multiple land uses and zoning districts. However, for purposes of establishing an impact fee, LPID is defined as one (1) single Service Area.

Unit of Demand

It is typical for a Sewer System to define a unit of demand as an Equivalent Residential Unit, or ERU. LPID follows this approach and the definitions of "demand", and the parameters of analysis are more extensively addressed in the 2020 Sewer Master Plan which are summarized below.

Sewer Modeling Parameters:

- Collection System Average Daily Flow (ADF)
 - ✓ Existing Core Area = 492 gpd/ERU
 - ✓ Existing Non-Core Area = 346 gpd/ ERU
 - ✓ All Future District-Wide Development = 346 gpd/ERU
- Peak Flow Factor = 4.0

All commercial, institutional, and industrial land uses are converted to ERUs for uniformity and simplification in calculating and reporting user demands and levels of service.

Table 1 below contains the number of existing and projected ERUs within the district for the stated planning periods.

Table 1 – District ERUs

ZONING	TOTAL AREA	DEVELOPED		UNDEVELOPED		TOTAL ERUs at BUILDOUT
		AREA	ERUs	AREA	ERUs	
RR-1	1552.81	787.17	488	765.64	613	1,101
MD	388.03	88.64	1	299.39	978	979
MG	895.73	207.17	5	688.56	2250	2,255
A-20	55.41	0	0	55.41	181	181
MU-40	793.94	36.1	0	757.84	38	38
CG	38.61	16.14	0	22.47	73	73
CH	241.1	137.09	174	104.01	340	514
CN	1.03	0	1	1.03	3	4
Total	3966.66	1272.31	669	2694.35	4476	5,145



Performance Standards

Performance standards are defined according to two separate system components, Collection Capacity, and Treatment Capacity.

✓ **Collection Capacity**

Sewer collection systems and pump stations are, and must be sized to convey the peak sewer flows from sources of sewer generation to the sewer treatment facility.

Sewer Collection Pipelines (UAC R317-3-2)

- Minimum Size = 8-inch diameter
- Depth to diameter ratio not to exceed 0.67 = 79% full flowing pipe
- Minimum scour velocity = 2 feet per second (Manning's "n" value of 0.013)
- Pipe Infiltration = 200 gallons per mile per day per inch of pipe diameter (Civil Engineering Reference Manual for the PE Exam, 7th Addition page 28.2)
- Maximum Velocity = 15 feet per second (velocities greater than 15 feet per second require special provisions against displacement by erosion and shock.
- Minimum Slopes (see Table 2)

Table 2: Minimum Sewer Slopes

Sewer Size (inch)	Minimum Slope (ft/ft)
8	0.00500
9	0.00285
10	0.00248
12	0.00194
14	0.00158
15	0.00150
16	0.00132
18	0.00113
21	0.00092
24	0.00070
27	0.00066
30	0.00057
36	0.00045

Source UAC R317-3-2.3(D)(4), except 8" pipes, which require a minimum of 0.05.

Pump Stations (2020 Master Plan)

- Average Daily Flow
 - ✓ Existing Core Area = 0.34 gpm/ERU
 - ✓ Existing Non-Core Area = 0.24 gpm/ ERU
 - ✓ All Future District-Wide Development = 0.24 gpm/ERU
- Peak Flow Factor = 4.0
- Peak Flow
 - ✓ Existing Core Area = 1.36 gpm/ERU
 - ✓ Existing Non-Core Area = 0.96 gpm/ ERU
 - ✓ All Future District-Wide Development = 0.96 gpm/ERU



✓ Treatment Capacity

Hydraulic Capacity (2020 Sewer Master Plan)

- Average Daily Flow (ADF) = equivalent modeling parameter for collection system.
- Peak Flow Factor = Not Applicable

Biological Capacity (Organic Loading) (UAC R317-3-4-C.1.at 3.23 persons per ERU)

- BOD = 0.17 lb/day/capita, or 0.55 lb/day/ERU
- BOD = 200 mg/L/capita/day, or 646 mg/L/ERU/day
- TSS = 0.20 lbs/day/capita, or 0.65 lb/day/ERU
- TSS = 250 mg/L/capita/day, or 808 mg/L/ERU/day

PROPOSED LEVEL OF SERVICE

As stated in the Impact Fee Act: Section 11-36a-302.1.b and 11-36a-302.1.c.i: the proposed level of service may:

- "Diminish or equal the existing level of service; or
- Exceed the existing level of service if, independent of the use of impact fee, the City 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.....".

It is determined by the District that all levels of proposed service will be unchanged for future development except as defined by the following performance standards for proposed developments, as identified in the 2020 Sewer Master Plan.

Performance Standards

✓ Treatment Capacity

Hydraulic Capacity

- Average Daily Flow (ADF) = 346 gpd/ERU
- Peak Flow Factor = Not Applicable

EXCESS EXISTING CAPACITY TO ACCOMMODATE FUTURE GROWTH

Future users will be served by a combination of excess capacity in the existing system, as well as new facilities. This section addresses the excess capacity in the existing system available to future development. Users are defined and evaluated based on 3 categories.

1. Existing Users
2. Future Users (Developed in 10-years)
3. Future Users (Developed beyond 10-years)

Determining available system capacity is done for each user category defined above and separated into two main divisions.

1. Collection System
 - a. Pipelines
 - b. Pump Stations
2. Treatment System
 - a. Hydraulic
 - b. Biologic



- c. Disinfection
- d. Other Miscellaneous Process and Components

Collection System

The following steps were used to calculate the available capacity for each category of user (Existing, 10-year, and beyond 10-year).

Pipelines

1. Identify Pipes Having Potential for Excess Capacity:

- a. Identify all existing sewer lines greater than 8-inches. No excess capacity was factored into the analysis for pipes 8-inches in diameter or smaller because the State of Utah, Division of Water Quality requires no less than 8-inches for new sewer lines (UAC R317-3-2.3a.1). Therefore, the required minimum pipe size supersedes the idea of accounting for excess capacity. Only pipe lines 10-inches in diameter or larger are defined as having potential excess capacity.
- b. Generally speaking, all pipelines 10 inches and greater, comprise the basin trunk lines and outfall sewers within the District. The District was divided into 6 sewer basins, which are illustrated in Figure 1. The trunk lines and outfall sewers are depicted in Figure 2.
- c. Trunk lines and outfall sewers having excess capacity, were evaluated based on items 2-5, which follow.

2. Calculate Peak Flows:

The existing and future peak flows within the collection system for each pipe segment identified were calculated as part of the system modeling prepared for the 2020 Sewer Master Plan. These flows were used to identify available capacity for future users.

3. Identify System Capacities:

- a. The capacity of a sewer line is defined by a depth to diameter ratio (d/D), where the capacity of a sewer pipe is based on a ratio of 0.67 (performance standards defined in the 2020 Sewer Master Plan).
- b. Furthermore, the capacity of each trunk line and outfall sewer, is governed by the pipe segment or segments with the limiting slope and limiting diameter. For instance, a 1.5-mile trunk line may have several pipe diameters and a limiting segment slope of 0.15%. Even though diameters and slopes downstream of the limiting segment(s) may be larger and steeper, having a calculated excess capacity, such capacities are unavailable because of the limiting capacities in the critical pipe segment(s).

4. Eliminate Facilities without Existing Excess Capacity:

Identify eligible pipe segments that have existing peak flows which are less than the pipe capacities. These are pipe segments with available capacity for future users. Pipes that have existing peak flows equal to or greater than pipe capacities are further eliminated.

5. Assigning a Value to Used Capacity:

Pipe capacity is not equal in value for each pipe segment. For example, a 24-inch diameter pipe that is 1,000 feet long has more value than a 10-inch pipe that is 200 feet long. Therefore, it is necessary to establish a proportional value for each pipe segment, which can be associated with the used capacity. In order to do this, a value has been calculated for each pipe segment based on its cost to construct. The used capacity of each segment is then expressed as a percentage of the overall capacity. Finally, the overall cost is weighted with the used system capacity and is calculated as a weighted percentage.

$$\%Cap = \frac{\sum_{i=1}^n (\%Cap_n * \$n)}{\sum_{i=1}^n \$n}$$

The used pipeline capacity (existing users) and projected used pipeline capacity (10-year and beyond 10-year users), is expressed as a percentage of the overall pipeline capacity in Table 3 below.



Table 3: Existing Collection System - Pipeline Capacity

Category of User	Used Capacity (%)
Existing	62.2%
10-year	5.9%
Beyond 10-year	31.9 %
Total	100.0%

Pump Stations

LPID currently has three collection system pump stations. Information for these, including pumping capacity and location, is provided in Table 4.

Table 4: Existing Collection System Pump Stations

Pump Station	Serving Basin	Equipped Capacity (gpm)
Regional Pump Station	1,2,3,6	800
Pump Station No. 1	1	250
Pump Station No. 4	4,5	350

Basis of Used Capacity

- 1) As shown, the three pump stations serve only those ERU's within certain sewer basins. However, because the district comprises only one service area, the available capacity must be distributed among all future users in the district.
- 2) In order to determine the number of future 10-year users, the variable growth rate used in the 2020 Master Plan was used to project the number of 10-year users, which was a 45% increase from existing.
- 3) Using this growth, the projected used capacity in the pump stations for 10-year users will also be a 45% increase.
- 4) The remaining capacity is therefore assigned to users beyond 10 years.
- 5) The calculated used capacities are expressed as a percentage in Table 5.

Table 5: Existing Collection System Pump Station Capacity

Pump Station	Existing Capacity (ERUs)*	Percent to Existing Development	Percent to 10-yr	Percent Existing Beyond 10-yr
Regional Pump Station	788	64.1%	28.8%	7.1%
Pump Station No. 1	255			
Pump Station No. 4	352			

*Source = 2020 Sewer Master Plan, Table 4.4.3.2C.

**Percentage capacities are based on a combined ERU total of 1395 because district comprises only 1 service area.



Treatment Capacity

The treatment system consists of three lagoons, a 7.64-acre primary aerated lagoon, a 6.46-acre secondary facultative lagoon, and a 4.89-acre secondary facultative lagoon. Cell #1 contains aeration. Cells #2 and #3 do not. The District currently operates a tablet chlorination system consisting of two tubes and a small enclosed contact chamber.

The following subsections describe the used capacity for existing users, 10-year conditions, and beyond 10-year conditions.

Hydraulic Capacity

Based on the performance standards previously stated, Table 6 identifies the used hydraulic treatment capacities. There are presently 567 ERUs contributing to the treatment process. The 10-year projection is 1,296 ERUs based on the projections provided in the 2020 Sewer Master Plan. The projections beyond 10 years consist of the remaining available existing capacity.

Table 6: Existing Hydraulic Treatment Capacity

Hydraulic Treatment Capacity (MGD)	Existing Used Capacity (ERUs)	Percent to Existing Development (%)	Percent to 10-yr	Percent Existing Beyond 10-yr
1.31	*567	15.1%	19.5%	65.4%

*Source: 2020 Sewer Master Plan (2017 Data)

Biologic Capacity

Based on the performance standards previously stated, Table 7 identifies the used biological treatment capacities.

Table 7: Existing Biological Treatment Capacity

	Biologic Treatment Capacity (lbs/day)	Existing Capacity (ERUs)	Percent to Existing Development (%)	Percent to 10-yr	Percent Existing Beyond 10-yr
BOD	*567	1025	54.9%	45.1%	0.0%

*Source: Lagoon Aerators Design Study Report dated April 2004. State Standard BOD Loading rate = 0.17 PPD per person (UAC R317-3-4.C.1a) at 3.23 persons per ERU

Disinfection Capacity

Based upon considerations presented in the 2020 Master Plan, the existing chlorination system is considered to be at capacity. Therefore, no available existing system capacity is accounted for in the 10-year and beyond time frames.



Table 8: Existing Disinfection Capacity

	Percent to Existing Development (%)	Percent to 10-yr	Percent Existing Beyond 10-yr
Disinfection System	100%	0.0%	0.0%

*Source: 2020 Sewer Master Plan.

DEMANDS PLACED ON FACILITIES BY NEW DEVELOPMENT

A demographics analysis of Lake Point's existing and future population, land-use, development patterns, and development potential was conducted by Ward Engineering Group and made a part of the 2020 Sewer Master Plan. This analysis was used to estimate future wastewater generation and establish future infrastructure requirements driven by future development. Refer to the district's Master Plan for a complete presentation of the analysis and recommendations.

To summarize the findings, the population of Lake Point beginning in 2019 was estimated to be 1,576 with an average of 3.23 persons per household. The projected population beginning in 2029 (10-year planning period) is 3,004, and the projected population beginning in 2039 (20-year planning period) is 3,844. Based on this criterion, together with the projected non-residential future growth, Table 9 describes the projected future ERUs and unit demands within the district.

Table 9: Future Sewer Projections

Year	*ERUs	System Average Day Flow (MGD)
2019	669	0.25
2029	1,296	0.45
2039	1,659	0.57

*ERUs calculated based on Table 1.

MEANS BY WHICH THE DISTRICT WILL MEET THE DEMANDS OF NEW DEVELOPMENT

One of the primary objectives of the 2020 Sewer Master Plan was to determine the required infrastructure for future development. In order to achieve this objective, several steps of evaluation and consideration were required. Following is a brief description taken from the Sewer Master Plan describing the steps and processes used to generate a list of capital sewer improvement projects needed to meet future demands.

- Demographics – An analysis was performed of the current and projected population and its distribution.
- Capacity Evaluation
 - ✓ Existing Conditions – A detailed description was prepared of the District's existing sewer system, including; present demands, collection and treatment information, and requirements based on demands. A hydraulic model of existing conditions was prepared, and identification of existing system deficiencies was generated.
 - ✓ Future Conditions – A detailed description was prepared of the District's future sewer system, including; future demands, collection and treatment information, and requirements based on demands. A hydraulic model of future conditions was prepared, and identification of future system needs was generated.



- Capital Facility Projects – A description of infrastructure projects and estimates of capital costs required to mitigate deficiencies in the sewer system was prepared.

A list of the capital improvement projects is provided in Table 10. A corresponding map (EX-08) is provided in Appendix 1 illustrating the master planned sewer system and the capital facilities projects. These projects are derived from those presented in the Sewer Master Plan.

Capital Improvement Projects

Table 10: Sewer – Capital Improvement Projects (See EX-08 Appendix 1)

Project No.	Recommended Improvement and Description	Estimated Cost	Construction Date
C-1 (IF)	Sewer line to Lake Point Vistas - Construct new 15-inch sewer line from Canyon Road to Center Street with a connection to Lake Point Vistas. This line will bypass the existing Center Street 8-inch sewer line. This line will also eliminate a substandard condition where the Lake Point Vista's existing 15-inch line connects to the Center Street 8-inch Line	\$311,825.93	2025
C-2 (PIF)	Canyon Road Sewer Line - Replace existing 8-inch sewer line segment and upsize with a 10-inch sewer line	\$8,686.08	2025
C-3 (PIF)	Basin 4 Sewer Trunk Line - Replace existing 8-inch sewer line segment and upsize with a 10-inch sewer line. Replace an existing 8-inch sewer along the east side of SR-36 and upsize to a new 24-inch sewer line. Abandon the existing 8-inch sewer crossing SR-36 to Pump Station No. 4.	\$193,548.96	2025
C-4 (IF)	Basin 4 Sewer Trunk Line Extension - Extend a new 24-inch sewer line along SR-36 from the existing SR-36 crossing to a new SR-36 crossing, which extends to the existing treatment plant and new pump station. The purpose of the extension to the north is to provide adequate gravity operated service within basin 4.	\$1,016,028.00	2025
C-5 (PIF)	Sunset Road Sewer Line - Replace a segment of existing 8-inch sewer line and upsize with a new 10-inch line	\$12,240.00	2021
C-6 (IF)	Basin 3 SR-36 Crossing - Abandon existing 8-inch sewer line crossing SR-36 and construct a new 10-inch sewer crossing SR-36 and connecting back to an existing 10-inch sewer on the west side of the highway.	\$353,306.40	2021
C-7 (PIF)	Basin 3 - Sewer Trunk Line along I-80 - Replace an existing 12-inch sewer line running along the east side of I-80 and upsize to a new 18-inch sewer line, connecting to the Regional Pump Station.	\$15,600.00	2025
C-8 (PIF)	Basin 2 Trunk Line - Regional Pump Station to SR-36 - Replace an existing 12-inch sewer line from SR-36 to the Regional Pump Station and upsize to a new 21-inch sewer line, including a new bore across SR-36.	\$76,260.00	2021



C-9 (PIF)	Basin 2 Trunk Line along Saddle Back Blvd. - Replace an existing 12-inch sewer line along Saddleback Boulevard from Mountain View Road to SR-36 and upsize with a new 21-inch sewer line.	\$149,100.00	2021
C-10 (PIF)	Basin 1 Sewer Trunk Line - Replace an existing 8-inch sewer line from the east side of SR-36 to Pump Station No. 1 with a new 10-inch sewer line.	\$26,856.00	2025
C-11 (PIF)	Basin 5 East Sewer Line - Upsize future developer's new 8-inch sewer line with a 15-inch sewer line. The location and extents of this line is unknown.	\$91,710.00	2040
C-12 (PIF)	Basin 5 West Sewer Line - Upsize future developer's new 8-inch sewer line with a 15-inch sewer line - The location and extents of this line is unknown.	\$154,050.00	2040
C-13 (NIF)	Sunset Road Sewer Line Replacement - Replace an existing segment of 8-inch sewer line with a new 8-inch sewer line at an increased slope of 0.5% or greater. Project is not the result of any capacity deficiency for either existing or master planned improvements.	\$69,171.50	2021
C-14 (IF)	Collection System Flow Monitoring - Install permanent flow monitoring equipment upstream of the pump stations scada data collection.	\$233,100.00	2025



Project No.	Recommended Improvement and Description	Estimated Cost	Construction Date
PS-1 (IF)	Pump Station No.1 Replacement - Replace Pump Station No.1 to serve Basin 1. The existing pump station has the capacity to serve both the existing and master planned flows. The existing pump station is approximately 35 years and is reaching its service life expectancy.	\$607,050.00	2025
PS-2 (IF)	Regional Pump Station Upgrades - This project will consist of adding an additional pump to double the capacity of the pump station, which will be 1,575 ERUs (equipped capacity =1,600 gpm). The regional pump station is anticipated to receive 1,469 ERUs east of SR-36.	\$162,400.00	2025
PS-3 (IF)	Pump Station No. 4. Replacement - Abandon existing Pump Station No. 4 and construct a new pump station north of the existing pump station. As previously discussed, shifting the pump station to the north provides better gravity operated service to Basin 4.	\$1,465,380.00	2025
PS-4 (IF)	Basin 5 Pump Station - Construct a new pump station to serve Basin 5 development. The existing Pump Station No. 4 is approximately 20 years old. The new pump station should be constructed to meet the demands of Basin 5, together with a force sewer main line and new inlet structure at Cell 1 of the Treatment Lagoons.	\$1,908,640.00	2040



Project No.	Recommended Improvement and Description	Estimated Cost	Construction Date
TR-1 (IF)	Upsize Lagoon Interconnecting Pipes – Re-construct the lagoon interconnecting pipes to allow for the increase of flow between the Lagoons.	\$323,900.00	2022
TR-2 (IF)	Aeration Upgrades - Install 9 additional TORNADO, aspirating-type aerators, or equivalent to match the existing 8 aerators currently installed. This project extends the capacity of the system for a projected 20-year growth period (for a total of 1,679 ERUs). It is anticipated that an additional 7 aerators will be needed (the maximum number) beyond the 20-year planning period.	\$476,325.00	2022
TR-3 (IF)	Disinfection System - Construct a new Hypochlorite disinfection system with redundant contact chambers and a new earthen ditch and sampling station. It is recommended that the system be designed for the 20-year planning period with room to expand. It is noted that no de-chlorination system is master planned. However, as with the phosphorus 2020 rules, it will be critical for the District to maintain a status of discharge that does not received by any “water of the state” (the Great Salt Lake). If this is reclassified, it is possible that de-chlorination may be required.	\$1,450,440.00	2020
TR-4 (IF)	Phosphorus Removal – Construct a Phosphorus removal technology (Phosbox or Equivalent) to bring effluent concentrations of Phosphorus down to 1 mg/l as established by the state of Utah.	\$1,163,940.00	2024

Planning Period

The Sewer Master Plan and this IFFP describe population projections and future development for both a 10-year planning period and beyond 10 years. Impact fees and other potential funding sources described in this IFFP are for projects that are anticipated to be needed within the 10-year planning period (by 2029).

Impact Fee Eligibility

The district, in its 2020 Master Plan, has identified future capital improvement projects according to three types:

- 1) Partial Impact Fee Eligible (PIF)
- 2) Impact Fee Eligible (IF)
- 3) Not Impact Fee Eligible (NIF)

✓ **Partial Impact Fee Eligible**

These projects are identified as those future distribution system improvements that will be constructed as part of a developer's normal development process, but will have certain



segments that need to be upsized for regional capacity and service. For example, a future subdivision typically must construct 8-inch sewer lines within its boundary. However, it is identified on the master plan that a specific sewer line within the subdivision must connect to adjacent future subdivisions to convey additional flow than that required for the individual subdivision. Therefore, it must be upsized to a pipe diameter larger than 8 inches. The developer is thus responsible to construct the 8-inch pipeline and all of its associated appurtenances, and the district will pay for the material cost to upsize the pipeline according to the master plan. The material upsize costs are therefore funded by impact fees.

✓ **Impact Fee Eligible**

These projects are identified as all future collection, pumping, and treatment improvements that will be constructed by the district to meet the needs of future development. These improvements are of a regional nature and serve all or significant portions of the undeveloped service area. Therefore, the district pays for full construction costs of these projects.

✓ **Not Impact Fee Eligible**

These projects are identified as those required to mitigate existing system deficiencies. As such they are not eligible to be funded by impact fees according to the Impact Fees Act: Section 11-36-304. It is noted that the 2014 Sewer Master Plan did not identify any projects of this category. Therefore, no projects in this report are identified.

Only projects identified as PIF and IF projects above are to be funded by impact fees. Furthermore, as previously stated, only impact fee eligible projects that are anticipated for construction within the 10-year planning period are to be included in the Impact Fee Analysis (IFA)

Estimated Construction Costs

Construction costs for capital improvement projects have been estimated based on unit costs of recent construction projects within and near the District, which were similar in size and scope. Refer to Appendix 2.

EXCESS CAPACITY UPON COMPLETION OF CAPITAL FACILITIES (10 YEARS AND BEYOND)

It was previously described that future users will benefit from a combination of excess capacity in both the existing system, as well as new facilities. This section specifically addresses the excess capacity in the future system, which will be available to future development. Users are defined and evaluated again based on 3 categories.

1. Existing Users
2. Future Users (Developed in 10-years)
3. Future Users (Developed beyond 10-years)

Determining available system capacity is done for each user category defined above and again separated into two different divisions.

1. Collection
 - a. Pipelines
 - b. Pump Stations
2. Treatment



Sewer Collection Capacity

LPID will construct a combination of multiple pipeline and sewer pump station projects for future users.

Pipelines

The steps used to calculate the capacity in the existing system were described previously, and the same steps were used to calculate the capacity in the master planned system.

The used capacity (existing users) and projected used capacity (10-year and beyond 10-year users), is expressed as a percentage of the overall capacity in Table 11 below.

Table 11: Master Planned Collection System - Pipeline Capacity

Category of User	Used Capacity (%)
Existing	0.0%
10-year	30.5%
Beyond 10-year	69.5%

Pump Stations

LPID has programmed one existing pump station upgrade and one pump station replacement. See Table 12 below.

Basis of Used Capacity

The basis of used capacity is the same as described on page 12 for existing pump stations.

Table 12: Master Planned Collection System Pump Station Capacity*

Pump Station	Master Planned Capacity (ERUs)	Percent to Existing Development	Percent to 10-yr	Percent Existing Beyond 10-yr
Pump Station No. 1 Replacement	260	0.00%	23.8 %	76.2%
Regional Pump Station Upgrade	1,561			
Pump Station No. 4	788			

Source = 2020 Sewer Master Plan.

* Based Upon the District projected 40-year Growth Model

Treatment Capacity

It is estimated that the treatment facilities (WWTF) will reach design capacity in year 2022, with the limiting unit process being identified as biologic treatment. It is noted that the District's disinfection system is nearing, or at capacity, and new improvements may be required as part of the upcoming 2020 UPDES discharge permit.

The used capacity (existing users) and projected used capacity (10-year and beyond 10-year users), is expressed as a percentage of the overall capacity in Table 13 below.



Table 13: Master Planned WWTP Upgrade*

Master Planned WWTF Capacity (MGD)	Master Planned Capacity (ERUs)	Percent to Existing Development (%)	Percent to 10-yr	Percent Existing Beyond 10-yr
*1.31	*3,743	0.00%	23.8%	76.2%

Source: 2020 Sewer Master Plan.

* Based upon the District's projected 40-year Growth Model

REVENUE SOURCES TO FINANCE IMPACT ON SYSTEM IMPROVEMENTS

Manner of Financing

The impact fee facilities plan considers the manner of funding which may be utilized for public facilities including in conjunction with 11-36a-302.2.

- Grant funding if available,
- Sewer Revenue Bonds,
- District Inter-Fund Loans,
- Impact Fee Revenues, and
- Developer Exactions.

In the future, the district will primarily rely upon sewer impact fees and developer exactions to fund the capital projects required for future expansion of the system. Water rate revenues may be needed at times to initially fund growth-related projects when impact fee collections or balances are low. Any impact fee revenues that exceed the annual impact fee expenses can be used to pay down an impact fee deficit owed to the operations fund.

Grants

Grant funding is not secured at the moment, however, if any grants are received, future impact fees will be discounted according to the size of grant and what impact fee qualifying projects the grant will be intended to fund. Any existing infrastructure funded through past grants will be removed from the system value during the impact fee analysis. Any grants for non-impact fee qualifying projects will not be credited against the impact fee.

Sewer Revenue Bonds

None of the costs contained in this IFPP 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, it's not uncommon for projects to be funded ahead of impact fee collections. One solution is to bond fund the needed infrastructure. Another option is to loan funds from existing user rate revenue to the impact fee fund. The loan will be reimbursed as impact fees are received. Consideration of potential interfund loans will be included in the impact fee analysis and any loans should be carefully documented in future 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 needs for new growth. Based on the 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 Exactions

If a project included in the Impact Fee Facilities Plan (or a project that will offset the demand for a system improvement that is listed in the IFFP) is constructed by a developer, then that developer is entitled to a credit against impact fees owed. (Utah Impact Fees Act, 11-36a-304(2)(f)). There are currently no situations/projects in this analysis that would entitle a developer to a credit. If the value of the dedication/exaction is less than the development's impact fee liability, the developer will owe the balance of the liability to the District.

DERIVED SEWER IMPACT FEES

As one of the main sources of revenue (identified in the previous section), which will be used to fund needed capital improvements projects, impact fees will be collected by LPID. An Impact Fee Analysis was conducted by Zions Public Finance, Inc, and impact fees associated with the master planned capital facilities have been derived for the 10-year planning period. A copy of the analysis is provided in Appendix 3. A summary of the recommendations is provided in Table 14.

Table 14 – Impact Fees: Cost Per Unit

Service Area	Impact Fee \$ / ERU
LPID	\$4,131.28

SEWER IMPACT FEE REQUIREMENTS

The District uses the impact fee worksheet (provided in Appendix 4), together with developer furnished construction plans, subdivision plats, historical meter water use, plans, and other available information and resources to calculate the impact fees required for development.



APPENDIX #1

EXHIBITS

APPENDIX #2
CONSTRUCTION COSTS

Project	Project Name	Cost
C-1	Sewer Line to Lake Point Vistas	\$311,825.93
C-2	Canyon Road Sewer Line	\$8,686.08
C-3	Basin 4 Sewer Trunk Line	\$193,548.96
C-4	Basin 4 Sewer Line Extension	\$1,016,028.00
C-5	Sunset Road Sewer Line	\$12,240.00
C-6	Basin 3 SR-36 Crossing	\$353,306.40
C-7	Basin 3 Sewer Trunk Line Along I-80	\$15,600.00
C-8	Basin 2 Sewer Trunk Line - Regional Pump Station to SR-36	\$76,260.00
C-9	Basin 2 Sewer Trunk Line Along Saddleback Blvd	\$149,100.00
C-10	Basin 1 Sewer Trunk Line	\$26,856.00
C-11	Basin 5 East Trunk Line	\$91,710.00
C-12	Basin 5 West Trunk Line	\$154,050.00
C-13	Sunset Road Pipe Line Replacement	\$69,171.50
C-14	Collection System Flow Monitoring	\$233,100.00
PS-1	Pump Station No.1 Replacement	\$607,050.00
PS-2	Regional Pump Station Upgrade	\$162,400.00
PS-3	Pump Station No.4 Replacement	\$1,465,380.00
PS-4	Basin 5 Pump Station	\$1,908,640.00
TR-1	Upsize Interconnecting Pipes	\$323,900.00
TR-2	Aeration Upgrades	\$476,325.00
TR-3	Desinfection System	\$1,450,440.00
TR-4	Phosphorus Removal	\$1,163,940.00
TOTAL		\$10,269,557.87

CLIENT: Lake Point
 PROJECT: Sewer Line to Lake Point Vistas
 PROJECT NO: C-1
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	15-inch PVC Sewerline SDR35	LF	1,274	\$70.00	\$89,180.00
2	5-foot Sewer Manhole	EA	5	\$7,000.00	\$35,000.00
3	Connection to Existing Sewer**	EA	1	\$5,000.00	\$5,000.00
4	Easement	AC	0.6	\$50,000.00	\$29,247.02
5	Miscellaneous Fittings and Utility Relocation	LS	1	\$25,000.00	\$25,000.00
Construction Subtotal					\$183,427.02
Dewatering (10%)					\$18,342.70
Bypass Pumping (5%)					\$9,171.35
Traffic Control (10%)					\$18,342.70
QC/QA Testing (3%)					\$5,502.81
Mobilization (10%)					\$18,342.70
Construction Contingency (15%)					\$27,514.05
Engineering and Construction Management (17%)					\$31,182.59
PROJECT TOTAL					\$311,825.93

** This cost estimate is an estimate only.*

*** Cast in-place Manhole*

** Base bid is not necessarily all inclusive*

CLIENT: Lake Point
 PROJECT: Canyon Road Sewer Line
 PROJECT NO: C-2
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	224	\$45.00	\$10,072.80
2	Connection to Existing Manhole	EA	2	\$3,500.00	\$7,000.00
3	Removal and Asphalt Repair	LF	224	\$20.00	\$4,480.00
4	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$7,500.00	\$7,500.00
Construction Subtotal					\$29,052.80
Mobilization (10%)					\$2,905.28
Construction Contingency (15%)					\$4,357.92
Engineering and Construction Management (17%)					\$4,938.98
PROJECT TOTAL					\$41,254.98

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST					\$17,572.80
---	--	--	--	--	--------------------

Item	Description	Unit	Qty	Unit Price	Total Cost
1	10-inch PVC Sewerline SDR35	LF	224	\$55.00	\$12,311.20
2	Miscellaneous fittings and Appurtenances	LS	1	\$12,500.00	\$12,500.00
PROJECT TOTAL					\$24,811.20

Upsize Cost					\$7,238.40
Misc. Construction Cost (20%)					\$1,447.68
UPSIZE COST					\$8,686.08

** Upsize costs are the difference of the 10-inch improvments and 8-inch minumim improvements and consist of material costs such as pipe, additional bedding, trench excavation, import materials, flowable fill, etc. Basis of cost is twice the price of the material.*

** Road repair is not included in the pipe instalation*

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Basin 4 Sewer Trunk Line
 PROJECT NO: C-3
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	3,655	\$45.00	\$164,455.20
2	5-foot Sewer Manhole	EA	10	\$4,200.00	\$42,000.00
3	Connection to Existing Manhole	EA	1	\$2,200.00	\$2,200.00
4	Removal and Asphalt Repair	LF	2160	\$17.00	\$36,720.00
5	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$10,000.00	\$10,000.00
Construction Subtotal					\$255,375.20
Mobilization (10%)					\$25,537.52
Construction Contingency (15%)					\$38,306.28
Engineering and Construction Management (17%)					\$43,413.78
PROJECT TOTAL					\$362,632.78

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST	\$174,455.20
---	---------------------

Item	Description	Unit	Qty	Unit Price	Total Cost
1	15-inch PVC Sewerline SDR35	LF	2,157	\$70.00	\$150,990.00
2	24-inch PVC Sewerline SDR36	LF	1,498	\$100.00	\$149,756.00
3	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$35,000.00	\$35,000.00
PROJECT TOTAL					\$335,746.00

Upsize Cost	\$161,290.80
Misc. Construction Cost (20%)	\$32,258.16
UPSIZE COST	\$193,548.96

**Upsize costs are the difference of the 15-inch and 24-inch improvments and 8-inch minumim improvements and consist of material costs such as pipe, additional bedding, trench excavation, import materials, flowable fill, etc. Basis of cost is twice the price of the material.*

** Road repair is not included in the pipe instalation*

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Basin 4 Sewer Line Extension
 PROJECT NO: C-4
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	24-inch PVC Sewerline SDR35	LF	2,268	\$100.00	\$226,800.00
2	5-foot Sewer Manhole	EA	8	\$7,000.00	\$56,000.00
3	Connection to Existing Sewer	EA	1	\$2,200.00	\$2,200.00
4	42" Pilot Guided Bore	LS	205	\$700.00	\$143,500.00
5	Flowmeter FLODAR	EA	1	\$35,000.00	\$35,000.00
6	Easement	AC	1.57	\$50,000.00	\$78,500.00
7	Flowable Fill in UDOT Right of Way	LF	1,570.00	\$20.00	\$31,400.00
8	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$35,000.00	\$35,000.00
Construction Subtotal					\$608,400.00
Dewatering (10%)					\$60,840.00
Bypass Pumping (2%)					\$12,168.00
Traffic Control (10%)					\$60,840.00
QC/QA Testing (3%)					\$18,252.00
Mobilization (10%)					\$60,840.00
Construction Contingency (15%)					\$91,260.00
Engineering and Construction Management (17%)					\$103,428.00
PROJECT TOTAL					\$1,016,028.00

** Assume pipe fit in SR-36 Right of Way*

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Sunset Road Sewer Line
 PROJECT NO: C-5
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	270	\$45.00	\$12,150.00
2	5-foot Sewer Manhole	EA	1	\$7,000.00	\$7,000.00
3	Connection to Existing Manhole	EA	1	\$2,200.00	\$2,200.00
4	Removal and Asphalt Repair	LF	265	\$17.00	\$4,505.00
5	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$7,500.00	\$7,500.00
Construction Subtotal					\$33,355.00
Mobilization (10%)					\$3,335.50
Construction Contingency (15%)					\$5,003.25
Engineering and Construction Management (17%)					\$5,670.35
PROJECT TOTAL					\$47,364.10

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST					\$19,650.00
---	--	--	--	--	--------------------

Item	Description	Unit	Qty	Unit Price	Total Cost
1	10-inch PVC Sewerline SDR35	LF	270	\$55.00	\$14,850.00
2	Miscellaneous fittings and Appurtenances	LS	1	\$15,000.00	\$15,000.00
PROJECT TOTAL					\$29,850.00

Upsize Cost					\$10,200.00
Misc. Construction Cost (20%)					\$2,040.00
UPSIZE COST					\$12,240.00

**Upsize costs are the difference of the 10-inch improvments and 8-inch minumim improvments and consist of material costs such as pipe, additional bedding, trench excavation, import materials, flowable fill, etc. Basis of cost is twice the price of the material.*

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Basin 3 SR-36 Crossing
 PROJECT NO: C-6
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	10-inch PVC Sewerline SDR35	LF	555	\$55.00	\$30,525.00
2	5-foot Sewer Manhole	EA	2	\$7,000.00	\$14,000.00
3	Connection to Existing Sewer	EA	2	\$2,200.00	\$4,400.00
4	30" Pilot Guided Bore	LF	140	\$540.00	\$75,600.00
5	Easement	AC	0.50	\$50,000.00	\$24,850.78
6	Removal and Road Repair	LF	50	\$17.00	\$850.00
7	Flowable Fill	LF	555	\$20.00	\$11,100.00
8	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$35,000.00	\$35,000.00
Construction Subtotal					\$196,325.78
Dewatering (10%)					\$19,632.58
Bypass Pumping (5%)					\$9,816.29
Traffic Control (20%)					\$39,265.16
QC/QA Testing (3%)					\$5,889.77
Mobilization (10%)					\$19,632.58
Construction Contingency (15%)					\$29,448.87
Engineering and Construction Management (17%)					\$33,295.38
PROJECT TOTAL					\$353,306.40

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Basin 3 Sewer Trunk Line Along I-80
 PROJECT NO: C-7
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	12-inch PVC Sewerline SDR35	LF	350	\$60.00	\$21,000.00
2	5-foot Sewer Manhole	EA	0	\$7,000.00	\$0.00
3	Connection to Existing Manhole	EA	2	\$2,200.00	\$4,400.00
4	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$7,000.00	\$7,000.00
Construction Subtotal					\$32,400.00
Mobilization (10%)					\$3,240.00
Construction Contingency (15%)					\$4,860.00
Engineering and Construction Management (17%)					\$5,508.00
PROJECT TOTAL					\$46,008.00

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST					\$28,000.00
---	--	--	--	--	--------------------

Item	Description	Unit	Qty	Unit Price	Total Cost
1	18-inch PVC Sewerline SDR35	LF	350	\$80.00	\$28,000.00
2	Miscellaneous fittings and Appurtenances	LS	1	\$13,000.00	\$13,000.00
PROJECT TOTAL					\$41,000.00

Upsize Cost					\$13,000.00
Misc. Construction Cost (20%)					\$2,600.00
UPSIZE COST					\$15,600.00

****Upsize costs are the difference of the 18-inch improvments and 8-inch minumim improvments and consist of material costs such as pipe, additional bedding, trench excavation, import materials, flowable fill, etc.***

Basis of cost is twice the price of the material.

**** Base bid is not necessarily all inclusive***

**** This cost estimate is an estimate only.***

CLIENT: Lake Point
 PROJECT: Basin 2 Sewer Trunk Line - Regional Pump Station to SR-36
 PROJECT NO: C-8
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	665	\$35.00	\$23,275.00
2	5-foot Sewer Manhole	EA	4	\$4,200.00	\$16,800.00
4	Bore and Casing	LF	215	\$500.00	\$107,500.00
5	Bore and Receiving Pit	EA	2	\$5,000.00	\$10,000.00
6	Groundwater	LS	1	\$25,000.00	\$25,000.00
7	Miscellaneous Fittings and Utility Relocation	LS	1	\$8,000.00	\$8,000.00
Construction Subtotal					\$190,575.00
Mobilization (10%)					\$19,057.50
Construction Contingency (15%)					\$28,586.25
Engineering and Construction Management (17%)					\$32,397.75
PROJECT TOTAL					\$270,616.50

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST					\$155,575.00
---	--	--	--	--	---------------------

Item	Description	Unit	Qty	Unit Price	Total Cost
1	21-inch PVC Sewerline SDR35	LF	665	\$75.00	\$49,875.00
2	6-foot Sewer Manhole	EA	4	\$5,000.00	\$20,000.00
3	Bore and Casing	LF	215	\$550.00	\$118,250.00
4	Flowmeter FLODAR	EA	1	\$15,000.00	\$15,000.00
5	Miscellaneous Fittings and Utility Relocation	LS	1	\$16,000.00	\$16,000.00
PROJECT TOTAL					\$219,125.00

Upsize Cost					\$63,550.00
Misc. Construction Cost (20%)					\$12,710.00
UPSIZE COST					\$76,260.00

**Upsize costs are the difference of the 21-inch improvements and 12-inch minimum improvements and consist of material costs such as pipe, additional bedding, trench excavation, import materials, flowable fill, etc. Basis of cost is twice the price of the material.*

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake point
 PROJECT: Basin 2 Sewer Trunk Line Along Saddleback Blvd
 PROJECT NO: C-9
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	2,165	\$45.00	\$97,425.00
2	5-foot Sewer Manhole	EA	10	\$7,000.00	\$70,000.00
3	Groundwater	LS	1	\$35,000.00	\$35,000.00
4	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$10,000.00	\$10,000.00
Construction Subtotal					\$212,425.00
Mobilization (10%)					\$21,242.50
Construction Contingency (15%)					\$31,863.75
Engineering and Construction Management (17%)					\$36,112.25
PROJECT TOTAL					\$301,643.50

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST					\$177,425.00
---	--	--	--	--	---------------------

Item	Description	Unit	Qty	Unit Price	Total Cost
1	21-inch PVC Sewerline SDR35	LF	2,165	\$95.00	\$205,675.00
2	6-foot Sewer Manhole	EA	8	\$7,500.00	\$60,000.00
3	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$36,000.00	\$36,000.00
PROJECT TOTAL					\$301,675.00

Upsize Cost					\$124,250.00
Misc. Construction Cost (20%)					\$24,850.00
UPSIZE COST					\$149,100.00

**Upsize costs are the difference of the 21-inch improvments and 12-inch minumim improvements and consist of material costs such as pipe, additional bedding, trench excavation, import materials, flowable fill, etc. Basis of cost is twice the price of the material.*

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Basin 1 Sewer Trunk Line
 PROJECT NO: C-10
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	1,438	\$45.00	\$64,710.00
2	5-foot Sewer Manhole	EA	6	\$7,000.00	\$42,000.00
3	Connection to Existing Manhole	EA	2	\$2,200.00	\$4,400.00
4	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$10,000.00	\$10,000.00
Construction Subtotal					\$121,110.00
Mobilization (10%)					\$12,111.00
Construction Contingency (15%)					\$18,166.50
Engineering and Construction Management (17%)					\$20,588.70
PROJECT TOTAL					\$171,976.20

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST					\$74,710.00
---	--	--	--	--	--------------------

Item	Description	Unit	Qty	Unit Price	Total Cost
1	10-inch PVC Sewerline SDR35	LF	1,438	\$55.00	\$79,090.00
2	Miscellaneous fittings and Appurtenances	LS	1	\$18,000.00	\$18,000.00
PROJECT TOTAL					\$97,090.00

Upsize Cost					\$22,380.00
Misc. Construction Cost (20%)					\$4,476.00
UPSIZE COST					\$26,856.00

** Upsize costs are the difference of the 10-inch improvments and 8-inch minumim improvements and consist of material costs such as pipe, additional bedding, trench excavation, import materials, flowable fill, etc. Basis of cost is twice the price of the material.*

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Basin 5 East Trunk Line
 PROJECT NO: C-11
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	2,657	\$45.00	\$119,565.00
2	5-foot Sewer Manhole	EA	5	\$7,000.00	\$35,000.00
3	Groundwater	LS	1	\$36,000.00	\$36,000.00
4	Easement	AC	1.83	\$50,000.00	\$91,494.49
5	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$12,000.00	\$12,000.00
Construction Subtotal					\$294,059.49
Mobilization (10%)					\$29,405.95
Construction Contingency (15%)					\$44,108.92
Engineering and Construction Management (17%)					\$49,990.11
PROJECT TOTAL					\$417,564.48

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST	\$131,565.00
---	---------------------

Item	Description	Unit	Qty	Unit Price	Total Cost
1	15-inch PVC Sewerline SDR35	LF	2,657	\$70.00	\$185,990.00
3	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$22,000.00	\$22,000.00
PROJECT TOTAL					\$207,990.00

Upsize Cost	\$76,425.00
Misc. Construction Cost (20%)	\$15,285.00
UPSIZE COST	\$91,710.00

** Upsize costs are the difference of the 15-inch improvments and 8-inch minumim improvements and consist of material costs such as pipe, additional bedding, trench excavation, import materials, flowable fill, etc. Basis of cost is twice the price of the material.*

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Basin 5 West Trunk Line
 PROJECT NO: C-12
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	4,735	\$45.00	\$213,075.00
2	5-foot Sewer Manhole	EA	12	\$7,000.00	\$84,000.00
3	Connection to Existing Manhole	EA	1	\$2,200.00	\$2,200.00
3	Groundwater	LS	1	\$50,000.00	\$50,000.00
4	Easement	AC	3.26	\$50,000.00	\$163,050.96
4	Miscellaneous Fittings and Utiliy	LS	1	\$15,000.00	\$15,000.00
Construction Subtotal					\$527,325.96
Mobilization (10%)					\$52,732.60
Construction Contingency (15%)					\$79,098.89
Engineering and Construction Management (17%)					\$89,645.41
PROJECT TOTAL					\$748,802.87

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST	\$228,075.00
---	---------------------

Item	Description	Unit	Qty	Unit Price	Total Cost
1	15-inch PVC Sewerline SDR35	LF	4,735	\$70.00	\$331,450.00
2	Miscellaneous Fittings and Utiliy	LS	1	\$25,000.00	\$25,000.00
PROJECT TOTAL					\$356,450.00

Upsize Cost	\$128,375.00
Misc. Construction Cost (20%)	\$25,675.00
UPSIZE COST	\$154,050.00

** Upsize costs are the difference of the 15-inch improvments and 8-inch minumim improvements and consist of material costs such as pipe, additional bedding, trench excavation, import materials, flowable fill, etc. Basis of cost is twice the price of the material.*

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Sunset Road Pipe Line Replacement
 PROJECT NO: C-13
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	395	\$45.00	\$17,775.00
2	Connection to Existing Manhole	EA	2	\$2,200.00	\$4,400.00
3	Removal and Asphalt Repair	LF	395	\$17.00	\$6,715.00
4	Miscellaneous Fittings and Utiliy	LS	1	\$8,500.00	\$8,500.00
Construction Subtotal					\$37,390.00
Dewatering (10%)					\$3,739.00
Bypass Pumping (10%)					\$3,739.00
Traffic Control (20%)					\$7,478.00
QC/QA Testing (3%)					\$1,121.70
Mobilization (10%)					\$3,739.00
Construction Contingency (15%)					\$5,608.50
Engineering and Construction Management (17%)					\$6,356.30
PROJECT TOTAL					\$69,171.50

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Collection System Flow Monitoring
 PROJECT NO: C-14
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	5' Manhole	EA	3	\$7,000.00	\$21,000.00
2	Flowmeter FLODAR	EA	3	\$35,000.00	\$105,000.00
Construction Subtotal					\$126,000.00
Dewatering (10%)					\$12,600.00
Bypass Pumping (10%)					\$12,600.00
Traffic Control (20%)					\$25,200.00
QC/QA Testing (3%)					\$3,780.00
Mobilization (10%)					\$12,600.00
Construction Contingency (15%)					\$18,900.00
Engineering and Construction Management (17%)					\$21,420.00
PROJECT TOTAL					\$233,100.00

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake point
 PROJECT: Pump Station No.1 Replacement
 PROJECT NO: PS-1
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	250 gpm submersal pump w/VFD	EA	2	\$65,000.00	\$130,000.00
2	Remove and Salvage of Existing Pumps	LS	1	\$5,500.00	\$5,500.00
3	Flowmeter	EA	1	\$12,000.00	\$12,000.00
4	Site Work	LS	1	\$20,000.00	\$20,000.00
5	SCADA Controls/ Electrical	LS	1	\$20,000.00	\$20,000.00
6	Pump House	LS	1	\$100,000.00	\$100,000.00
7	Easement / Property Acquisition	AC	0.5	\$100,000.00	\$50,000.00
8	Dewatering	LS	1	\$35,000.00	\$35,000.00
9	Bypass Pumping	LS	1	\$35,000.00	\$35,000.00
10	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$20,000.00	\$20,000.00
Construction Subtotal					\$427,500.00
Mobilization (10%)					\$42,750.00
Construction Contingency (15%)					\$64,125.00
Engineering and Construction Management (17%)					\$72,675.00
PROJECT TOTAL					\$607,050.00

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Regional Pump Station Upgrade
 PROJECT NO: PS-2
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	750 gpm submersal pump w/VFD	EA	1	\$65,000.00	\$65,000.00
2	Flowmeter	EA	1	\$12,000.00	\$12,000.00
3	SCADA Controls/ Electrical	LS	1	\$20,000.00	\$20,000.00
4	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$15,000.00	\$15,000.00
Construction Subtotal					\$112,000.00
Mobilization (10%)					\$11,200.00
Testing (3%)					\$3,360.00
Construction Contingency (15%)					\$16,800.00
Engineering and Construction Management (17%)					\$19,040.00
PROJECT TOTAL					\$162,400.00

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Pump Station No.4 Replacement
 PROJECT NO: PS-3
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	800 gpm Submersal Pump w/VFD	EA	2	\$100,000.00	\$200,000.00
2	Remove and Salvage of Existing Pumps	LS	1	\$25,000.00	\$25,000.00
4	10-inch Force Main	LF	150	\$55.00	\$8,250.00
5	Flowmeter	EA	2	\$12,000.00	\$24,000.00
6	Site Work	LS	1	\$100,000.00	\$100,000.00
7	SCADA Controls/ Electrical	LS	1	\$20,000.00	\$20,000.00
8	Miscellaneous Fittings and Utility Relocation	LS	1	\$25,000.00	\$25,000.00
9	Pump House	LS	1	\$175,000.00	\$175,000.00
10	Power	LS	1	\$100,000.00	\$100,000.00
11	Water Lateral	LS	1	\$5,000.00	\$5,000.00
12	Access Road - 6"road base to SR-36	LF	1,000	\$60.00	\$60,000.00
13	Easement/Acquisition	AC	1.3	\$100,000.00	\$130,000.00
Construction Subtotal					\$872,250.00
Dewatering (10%)					\$87,225.00
Testing (10%)					\$87,225.00
QA/QC (3%)					\$26,167.50
Traffic Control (3%)					\$26,167.50
Mobilization (10%)					\$87,225.00
Construction Contingency (15%)					\$130,837.50
Engineering and Construction Management (17%)					\$148,282.50
PROJECT TOTAL					\$1,465,380.00

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Basin 5 Pump Station
 PROJECT NO: PS-4
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	800 gpm Submersal Pump w/VFD	EA	2	\$100,000.00	\$200,000.00
4	10-inch Force Main	LF	2,600	\$55.00	\$143,000.00
5	Flowmeter	EA	2	\$12,000.00	\$24,000.00
6	Site Work	LS	1	\$100,000.00	\$100,000.00
7	SCADA Controls/ Electrical	LS	1	\$20,000.00	\$20,000.00
8	Miscellaneous Fittings and Utiliy Relocation	LS	1	\$30,000.00	\$30,000.00
9	Pump House	LS	1	\$175,000.00	\$175,000.00
10	Power	LS	1	\$100,000.00	\$100,000.00
11	Water Lateral	LS	1	\$10,000.00	\$10,000.00
12	Access Road - 6"road base	LF	2,600	\$60.00	\$156,000.00
12	Easement/Property Acquisition	AC	2.5	\$100,000.00	\$250,000.00
Construction Subtotal					\$1,208,000.00
Mobilization (10%)					\$120,800.00
Testing (10%)					\$120,800.00
QA/QC (3%)					\$36,240.00
Traffic Control (3%)					\$36,240.00
Construction Contingency (15%)					\$181,200.00
Engineering and Construction Management (17%)					\$205,360.00
PROJECT TOTAL					\$1,908,640.00

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Upsize Interconnecting Pipes
 PROJECT NO: TR-1
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	24-inch PVC Sewerline SDR35	LF	300	\$100.00	\$30,000.00
2	Bypass pump	LS	1	\$25,000.00	\$25,000.00
3	Sandbag Dam	EA	2	\$15,000.00	\$30,000.00
4	Reconstruct the Lagoon Edges and Road	EA	6	\$20,000.00	\$120,000.00
Construction Subtotal					\$205,000.00
Dewatering (10%)					\$20,500.00
Testing (3%)					\$6,150.00
QA/QC (3%)					\$6,150.00
Mobilization (10%)					\$20,500.00
Construction Contingency (15%)					\$30,750.00
Engineering and Construction Management (17%)					\$34,850.00
PROJECT TOTAL					\$323,900.00

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Aeration Upgrades
 PROJECT NO: TR-2
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	7.5 hp AEROMIX TORNADO	EA	9	\$30,000.00	\$270,000.00
2	Mooring Post and Cables	EA	9	\$1,500.00	\$13,500.00
3	SCADA/Controls	LS	1	\$20,000.00	\$20,000.00
4	Electrical/Controls	LS	1	\$25,000.00	\$25,000.00
Construction Subtotal					\$328,500.00
Mobilization (10%)					\$32,850.00
Testing (3%)					\$9,855.00
Construction Contingency (15%)					\$49,275.00
Engineering and Construction Management (17%)					\$55,845.00
PROJECT TOTAL					\$476,325.00

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Desinfection System
 PROJECT NO: TR-3
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 5-Nov-18

Item	Description	Unit	Qty	Unit Price	Total Cost
1	Hypochlorine Disinfection System	EA	2	\$12,000.00	\$24,000.00
2	Furnish and Install 58' long by 57'-4" wide by 8 foot tall Chlorine Contact Chamber Structure with 5 chambers on each side including grating, 8-foot walls, baffles, grating, stairs, and appurtenances.	LS	1	\$500,000.00	\$500,000.00
3	Manholes	EA	2	\$7,000.00	\$14,000.00
4	Electrical/ SCADA	LS	1	\$40,000.00	\$40,000.00
5	Water Lateral	LS	1	\$10,000.00	\$10,000.00
6	House	LS	1	\$200,000.00	\$200,000.00
7	Miscellaneous Fittings and	LS	1	\$30,000.00	\$30,000.00
8	Power	LS	1	\$100,000.00	\$100,000.00
Construction Subtotal					\$918,000.00
Dewatering (10%)					\$91,800.00
Testing (3%)					\$27,540.00
QA/QC (3%)					\$27,540.00
Mobilization (10%)					\$91,800.00
Construction Contingency (15%)					\$137,700.00
Engineering and Construction Management (17%)					\$156,060.00
PROJECT TOTAL					\$1,450,440.00

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

CLIENT: Lake Point
 PROJECT: Phosporus Removal
 PROJECT NO: TR-4
 WORKSHT: Engineers Opinion of Probable Cost
 DATE: 9-Jan-20

Item	Description	Unit	Qty	Unit Price	Total Cost
1	PhosBox	EA	1	\$551,960.00	\$551,960.00
2	Manholes	EA	2	\$7,000.00	\$14,000.00
3	Electrical/ SCADA	LS	1	\$70,000.00	\$70,000.00
4	House	LS	1	\$100,000.00	\$100,000.00
5	Miscellaneous Fittings and	LS	1	\$20,000.00	\$20,000.00
6	Power	LS	1	\$20,000.00	\$20,000.00
Construction Subtotal					\$775,960.00
Dewatering (10%)					\$77,596.00
Testing (3%)					\$23,278.80
QA/QC (3%)					\$23,278.80
Mobilization (10%)					\$77,596.00
Construction Contingency (12%)					\$93,115.20
Engineering and Construction Management (12%)					\$93,115.20
PROJECT TOTAL					\$1,163,940.00

** Base bid is not necessarily all inclusive*

** This cost estimate is an estimate only.*

APPENDIX #3
IMPACT FEE ANALYSIS

Lake Point Improvement District



Sewer Impact Fee Analysis



Zions Public Finance, Inc.
February 2020

Sewer Impact Fee Analysis

Summary

The intent of the Impact Fees Analysis (“IFA”) is to use the information provided in Lake Point Improvement District’s (“District”) recently completed Impact Fee Facilities Plan (“IFFP”) by Ward Engineering to calculate the proportionate share of impact fees that the District can charge to new development.

The District forms one geographic service area that provides sewer utility services to properties in the District. The District currently has 669 sewer ERUs. The District is projected to grow to 1,296 ERUs by 2029 – an increase of 627 ERUs within the next 10 years. At buildout the District is projected to grow to 5,145 ERUs – an increase of 4,476 ERUs.

Existing service levels are based on the 2019 levels of service in the District, as defined in the District’s Impact Fee Facilities Plan (“IFFP”), dated February 2020. Proposed service levels are intended to be the same as the existing service levels. The IFFP states that, “It is determined by the District that all levels of proposed service will be unchanged for future development, as identified in the 2019 Sewer Master Plan.”¹

The IFFP identifies excess capacity in the existing system, as well as new construction costs attributable to new development. The IFFP estimates that new development will consume the following percentages of excess capacity during the next 10 years, representing the following share of actual (historic) costs.

TABLE 1: EXCESS CAPACITY IN EXISTING SYSTEM

Existing Cost Calculations	Actual Cost	% to Development in Next 10 Years	Cost to New Dev in Next 10 Years
Collection	\$1,892,439	5.9%	\$111,654
Pump Station	\$1,431,998	28.8%	\$412,415
Treatment – Hydraulic	\$248,761	19.5%	\$48,508
Treatment – Biologic	\$138,457	45.1%	\$62,444
Mixed	\$300,186	5.9%	\$17,711
TOTAL			\$652,733

Source: Ward Engineering, *Impact Fee Facilities Plan February 2020*, pp. 6-7; ZPFI

New construction projects are outlined in this IFA as listed in the IFFP and total \$8,045,986.37. Of this amount, the engineers have identified \$2,368,710.76 as attributable to new development within the next 10 years.

TABLE 2: SUMMARY OF NEW DEVELOPMENT INFRASTRUCTURE COSTS

Summary Table	Total Cost	Amount to New Development within 10 Years
Collection	\$2,396,551.37	\$848,792.77
Pumping	\$2,234,830.00	\$635,103.93
Treatment	\$3,414,605.00	\$884,814.06
TOTAL	\$8,045,986.37	\$2,368,710.76

Source: Ward Engineering, *Impact Fee Facilities Plan February 2020*, pp. 6-7

¹ Ward Engineering, *Lake Point Improvement District Impact Fee Facilities Plan*, February 2020, p. 4.

Impact fees can include the consultant costs incurred in preparing the Sewer IFFP and IFA. In addition, credits have been made to account for the current impact fee fund balance which can be used to offset the costs of construction of new facilities or as repayment for the excess capacity already purchased by the District.

The proportionate share analysis for sewer impact fees is as follows:

TABLE 3: PROPORTIONATE SHARE ANALYSIS

Description	Amount
Existing Capacity	\$1,041.04
New Construction	\$3,777.85
Consultant Costs	\$146.57
Impact Fee Fund Balance	(\$834.18)
Total Cost per ERU	\$4,131.28

The maximum fee per ERU is \$4,131.28. The District may choose to charge any amount up to the maximum amount.

Utah Code Legal Requirements

Utah law requires that communities prepare an Impact Fee Analysis (IFA) before enacting an impact fee. Utah law also requires that communities give notice of their intent to prepare and adopt an IFA. This IFA follows all legal requirements as outlined below. The District has retained Zions Public Finance, Inc. (ZPFI) to prepare this Impact Fee Analysis in accordance with legal requirements.

Notice of Intent to Prepare Impact Fee Analysis

A local political subdivision must provide written notice of its intent to prepare an IFA before preparing the Plan (Utah Code §11-36a-503). This notice must be posted on the Utah Public Notice website. The District has complied with this noticing requirement for the IFA by posting notice on April 09, 2020.

Preparation of Impact Fee Analysis

Utah Code requires that each local political subdivision, before imposing an impact fee, prepare an impact fee analysis. (Utah Code 11-36a-304).

Section 11-36a-304 of the Utah Code outlines the requirements of an impact fee analysis which is required to:

- (1) An impact fee analysis shall:
 - (a) identify the anticipated impact on or consumption of any existing capacity of a public facility by the anticipated development activity;
 - (b) identify the anticipated impact on system improvements required by the anticipated development activity to maintain the established level of service for each public facility;
 - (c) demonstrate how the anticipated impacts described in Subsections (1)(a) and (b) are reasonably related to the anticipated development activity;
 - (d) estimate the proportionate share of:
 - (i) the costs for existing capacity that will be recouped; and
 - (ii) the costs of impacts on system improvements that are reasonably related to the new development activity; and
 - (e) identify how the impact fee was calculated.
- (2) In analyzing whether or not the proportionate share of the costs of public facilities are reasonably related to the new development activity, the local political subdivision or private entity, as the case may be, shall identify, if applicable:
 - (a) the cost of each existing public facility that has excess capacity to serve the anticipated development resulting from the new development activity;
 - (b) the cost of system improvements for each public facility;

- (c) other than impact fees, the manner of financing for each public facility, such as user charges, special assessments, bonded indebtedness, general taxes, or federal grants;
- (d) the relative extent to which development activity will contribute to financing the excess capacity of and system improvements for each existing public facility, by such means as user charges, special assessments, or payment from the proceeds of general taxes;
- (e) the relative extent to which development activity will contribute to the cost of existing public facilities and system improvements in the future;
- (f) the extent to which the development activity is entitled to a credit against impact fees because the development activity will dedicate system improvements or public facilities that will offset the demand for system improvements, inside or outside the proposed development;
- (g) extraordinary costs, if any, in servicing the newly-developed properties; and
- (h) the time-price differential inherent in fair comparisons of amounts paid at different times.

Certification of Impact Fee Analysis

Utah Code states that an Impact Fee Analysis shall include a written certification from the person or entity that prepares the Impact Fee Analysis. This certification is included at the conclusion of this analysis.

Anticipated Impact on or Consumption of Any Existing Capacity of a Public Facility by the Anticipated Development Activity

Utah Code 11-36a-304(1)(a)

Anticipated Development Activity

Impacts on sewer facilities will come from both residential and nonresidential growth. Growth is projected in the IFFP as follows:

TABLE 4: ERU GROWTH

Description	ERUs
2019	669
2029	1,296
Undeveloped ERUs as of 2019	4,476
TOTAL ERUs at Buildout	5,145
Growth in ERUs, 2019-2029	627

Source: Lake Point Improvement District Sewer Impact Fee Facilities Plan, p. 8.

Demand Placed on Facilities by New Development Activity

New development will place demand on the existing facilities. Analysis conducted by Ward Engineering in the District's Impact Fee Facilities Plan shows that the collection, pumping and treatment systems all have existing excess capacity to serve the needs of new development during the next 10 years.

TABLE 5: EXISTING SYSTEM CAPACITY AND GROWTH DEMANDS ON CAPACITY

Description	% of Capacity Currently Used
Existing System – Collection	
Existing development	62.2%
10-year capacity used	5.9%
10+ year capacity used	31.9%
TOTAL	100.0%
Existing System - Pump Station	
Existing development	64.1%
10-year capacity used	28.8%
10+ year capacity used	7.1%
TOTAL	100.0%
Existing System - Treatment Capacity (Hydraulic)	
Existing development	15.1%
10-year capacity used	19.5%
10+ year capacity used	65.4%
TOTAL	100.0%
Existing System - Treatment Capacity (Biologic)	
Existing development	54.9%
10-year capacity used	45.1%
10+ year capacity used	0.0%

Description	% of Capacity Currently Used
TOTAL	100.0%

Source: Ward Engineering Lake Point Improvement District IFFP, pp. 6-7

Identify the Anticipated Impact on System Improvements Required by the Anticipated Development Activity to Maintain the Established Level of Service for Each Public Facility and Demonstrate How the Anticipated Impacts are Reasonably Related to the New Development Activity

Utah Code 11-36a-304(1)(b)(c)

In addition to consuming excess capacity in the existing system, the IFFP identifies the new projects needed to meet the demand on the sewer system by the anticipated development activity and to maintain existing service levels.

TABLE 6: COST TO NEW DEVELOPMENT FOR COLLECTION SYSTEM

Project No.	Description	Cost	Construction Year	% to Development Within Next 10 Years	Cost to New Development Within Next 10 Years	Cost Within Next 10 Years with Inflation Factor
C-1	Sewer line to Lake Point Vistas	\$311,825.93	2025	30.5%	\$95,106.91	\$113,562.62
C-2	Canyon Road Sewer Line	\$8,686.08	2025	30.5%	\$2,649.25	\$3,163.35
C-3	Basin 4 Sewer Trunk Line	\$193,548.96	2025	30.5%	\$59,032.43	\$70,487.81
C-4	Basin 4 Sewer Trunk Line Extension	\$1,016,028.00	2025	30.5%	\$309,888.54	\$370,023.12
C-5 (PIF)	Sunset Road Sewer Line - Replace a segment of existing 8-inch sewer line and upsize with a new 10-inch line	\$12,140.00	2021	30.5%	\$3,733.20	\$3,960.55
C-6 (IF)	Basin 3 SR-36 Crossing - Abandon existing 8-inch sewer line crossing SR-36 and construct a new 10-inch sewer crossing SR-36 and connecting back to an existing 10-inch sewer on the west side of the highway	\$353,306.40	2021	30.5%	\$107,758.45	\$114,320.94
C-7 (PIF)	Basin 3 - Sewer Trunk Line along I-80 - Replace an existing 12-inch sewer line running along the east side of I-80 and upsize to a new 18-inch sewer line connecting to the Regional Pump Station	\$15,600.00	2025	30.5%	\$4,758.00	\$5,681.30
C-8 (PIF)	Basin 2 Trunk Line - Regional Pump Station to SR-36 - Replace an existing 12-inch sewer	\$76,260.00	2021	30.5%	\$23,259.30	\$24,675.79

Project No.	Description	Cost	Construction Year	% to Development Within Next 10 Years	Cost to New Development Within Next 10 Years	Cost Within Next 10 Years with Inflation Factor
	line from SR-36 to the Regional Pump Station and upsize to a new 21-inch sewer line, including a new bore across SR-36.					
C-9 (PIF)	Basin 2 Trunk Line along Saddle Back Blvd - Replace an existing 12-inch sewer line along Saddleback Boulevard from Mountain View Road to SR-36 and upsize with a new 21-inch sewer line	\$149,100.00	2021	30.5%	\$45,475.50	\$48,244.96
C-10 (PIF)	Basin 1 Sewer Trunk Line	\$26,856.00	2025	30.5%	\$8,191.08	\$9,780.58
C-14 (IF)	Collection System Flow Monitoring	\$233,100.00	2025	30.5%	\$71,095.50	\$84,891.75
	TOTAL	\$2,396,451.37			\$730,948.17	\$848,792.77

TABLE 7: COST TO NEW DEVELOPMENT FOR PUMPING SYSTEM

Project No.	Description	Cost	Construction Year	% to Development Within Next 10 Years	Cost to New Development Within Next 10 Years	Cost Within Next 10 Years with Inflation Factor
PS-1 (IF)	Pump Station No. 1 Replacement - Replace Pump Station No. 1 to serve Basin 1. The existing pump station has the capacity to serve both the existing and master planned flows. The existing pump station is approximately 35 years and is reaching its service life expectancy.	\$607,050.00	2025	23.8%	\$144,477.90	\$172,514.17
PS-2 (IF)	Regional Pump Station Upgrades - This project will consist of adding an additional pump to double the capacity of the pump station, which will be 1,575 ERUs (equipped capacity = 1,600 gpm). The regional pump station is anticipated to receive 1,469 ERUs east of SR-36.	\$162,400.00	2025	23.8%	\$38,651.20	\$46,151.55
PS-3	Pump Station #4 Replacement	\$1,465,380.00	2025	23.8%	\$348,760.44	\$416,438.20
	TOTAL	\$2,234,830.00			\$531,889.54	\$635,103.93

TABLE 5: COST TO NEW DEVELOPMENT FOR TREATMENT SYSTEM

Project No.	Description	Cost	Construction Year	% to Development Within Next 10 Years	Cost to New Development Within Next 10 Years	Cost Within 10 Years with Inflation
TR-1 (IF)	Upsize Lagoon Interconnecting Pipes - Re-construct the lagoon interconnecting pipes to allow for the increase of flow between the Lagoons	\$323,900	2022	23.8%	\$77,088.20	\$84,236.36
TR-2 (IF)	Aeration Upgrades - Install 9 additional TORNADO, aspirating-type aerators, or equivalent to match the existing 9 aerators currently installed. This project extends the capacity of the system for a projected 20-year growth period (for a total of 1,679 ERUs). It is anticipated that an additional 7 aerators will be needed (the maximum number) beyond the 20-year planning period	\$476,325	2022	23.8%	\$113,365.35	\$123,877.38
TR-3 (IF)	Disinfection System - Construct a new Hypochlorite disinfection system with redundant contact chambers and a new earthen ditch and sampling station. It is recommended that the system be designed for the 20-year planning period with room to expand. It is noted that no de-chlorination system is master planned. However, as with the phosphorus 2020 rules, it will be critical for the District to maintain a status of discharge that is not received by any "water of the state" (the Great Salt Lake). If this is reclassified, it is possible that dechlorination may be required.	\$1,450,440	2020	23.8%	\$345,204.72	\$355,560.86
TR-4 (IF)	Phosphorus Removal - Construct a Phosphorus removal technology (Phosbox or Equivalent to	\$1,163,940	2024	23.8%	\$277,017.72	\$321,139.46

Project No.	Description	Cost	Construction Year	% to Development Within Next 10 Years	Cost to New Development Within Next 10 Years	Cost Within 10 Years with Inflation
	bring effluent concentrations of Phosphorus down to 1 mg/l as established by the State of Utah).					
	TOTAL	\$3,414,605			\$812,675.99	\$884,814.06

The projects needed over the next six years total \$8,045,986, with \$2,368,711 of that amount attributable to new growth.

TABLE 8: SUMMARY OF NEW DEVELOPMENT INFRASTRUCTURE COSTS

Summary Table	Total Cost	Amount Attributable to New Development within 10 Years
Collection	\$2,396,551.37	\$848,792.77
Pumping	\$2,234,830.00	\$635,103.93
Treatment	\$3,414,605.00	\$884,814.06
TOTAL	\$8,045,986.37	\$2,368,710.76

Proportionate Share Analysis

The proportionate share analysis is calculated by taking calculating four components of the impact fees:

- 1) Buy-in to the actual costs of existing, excess capacity;
- 2) Proportionate share of the cost of constructing new facilities;
- 3) Consultant costs associated with the sewer impact fees; and
- 4) Credits for the impact fee fund balance.

Excess Capacity Calculation

The buy-in cost for excess capacity is calculated by taking the percentage of excess capacity in each system that will be consumed by new development in the next 10 years and multiplying by the actual (historic) cost of the existing system to determine the actual cost of the excess capacity that is attributable to anticipated development within the next 10 years.

TABLE 9: EXCESS CAPACITY COSTS

Existing Cost Calculations	Actual Cost	% to Development in Next 10 Years	Cost to New Development in Next 10 Years
Collection	\$1,892,439	5.9%	\$111,654
Pump Station	\$1,431,998	28.8%	\$412,415
Treatment – Hydraulic	\$248,761	19.5%	\$48,508
Treatment – Biologic	\$138,457	45.1%	\$62,444
Mixed	\$300,186	5.9%	\$17,711
TOTAL			\$652,733

The cost of the excess capacity is then divided by the 627 ERUs that the excess capacity can serve to arrive at a buy-in cost of \$1,041.04 per ERU.

TABLE 10: EXCESS CAPACITY PROPORTIONATE SHARE CALCULATION

Description	Amount
Existing Capacity Cost to New Development in Next 10 Yrs	\$652,733
Growth in ERUs, 2019-2029	627
Cost per ERU	\$1,041.04

New Construction Calculation

The proportionate fee for the construction of new facilities is calculated by taking the cost attributable to new development over the next six years (\$2,368,710.76) and dividing by the growth in ERUs over that same time period (627 ERUs).

TABLE 11: PROPORTIONATE SHARE CALCULATION FOR NEW FACILITIES

Description	Amount
New Construction Cost within 10 Years	\$2,368,710.76
Growth in ERUs, 2019-2029	627
Cost per ERU - New Construction	\$3,777.85

Consultant Costs

The costs incurred by the consultants in preparing the IFFP and IFA can be included as part of the impact fees calculation. These costs are shown below.

TABLE 12: PROPORTIONATE SHARE CALCULATION FOR CONSULTANT COSTS

Description	Amount
Ward Engineering	\$85,000.00
ZPFI	\$6,900.00
Total Consultant Costs	\$91,900.00
Growth in ERUs, 2019-2029	627
Total Consultant Costs	\$146.57

Impact Fee Fund Balance

The impact fee fund balance for sewer as of the drafting of this report is \$523,031. These funds can be used for construction costs as well as to repay the General Fund for prior sewer expenditures. Therefore, a credit needs to be made against the impact fee to account for the impact fee fund balance.

TABLE 13: PROPORTIONATE SHARE CALCULATION FOR IMPACT FEE FUND BALANCE

Description	Amount
Impact Fee Fund Balance	\$523,030.75
Growth in ERUs, 2019-2029	\$627.00
Fund Balance Credit	(\$834.18)

Summary of Impact Fees

The maximum gross impact fee that can be charged is \$4,131.28 per equivalent residential unit. The District may choose to charge any amount up to the maximum amount of \$4,131.28.

TABLE 14: SUMMARY OF PROPORTIONATE SHARE CALCULATION

Description	Amount
Existing Capacity	\$1,041.04
New Construction	\$3,777.85
Consultant Costs	\$146.57
Impact Fee Fund Balance	(\$834.18)
Total Cost per ERU	\$4,131.28

Calculation of Credits

There is no outstanding debt on the existing sewer system and no planned debt in the near future. Therefore, no credits need to be made against the maximum impact fee calculated above.

Certification

Zions Bank Public Finance certifies that the attached impact fee analysis:

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; 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;
3. Offsets costs with grants or other alternate sources of payment; and
4. Complies in each and every relevant respect with the Impact Fees Act.

APPENDIX #4
IMPACT FEE WORKSHEET

Sewer Impact Fee Worksheet -Lake Point Improvement District

Name of Development: _____

Date: _____

Contact Information:

Name: _____

Address: _____

Email: _____

Accompanying Documents:

- ☐ Site Plan or Plat
- ☐ Landscape Plan (*if applicable*)
- ☐ Floor plan w/ fixture count for Commercial/Industrial or Institutional Developments

1) Designate category of development (All Remodel and Renovation type projects will be analyzed on a case by case basis).

- 1a. ☐ Residential (Complete Calculations for step 4a)
- 1b. ☐ Commercial/Industrial/Institutional (Complete Calculations for step 4b)

2) Sewer Impact Fee Per Equivalent Residential Connection

(Impact fees based on Domestic Wastewater Generation as by UAC R317. Impact fees for industrial strength wastewater treatment will be case by case.)

Sewer Impact Fee 4,131.28 Unit Cost (\$/ERU)

3) If Commercial/Industrial/Institutional development, provide engineer's calculation of average day water demand. Otherwise proceed with step 4

Average Day Indoor Water Demand = _____ gpd

4) Impact Fee Calculations

a. **Residential**

$$\begin{array}{ccccc}
 \$ & 4,131.28 & & & \\
 \hline
 & \text{Unit Cost}(\$/\text{ERU}) \text{ from step 2,} & \times & \frac{\text{Number of units}}{\text{in development}} & = & \frac{\$}{\text{Impact Fee}} \quad \text{--}
 \end{array}$$

Sewer Impact Fee Worksheet - Lake Point Improvement District (cont.)

b. Commercial/Industrial/Institutional

Is average day water demand provided in step 3?

☐ Yes

If yes, continue with step 4c.

☐ No

	x	0.16	=	-	gpd
Building Square Footage					Indoor Demand
-	÷	346	=	-	
Indoor Demand					ERUs
-	x	\$ 4,131.28	=	\$ -	
ERUs		Unit Cost (\$/ERU) from step 2			Impact Fee

c. Commercial/Industrial/Institutional

	x	1	=	-	gpd
Total Average Day Water Demand from step 3					Indoor Demand
-	÷	346	=	-	
Indoor Demand					ERUs
-	x	\$ 4,131.28	=	\$ -	
ERUs		Unit Cost (\$/ERU) from			Impact Fee

5) Total Number of ERUs (Sum of ERUs from step 4) Total* =

-

*If total is less than one ERU then one ERU will be assessed

6) Total Impact Fee (Sum of Impact Fees from step 4) Total =

\$ -

7) District Approval

Approved By: _____
Lake Point Improvement District Manager