STANSBURY PARK
IMPROVEMENT DISTRICT

Sewer Impact Fee Facilities Plan
Adopted March 2018

Ward Engineering Group
Planning. Engineering. Surveying

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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. Costs of 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. Can expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally acted costs accounting practices and the methodological standards set forth by the federal office of Management and Budget for federal grant reimbursement; and
    d. Complies in each and every relevant respect with the Impact Fee Act.

Brendan Thorpe, P.E.

SEWER SYSTEM IMPACT FEE FACILITIES PLAN
STANSBURY PARK IMPROVEMENT DISTRICT

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SEWER SYSTEM IMPACT FEE FACILITIES PLAN
STANSBURY PARK IMPROVEMENT DISTRICT

INTRODUCTION

Stansbury Park Improvement District (SPID), located in Tooele County, Utah, is responsible for providing and managing both water and sewer services to customers in the community of Stansbury Park. The district boundary is approximately 3,752 acres, with the Oquirrh Mountains to the east, the Great Salt Lake to the north, Erda Township to the south, and Grantsville City to the west. The district currently supports 3,201 sewer accounts, which consist of residential, commercial, and institutional users. The sewer service provided to these users consists of both collection and treatment of domestic wastewater.

PURPOSE AND NEED

A Sewer Master Plan update was prepared for SPID by Aqua Engineering in August 2014. 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 2014 Sewer Master Plan prepared by Aqua Engineering. It is noted that certain updates have been made to reflect development and changes within the District since the completion of the 2014 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

In 1985, water rights within SPID were divided between Leucadia Financial Corporation and the District, based on the TerraCorp Bankruptcy. Water rights transferred to the District were assigned to the development area referred to as the "Core Area". Certain legal requirements were made subject to the existing and future developments within the Core Area, which are beyond the scope of this discussion. The Core Area also constituted the majority of the original development within Stansbury, thus containing the oldest system infrastructure. Therefore, it was a conventional approach at the time to also define SPID's service areas, including both water and sewer service areas, as those in the Core Area and out the Core Area. Additionally, the District operated two regional pump stations at the north end of the district in 2014. The district was divided into additional service areas based on the sewer basins for the pump stations and trunk sewer lines.

Since 1985, much development has occurred surrounding the Core Area and it is less important to distinguish between the infrastructure in the Core Area, and out of the Core Area. Furthermore, the district has taken steps over the past few years toward the elimination of one of its pump stations, which heavily influenced the prior delineation of service areas within the District. Therefore, for simplicity, SPID desires to establish and maintain one service area within its boundaries. This is the approach for analysis made and recommendations furnished in this report. It is noted that this is consistent with the 2014 Sewer Master Plan, which identified only one service area within the district.

Unit of Demand

It is typical for a Sewer System to define a unit of demand as an Equivalent Residential Unit, or ERU. SPID followed this approach and the definitions of "demand" and the parameters of analysis are defined in the 2014 Sewer Master Plan, and summarized below.

Sewer Modeling Parameters:

- Collection System Average Daily Flow (ADF) = 300 gpd/ERU
- Peak Flow Factor (Interceptor and Outfall Sewer) = 2.5
- Peak Flow (Interceptor and Outfall Sewers) = 750 gpd/ERU
- Peak Flow Factor (Laterals and Collectors) = 4.0
- Peak Flow (Laterals and Collectors) = 1,200 gpd/ERU

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

	2013 (Used in 2014 Master Plan)	2023 (10-year evaluation period)	2033 (20-year evaluation period)
Projected Population	11,180	15,640	21,450
Land Use	Number of ERUs	Number of ERUs	Number of ERUs
Residential	2,795	3,915	5,378
Commercial / Industrial	257	366	508
Church	60	90	120
Elementary School	44	66	88
Junior High School	0	44	44
High School	122	122	122
Wastewater Treatment Facility	1	1	1
Total	3,279	4,604	6,261
Increase From 2013	0	1,325	2,982

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
- 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 are required to have a minimum of 0.05

Pump Stations (2014 Sewer Master Plan)

- Average Daily Flow (ADF) = 0.21 gpm/ERU
- Peak Flow Factor = 2.5
- Peak Flow = 0.52 gpm/ERU

✓ Treatment Capacity

Hydraulic Capacity (2014 Sewer Master Plan)

- Average Daily Flow (ADF) =280 gpd/ERU
- Peak Flow Factor = 2.5
- Peak Flow = 700 gpd/ERU

Biological Capacity (Organic Loading) (UAC R317-3-4-C.1.a)

- BOD = 0.17 lb/day/capita, or 0.68 lb/day/ERU
- BOD = 200 mg/L/capita/day, or 800 mg/L/ERU/day
- TSS = 0.20 lbs/day/capita, or 0.80 lb/day/ERU
- TSS = 250 mg/L/capita/day, or 1000 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 2014 Sewer Master Plan.

Performance Standards

✓ Treatment Capacity

Hydraulic Capacity

- Average Daily Flow (ADF) = 300 gpd/ERU
- Peak Flow Factor = 2.5
- Peak Flow = 750 gpd/ERU

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
    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). Figure 1 depicts the existing sewer collection system.

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 9 sewer basins, which are illustrated in Figure 3. The trunk lines and outfall sewers are depicted in Figure 2.
    c. With sewer basins delineated, consideration was given to each basin, and whether or not future users could physically and hydraulically connect to the trunk lines within the basins without pumping. Basins that had no feasible hydraulic connectivity for future users were considered to have no existing available capacity and were eliminated.
    d. The remaining trunk lines and outfall sewers were determined to have potential excess capacity, which was 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 2014 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 2014 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.

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

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. Refer to

Table 3: Existing Collection System - Pipeline Capacity

Category of User	Used Capacity (%)
Existing	57.2%
10-year	5.8%
Beyond 10-year	37.0 %

Pump Stations

SPID currently has two 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	5 & 6	630
Parcel 9 Pump Station	8	918

Basis of Used Capacity

1) As shown, the two 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 2014 Master Plan was used to project the number of 10-year users, which was a 40% increase from existing.
3) Using this growth, the projected used capacity in the pump stations for 10-year users will also be a 40% 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	1,210	59.3%	23.7%	17.0%
Parcel 9 Pump Station	1,763			

*Source = 2014 Sewer Master Plan, Table 16.
**Percentage capacities are based on a combined ERU total of 2,973 because district comprises only 1 service area.

Treatment Capacity

In 2011 and 2012, SPID made significant improvements to its treatment factifies, upgrading its gravity operated facultative lagoons to a smaller foot print of pumped aeration lagoons, as well as a new disinfection system containing chlorine contact chambers. The upgraded treatment facility is designed for a peak flow of 1,040 gallons per minute, or 1.5 MGD (page 36 of the 2014 Master Plan), with a potential to add limited future hydraulic and biologic capacity. 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 3,279 ERUs contributing to the treatment process. The 10-year projection is 1,325 ERUs based on the projections provided in the 2014 Sewer Master Plan. The projections beyond 10 years consist of the remaining available existing capacity.

Table 6: Existing Hydraulic Treatment Capacity

Hydraulic Treatment Capacity (GPM)	Existing Capacity (ERUs)	Percent to Existing Development (%)	Percent to 10-yr	Percent Existing Beyond 10-yr
1,040 (or 1.5 MGD)	*5,350	61.3%	24.8%	13.9%

*Source: 2014 Sewer Master Plan

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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	*3,300	4,853	67.6%	27.3%	5.1%
TSS	**6,795	8,494	38.6%	15.6%	45.8%

*Source: 2009 Construction Procurement Contract for the proprietary Parkson Biolac Aeration System, based on construction Change Order No. 1.
**Source: 2009 Wastewater Treatment System Improvements Design Study Report, based on 2.72 MGD and 0.25 lbs/capita/day.

Disinfection Capacity

The existing treatment plant was designed for 1.5 MGD as described in the 2014 Master Plan, which is the same capacity as identified for hydraulic treatment.

Table 8: Existing Disinfection Capacity

	Disinfection Treatment Capacity (MGD)	Existing Capacity (ERUs)	Percent to Existing Development (%)	Percent to 10-yr	Percent Existing Beyond 10-yr
Disinfection System	*1.5 MGD	5,350	61.3%	24.8%	13.9%

*Source: 2014 Sewer Master Plan. Note that the dosing of the hypochlorite system is capable of 1.8 MGD.

Other Miscellaneous Process and Components

The 2014 Master Plan identifies other critical treatment processes and components that were also designed for 1.5 MGD, which include the following.

- Pumps
- Facility Force Main

From Tables 6, 7, and 8, as well as other miscellaneous treatment processes and components, it is demonstrated that the limiting factor for treatment is the biologic capacity (BOD). Therefore, the available capacity within the existing treatment facility is controlled by the percentages indicated in Table 9.

Table 9: Existing Treatment System Capacity

Category of User	Used Capacity (%)
Existing	67.6%
10-year	27.3%
Beyond 10-year	5.1 %

DEMANDS PLACED ON FACILITIES BY NEW DEVELOPMENT

A demographics analysis of Stansbury Park's existing and future population, land-use, development patterns, and development potential was conducted by Aqua Engineering and made a part of the 2014 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 Stansbury Park in 2013 was estimated to be 11,180, with an average of 4 persons per household. The projected population in 2023 (10-year planning period) is 15,640, and the projected population in 2033 (20-year planning period) is 21,450. Based on these criterion, together with the projected non-residential future growth, Table 10 describes the projected future ERUs and unit demands within the district.

Table 10: Future Sewer Projections (Collection)

Year	*ERUs	System Peak Day Flow (MGD)
2013	3,279	3.93
2023	4,604	5.52
2033	6,261	7.51

*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 2014 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 11. A corresponding map (Figure 4) 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. Based on coordination with the district, projects have been updated from the master-plan list to account for updated scheduling of anticipated development and phasing of future development, as well as updates

accounting for current construction industry costs. The capital improvement project list has also been updated to include new projects driven by current development.

Capital Improvement Projects

Table 11: Sewer – Capital Improvement Projects (See also Appendix 1, Figure 4)

Project No. and Impact Fee Eligibility	Project Name	Type [1]	Description	Cost Estimate	Project Need	Const. Date
6- Year Planning Period						
1 (PIF)	24" OUTFALL SEWER LINE	C	Remove existing 21" sewer line within Wild Horse Ranch Phases 1 & 2 Subdivision. Construct new 24" sewer line. Full Construction (Impact Fee Eligible).	$202,157.34	Project needed for development and Future Users in Basins 1-4	2017
2 (IF)	Headwork Sewer Lagoon Design	TR	Design of upgrades to the Headworks Building and Lagoon near headwork (Impact Fee Eligible)	$58,739.00	Project needed to provide emergency backup in case of pump failure in headworks building	2017
3 (PIF)	Village Blvd 15” Sewer Line	C	15” sewer line from SR-138 for 658 feet along Village Blvd. Upsize Cost (Partial Impact Fee Eligible)	$33,364.00	Project needed for development and future users south of SR-138	2017
4 (PIF)	10" SEWER LINE THROUGH RESERVE SUBDIVISION	C	10" sewer line from Stallion Way to the west corner of the Reserve master planned subdivision, running through the subdivision to Bates Canyon Road at Cambridge Way. Upsize cost (Partial Impact Fee Eligible).	$7,252.00	Project is needed for development and future users east of SR- 36.	2017
5 (IF)	10" SEWER LINE IN BATES CANYON ROAD	C	10" sewer line along Bates Canyon from Cambridge Way to SR-36. Full cost (Impact Fee Eligible).	$54,336.00	Project is needed for development and future users east of SR- 36.	2017

6 (IF)	BASIN 7 OUTFALL SEWER LINE	C	Phase 1- 18" sewer line from SR-138 to Wild Horse Ranch Subdivision (Full cost). Phase 2- 18" sewer line from west boundary of Wild Horse Subdivision to the first intersection east (Upsize). Regional Pump Station 18" Bypass line through Wild Horse Ranch Subdivision (Upsize). 24" sewer line from the west intersection to Clark Dr. in Wild Horse Subdivision (Upsize). 30" sewer line along Clark Dr. to the Subdivision North Boundary (Upsize). Phase 3 - 30" Sewer line from north side of Wild Horse Subdivision to treatment headworks (Full cost).	$833,910.00	This project will increase the capacity for built-out conditions.	2017
7(PIF)	18" SEWER LINE ALONG VILLAGE BOULEVARD TO SR-138	C	18" Sewer line along Village Boulevard to SR-138. Upsize Cost (Partial Impact Fee Eligible).	$62,212.00	This project will increase the capacity for built-out conditions.	2017
8(IF)	VILLAGE BOULEVARD 18" SEWER LINE (CROSSING SR-138)	C	18" Sewer line at Village Boulevard crossing SR-138. Full Construction (Impact Fee Eligible).	$67,024.00	This project will increase capacity for built-out conditions.	2017
9 (IF)	REGIONAL PUMP STATION 18" BYPASS LINE (CROSSING SR-138)	PS	18" sewer line from regional pump station to Wild Horse Ranch Subdivision (Basin7 Outfall Sewer Line). Decommission regional pump station. Full construction (Impact Fee Eligible).	$354,687.00	This project will provide capacity for southwest portion of the District.	2017
10 (PIF)	BASIN 7 SEWER TRUNK LINE	C	10" collection sewer line within southwest corner of district. 15" sewer line from village Blvd. to a junction point within southwest quadrant development (Location to be determined). Upsize cost (Partial Impact Fee Eligible).	$174,000.00	This project will increase the capacity for build-out conditions.	2017

		6- Year Planning Period Subtotal		**$1,847,681.34**	**N/A**	**N/A**
10- Year Planning Period						
11 (PIF)	PARCEL 9 PUMP STATION UPGRADE	PS	Remove existing (4) - 5 hp pumps from each of the two existing wet wells and equip with (4) - 10 hp pumps.	$194,481.00	This project will increase the capacity for built-out conditions.	2023
12 (IF)	12" SEWER LINE ALONG VILLAGE BOULEVARD (LANYARD LANE TO ARDENNES WAY)	C	Remove existing 10" sewer line. Construct new 12" sewer line. Full cost (Impact Fee Eligible).	$415,183.86	This project will increase the capacity for built-out conditions.	2023
13 (IF)	10" SEWER LINE ALONG VILLAGE BOULEVARD (ARDENNES WAY TO SAND HILL WAY)	C	10 " sewer line along village Blvd. from Ardennes Way to Sand Hill Way. Full Cost (Impact Fee Eligible).	$153,081.39	This project will increase the capacity for built-out conditions.	2023
14 (IF)	VILLAGE BOULEVARD (BASIN 6, 12" SEWER TRUNK LINE)	C	12" sewer trunk line on Village Blvd. from Lanyard Lane to Park View Drive (Diverting flows from Lanyard Lane down Village Blvd.). Full cost (Impact Fee Eligible).	$525,525.00	This project will free up capacity in the existing Lakeside trunk line, needed for the annexed property east of SR-36.	2023
15 (PIF)	PARK VIEW DRIVE (BASIN 6, 15" SEWER TRUNK LINE)	C	15" sewer line extended on Park View Drive. Upsize cost (Partial Impact Fee Eligible) along Park View Drive.	$16,200.00	This will free up additional capacity within the existing Lakeside trunk line leading to 30- inch trunk line upgrade, which will be needed for the recently annexed property east of SR-36.	2023

16 (IF)	WWTF UPGRADES	TR	The upgrades to the WWTF to meet the 20-year planning period treatment requirements and include a larger chlorine contact chamber. Full cost (Impact Fee Eligible).	$704,130.00	This project will increase treatment capacity for the 20-year planning period.	2025
17 (PIF)	BASIN 8 SEWER TRUNK LINE	C	Upsizing of sewer trunk line within basin 8 (Northwest District Service Area). Upsize to 18" from parcel 9 pump station to Village Blvd. Extension. Upsize to 15" west of Village Blvd. extension. Any pump station retrofit (If required) to be at developer's cost. Upsize cost (Partial Impact Fee).	$229,687.50	This project will increase the capacity for build-out conditions.	2025
10- Year Planning Period Subtotal				**$2,238,288.75**	**N/A**	**N/A**
Total Capital Facility Project Costs				**$4,085,970.09**	**N/A**	**N/A**

[1] C=Collection, TR=Treatment, PS=Pump Station

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 2023).

Impact Fee Eligibility

The district, in its 2014 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.

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

SPID 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 were the same steps 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 12 below.

Table 12: Master Planned Collection System - Pipeline Capacity

Category of User	Used Capacity (%)
Existing	7.2%
10-year	15.9
Beyond 10-year	76.9%

Pump Stations

As stated, SPID currently operates two collection system pump stations. However, the Regional Pump Station is presently at its calculated capacity, and is scheduled to be removed from service in the near future as new gravity transmission lines are constructed. Therefore, the Parcel 9 Pump Station is the only collection system pump station, which has upgrades programmed for future users. Information for the Parcel 9 Pump Station is provided in Table 13 below.

Basis of Used Capacity

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

Table 13: 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
Regional Pump Station	Decommissioned	0.00%	0.00%	100.00%
Parcel 9 Pump Station Upgrade	*3,802 (Increase of 2,039)			

* Source = 2014 Sewer Master Plan Table 19.

Treatment Capacity

It is estimated that the treatment facilities (WWTF) will reach design capacity in year 2026, with the limiting unit process being identified as the chlorine contact chambers. Other treatment processes are calculated to have an extended capacity (refer to the 2014 Master Plan, page 37). This time period (2026) is beyond the established 10-year planning period used for assessing impact fees. It is noted however, that the WWTF will reach 75% design capacity in year 2020. Regulatory guidelines require that planning efforts begin once a WWTF reaches 75% of its design capacity. Therefore, it is recommended that a detailed analysis for treatment upgrades commence near year 2020. As the contact chambers are a critical and limiting treatment process, plans for an upgrade have been identified in the 2014 Master plan for year 2026. This is the only programmed capital treatment

improvement project now scheduled.

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 14 below.

Table 14: Master Planned WWTF Upgrade

WWTF Capacity (MGD)	Existing Capacity (ERUs)	Percent to Existing Development (%)	Percent to 10-yr	Percent Existing Beyond 10-yr
*1.8	**6,421 (Increase of 1,071)	0.00%	0.00%	100.00%

*Source: 2014 Sewer Master Plan, page 37

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 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, 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

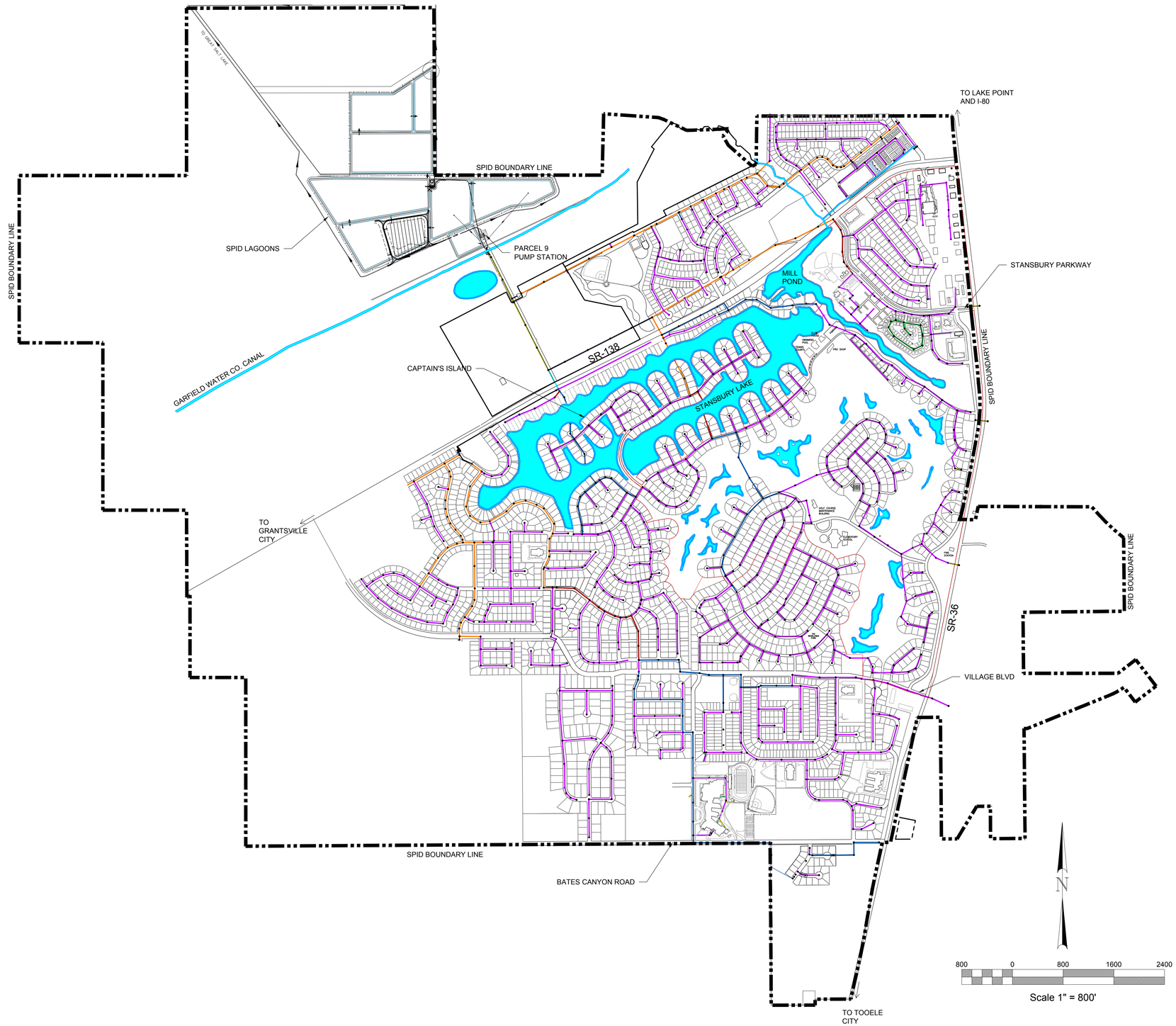
As one of the main sources of revenue (identified in the previous section), which will be used to fund needed capital improvements projects, impact fees will be collected by SPID. An Impact Fee Analysis was conducted by Zion Bank, and impact fees associated with the master planned capital facilities have been derived for the 10-year planning period. A copy of the Analysis is provided in Appendix 4. A summary of the recommendations is provided in Table 15.

Table 15 – Impact Fees: Cost Per Unit

Service Area	$ / ERU
SPID	$2,353.55

SEWER IMPACT FEE REQUIREMENTS

The District uses the impact fee worksheet (provided in Appendix 5), 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.



LEGEND

- 6" SEWER LINE
- 8" SEWER LINE
- 10" SEWER LINE
- 12" SEWER LINE
- 15" SEWER LINE
- 18" SEWER LINE
- 21" SEWER LINE
- 24" SEWER LINE
- DISTRICT BOUNDARY

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208-2100

SEWER IFFP
STANSBURY PARK, UTAH
EXISTING SEWER MAP

231 West 800 South Salt Lake City, Utah 84101
Ward Engineering Group
Planning Engineering Surveying
PH: 801 . 487 . 8040 FX: 801 . 487 . 8668

CLIENT: SPID
DWG: Sewer Map
JOB No: SPID 191
DO NOT SCALE THIS DRAWING. DRAWING IS REDUCED IF LESS THAN 22 in x 34 in. USE GRAPHIC AND NOTES TO TAKE MEASUREMENTS

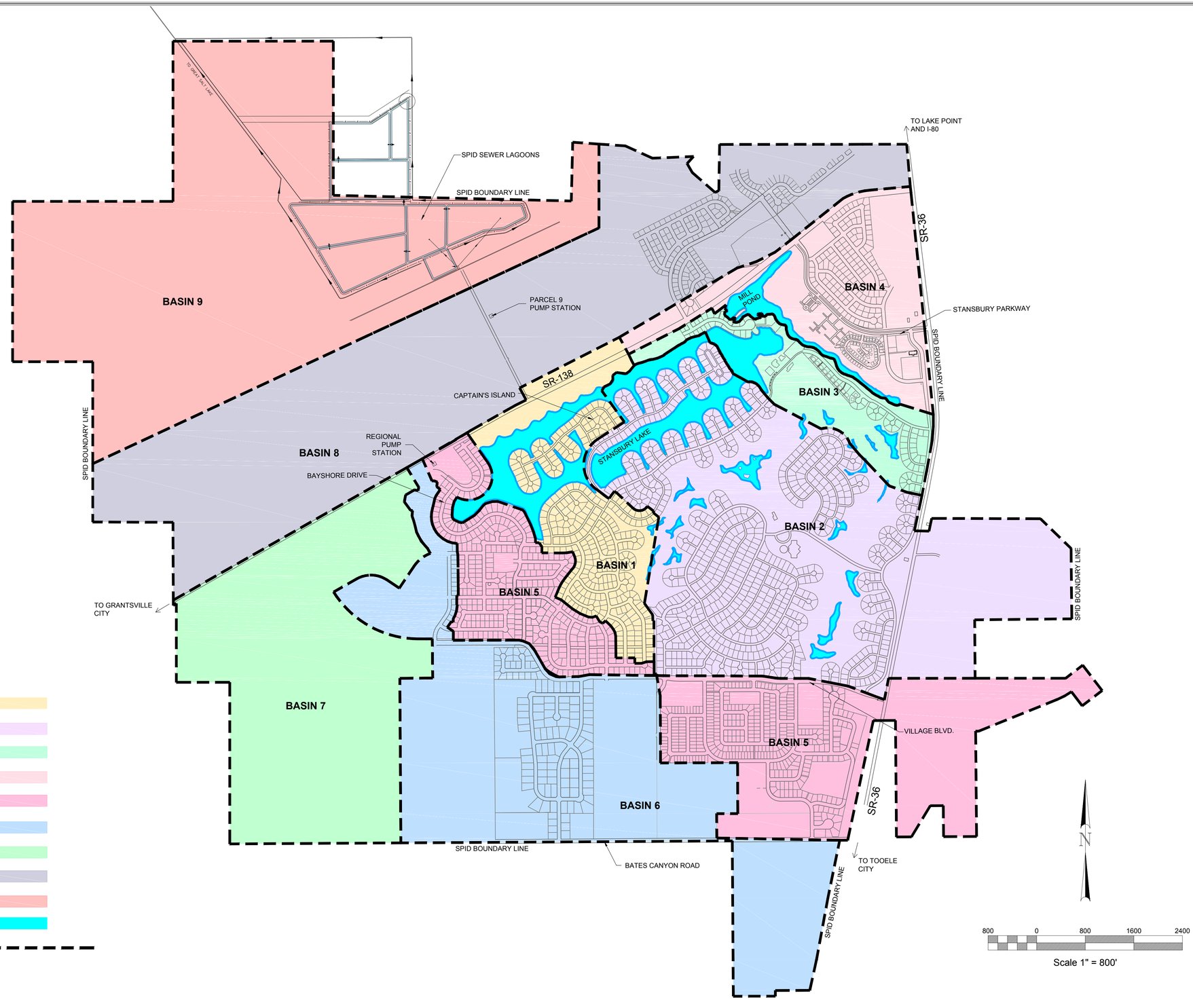
DRAWN BY: MFAJ
DESIGN BY: AJS
CHECKED BY: BTH
DATE: 11/01/17

REVISIONS

FIGURE
1

FILENAME: W:\SPID\2015 Capital Facilities Plans\Design\Sewer Map.dwg TAB: Sewer Map PLOT DATE AND TIME: 11/1/2017 3:23 PM

SEWER IFFP
STANSBURY PARK, UTAH
SEWER BASIN MAP



LEGEND:

- BASIN 1
- BASIN 2
- BASIN 3
- BASIN 4
- BASIN 5
- BASIN 6
- BASIN 7
- BASIN 8
- BASIN 9
- LAKE
- BASIN BOUNDARY LINE

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231 West 800 South Salt Lake City, Utah 84101
Ward Engineering Group
Planning Engineering Surveying
PH: 801 . 487 . 8040 FX: 801 . 487 . 8668

CLIENT: SPID
DWG: Basin Map
JOB No: SPID 191
DO NOT SCALE THIS DRAWING DRAWING IS REDUCED IF LESS THAN 24"x36". DIMENSIONS AND NOTES TAKE PRECEDENCE

DRAWN BY: MFAJ
DESIGN BY: AJS
CHECKED BY: BTH
DATE: 11/01/17

REVISIONS

FIGURE
3

FILENAME: W:\SPID\2015 Capital Facilities Plans\Design\Basin Map.dwg TAB: Layout1 PLOT DATE AND TIME: 11/1/2017 3:25 PM

SEWER TRUNK LINE EXHIBIT

SEWER IFFP
STANSBURY PARK, UTAH

231 West 800 South Salt Lake City, Utah 84101
Ward Engineering Group
Planning Engineering Surveying
PH: 801 . 487 . 8040 FX: 801 . 487 . 8668

CLIENT: SPID
DWG: Existing Trunk Line Exhibit
JOB No: SPID.191
DO NOT SCALE THIS DRAWING DRAWING IS REDUCED IF LESS THAN 22 in x 34 in ( ) DIMENSIONS AND NOTES THAT PRECEDE
DRAWN BY: MFAJ
DESIGN BY: AJS
CHECKED BY: BTH
DATE: 11/01/17
REVISIONS

FIGURE
2

SPID LAGOONS
TO GREAT SALT LAKE
SPID BOUNDARY LINE
SR-36
SR-138
STANSBURY PARKWAY
VILLAGE BLVD
BATES CANYON RD
15" SEWER TRUNK
12" SEWER TRUNK
10" SEWER TRUNK
24" SEWER TRUNK
21" SEWER TRUNK
30" SEWER TRUNK
18" SEWER TRUNK

LEGEND

- 10" SEWER LINE
- 12" SEWER LINE
- 15" SEWER LINE
- 18" SEWER LINE
- 21" SEWER LINE
- 24" SEWER LINE
- 30" SEWER LINE
- SPID BOUNDAURY LINE

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208-2100
(SALT LAKE METRO)
NATIONAL 811 NOTIFICATION CENTER
811
811 SOUTH 1500 WEST
WOODS CROSS, UTAH 84087-1377

FILENAME: W:\SPID\2015 Capital Facilities Plans\Design\Existing Trunk Line Exhibit.dwg TAB: 24x36 PLOT DATE AND TIME: 11/1/2017 3:32 PM

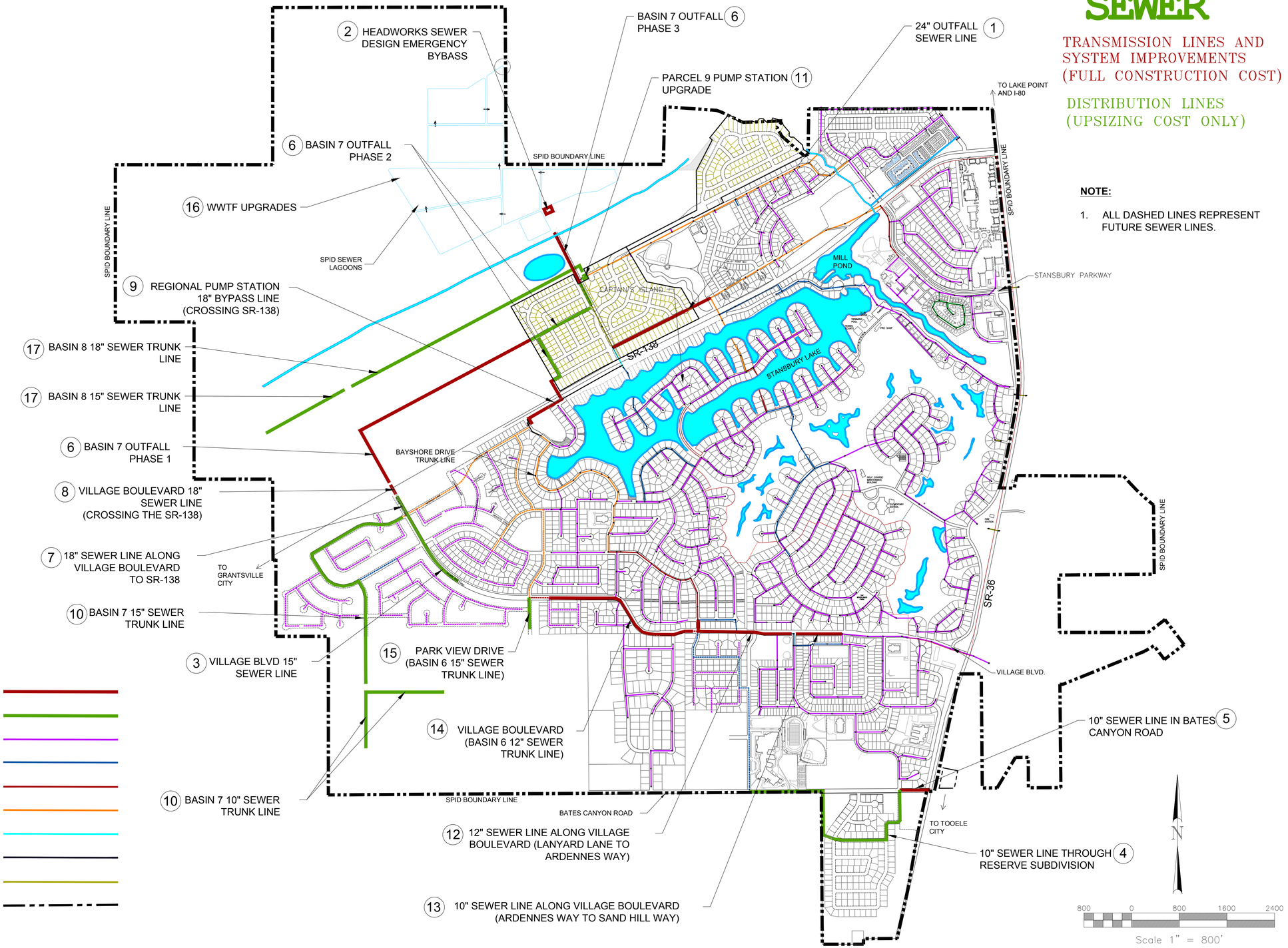
SEWER

TRANSMISSION LINES AND SYSTEM IMPROVEMENTS (FULL CONSTRUCTION COST)

DISTRIBUTION LINES (UPSIZING COST ONLY)

NOTE:

1. ALL DASHED LINES REPRESENT FUTURE SEWER LINES.



LEGEND

- FULL CONSTRUCTION COST
- UPSIZE COST ONLY
- 8" SEWER LINE
- 10" SEWER LINE
- 12" SEWER LINE
- 15" SEWER LINE
- 18" SEWER LINE
- 21" SEWER LINE
- 24" SEWER LINE
- DISTRICT BOUNDARY

CALL BEFORE YOU DIG. IT'S FREE & IT'S THE LAW (Requires) 1-800-662-4111 208-2100

SEWER IFFP
STANSBURY PARK, UTAH
PROPOSED IMPROVEMENTS

231 West 800 South Salt Lake City, Utah 84101
Ward Engineering Group
Planning Engineering Surveying
PH: 801 . 487 . 8040 FX: 801 . 487 . 8868

CLIENT: SPID
DWG: Proposed Improvements (Revised)
JOB No: SPID 191
DO NOT SCALE THIS DRAWING. DRAWING IS REDUCED IF LESS THAN 24" x 36". VERIFICATION WITH NOTED DISTANCES

DRAWN BY: MFAJ
DESIGN BY: AJS
CHECKED BY: BTH
DATE: 11/01/17

REVISIONS

FIGURE
4

FILENAME: W:\SPID\2015 Capital Facilities Plans\Design\Proposed Improvements (Revised).dwg TAB: Overall Site (horiz) PLOT DATE AND TIME: 11/1/2017 3:28 PM

CLIENT: Stansbury Park
PROJECT: Wildhorse, Clearwater Sewer Line Upsize
PROJECT NO: 1
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	Upsize Reimbursement to 24" sewer line per Development Agreement, Exhibit C.	LS	1	$202,157.34	$202,157.34
				Construction Subtotal	**$202,157.34**
				SPID Admistrative Fees	
				District Engineering Fees	
				Other Fees	
				PROJECT TOTAL	**$202,157.34**

CLIENT: Stansbury Park
PROJECT: Headwork Sewer Lagoon Design
PROJECT NO: 2
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	Total Construction Cost Per Cost Allocation Agreement	LS	1	$58,739.00	$58,739.00
				Construction Subtotal	**$58,739.00**
				SPID Admistrative Fees	
				District Engineering Fees	
				Other Fees	
				PROJECT TOTAL	**$58,739.00**

CLIENT: Stansbury Park
PROJECT: Village Blvd 15" Sewer Line
PROJECT NO: 3
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	Upsize Reimbursement to 24" sewer line per Development Agreement, Exhibit C.	LS	1	$33,364.00	$33,364.00
				Construction Subtotal	**$33,364.00**
				SPID Admistrative Fees	
				District Engineering Fees	
				Other Fees	
				PROJECT TOTAL	**$33,364.00**

CLIENT: Stansbury Park
PROJECT: 10-inch Sewer Line through Reserve Subdivision
PROJECT NO: 4
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	Upsize Reimbursement to 18" sewer line per Development Agreement, Exhibit C.	LS	1	$7,252.00	$7,252.00
				Construction Subtotal	**$7,252.00**
				SPID Administrative Fees	
				District Engineering Fees	
				Other fees	
				PROJECT TOTAL	**$7,252.00**

CLIENT: Stansbury Park
PROJECT: 10-inch Sewer Line in Bates Canyon Road
PROJECT NO: 5
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	Total Construction Cost Per Cost Allocation Agreement	LS	1	$54,336.00	$54,336.00
				Construction Subtotal	**$54,336.00**
				SPID Admistrative Fees	
				District Engineering Fees	
				Other Fees	
				PROJECT TOTAL	**$54,336.00**

CLIENT: Stansbury Park
PROJECT: Basin 7 Outfall Sewer Line
PROJECT NO: 6
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	Total project reimbursement per Development Agreement, Exhibit C	LS	1	$833,910.00	$833,910.00
				Construction Subtotal	**$833,910.00**
				SPID Adminstrative Costs	
				District Engineering Costs	
				Other Costs	
				PROJECT TOTAL	**$833,910.00**

CLIENT: Stansbury Park
PROJECT: 18-inches sewer line along Village Boulevard to SR- 138
PROJECT NO: 7
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	Upsize Reimbursement to 18" sewer line per Development Agreement, Exhibit C.	lump	1	$62,212.00	$62,212.00
				Construction Subtotal	**$62,212.00**
				SPID Administrative Costs	
				District Engineering Costs	
				Other Costs	
				PROJECT TOTAL	**$62,212.00**

CLIENT: Stansbury Park
PROJECT: Village Boulevard (Crossing SR-138)
PROJECT NO: 8
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	Total project reimbursement per Development Agreement, Exhibit C	lump	1	$67,024.00	$67,024.00
				Construction Subtotal	**$67,024.00**
				SPID Administrative Costs	
				District Engineering Costs	
				Other Costs	
				PROJECT TOTAL	**$67,024.00**

CLIENT: Stansbury Park
PROJECT: Regional Pump Station Bybpass Line (Crossing SR-138)
PROJECT NO: 9
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	Total construction cost per contractor's contract and change orders	lump	1	$354,687.00	$354,687.00
7	Easement	ACRE	0.08		$0.00
				Construction Subtotal	**$354,687.00**
				SPID Administravie Costs	
				District Engineering Costs	
				Other Costs	
				PROJECT TOTAL	**$354,687.00**

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

CLIENT: Stansbury Park
PROJECT: Basin 7 Sewer Trunk Line
PROJECT NO: 10
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	6,950	$35.00	$243,250.00
2	5-foot Sewer Manhole	EA	36	$4,200.00	$151,200.00
3	Connection to Existing Manhole	EA	1	$2,200.00	$2,200.00
4	Miscellaneous Fittings and Appurtenances	LS	1	$25,000.00	$25,000.00
				Construction Subtotal	**$421,650.00**
				Mobilization (10%)	$42,165.00
				Construction Contingency (20%)	$84,330.00
				Engineering and Construction Management (17%)	$71,680.50
				PROJECT TOTAL	**$619,825.50**

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST	**$268,250.00**

Item	Description	Unit	Qty	Unit Price	Total Cost
1	15-inch PVC Sewerline SDR35	LF	4,550	$55.00	$250,250.00
2	10-inch PVC Sewerline SDR35	LF	2400	$45.00	$108,000.00
3	Miscellaneous Administrative	EA	1	$15,000.00	$15,000.00
4	Miscellaneous Fittings and Appurtenances	LS	1	$40,000.00	$40,000.00
				PROJECT TOTAL	**$413,250.00**

Upsize Cost	$145,000.00
Misc. Construction Cost (20%)	$29,000.00
UPSIZE COST	**$174,000.00**

Upsize costs are the difference of the 10-inch and 15-inch improvments and 8-inch minumim improvements.

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

CLIENT: Stansbury Park
PROJECT: Parcel 9 Pump Station Upgrades
PROJECT NO: 11
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	10 hp Flygt Drywell pump w/ VFD (800 gpm @ 24 feet)	EA	4	$9,500.00	$38,000.00
2	Remove and Salvage of Existing Pumps	LS	1	$5,500.00	$5,500.00
3	Install New Pumps	EA	1	$30,000.00	$30,000.00
4	Flowmeter	EA	2	$4,400.00	$8,800.00
5	Site Work	LS	1	$20,000.00	$20,000.00
6	SCADA Controls/ Electrical	LS	1	$20,000.00	$20,000.00
7	Miscellaneous Fittings and Appurtenances	LS	1	$10,000.00	$10,000.00
				Construction Subtotal	**$132,300.00**
				Mobilization (10%)	$13,230.00
				Construction Contingency (20%)	$26,460.00
				Engineering and Construction Management (17%)	$22,491.00
				PROJECT TOTAL	**$194,481.00**

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

CLIENT: Stansbury Park
PROJECT: Village Boulevard (Lanyard Lane to Ardennes Way) Project
PROJECT NO: 12
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	12-inch PVC Sewerline SDR35	LF	1,783	$50.00	$89,150.00
2	Roadaway Replacement	LF	1,783	$22.00	$39,226.00
3	5-foot Sewer Manhole	EA	8	$4,900.00	$39,200.00
4	Connection to Existing Sewer	EA	2	$2,200.00	$4,400.00
5	Sewer Line Removal and Disposal	LF	1,783	$14.00	$24,962.00
6	Sewer Manhole Removal and Disposal	EA	5	$1,100.00	$5,500.00
7	Dewatering	LS	1	$15,000.00	$15,000.00
8	Bypass Pumping	LS	1	$20,000.00	$20,000.00
9	Traffic Control	LS	1	$20,000.00	$20,000.00
10	QC/QA Testing	LS	1	$10,000.00	$10,000.00
11	Miscellaneous Fittings and Appurtenances	LS	1	$15,000.00	$15,000.00
				Construction Subtotal	**$282,438.00**
				Mobilization (10%)	$28,243.80
				Construction Contingency (20%)	$56,487.60
				Engineering and Construction Management (17%)	$48,014.46
				PROJECT TOTAL	**$415,183.86**

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

CLIENT: Stansbury Park
PROJECT: Village Boulevard (Ardennes Way to Sand Hill Way) Project
PROJECT NO: 13
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	10-inch PVC Sewerline SDR35	LF	811	$45.00	$36,495.00
2	Roadaway Replacement	LF	811	$22.00	$17,842.00
3	Sewer Manhole	EA	2	$4,200.00	$8,400.00
4	Connection to Existing Sewer	EA	2	$2,200.00	$4,400.00
5	Dewatering	LS	1	$10,000.00	$10,000.00
6	Traffic Control	LS	1	$16,500.00	$16,500.00
7	QC/QA Testing	LS	1	$5,000.00	$5,000.00
8	Miscellaneous Fittings and Appurtenances	LS	1	$5,500.00	$5,500.00
				Construction Subtotal	**$104,137.00**
				Mobilization (10%)	$10,413.70
				Construction Contingency (20%)	$20,827.40
				Engineering and Construction Management (17%)	$17,703.29
				PROJECT TOTAL	**$153,081.39**

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

CLIENT: Stansbury Park
PROJECT: Village Boulevard (Basin 6 Sewer Trunk Line)
PROJECT NO: 14
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	12-inch PVC Sewerline SDR35	LF	2,700	$50.00	$135,000.00
2	Roadaway Replacement	LF	2,700	$22.00	$59,400.00
3	5 foot Sewer Manhole	EA	8	$4,900.00	$39,200.00
4	Connection to Existing Manhole	EA	2	$2,200.00	$4,400.00
5	Dewatering	LS	1	$20,000.00	$20,000.00
6	Bypass Pumping	LS	1	$28,000.00	$28,000.00
7	Traffic Control	LS	1	$25,000.00	$25,000.00
8	QC/QA Testing	LS	1	$10,000.00	$10,000.00
9	Miscellaneous Utility Relocation	LS	1	$20,000.00	$20,000.00
10	Miscellaneous Fittings and Appurtenances	LS	1	$16,500.00	$16,500.00
				Construction Subtotal	**$357,500.00**
				Mobilization (10%)	$35,750.00
				Construction Contingency (20%)	$71,500.00
				Engineering and Construction Management (17%)	$60,775.00
				PROJECT TOTAL	**$525,525.00**

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

CLIENT: Stansbury Park
PROJECT: Park View Drive (Basin 6 Sewer Trunk Line)
PROJECT NO: 15
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	550	$35.00	$19,250.00
2	5-foot Sewer Manhole	EA	2	$4,200.00	$8,400.00
3	Connection to Existing Manhole	EA	1	$2,200.00	$2,200.00
4	Miscellaneous Fittings and Appurtenances	LS	1	$2,500.00	$2,500.00
				Construction Subtotal	**$32,350.00**
				Mobilization (10%)	$3,235.00
				Construction Contingency (20%)	$6,470.00
				Engineering and Construction Management (17%)	$5,499.50
				PROJECT TOTAL	**$47,554.50**

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST	**$21,750.00**

Item	Description	Unit	Qty	Unit Price	Total Cost
1	15-inch PVC Sewerline SDR35	LF	550	$55.00	$30,250.00
2	Miscellaneous fittings and Appurtenances	LS	1	$5,000.00	$5,000.00
				PROJECT TOTAL	**$35,250.00**

Upsize Cost	$13,500.00
Misc. Construction Cost (20%)	$2,700.00
UPSIZE COST	**$16,200.00**

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

CLIENT: Stansbury Park
PROJECT: Wastewater Treatment Facility Upgrades
PROJECT NO: 16
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
Chlorine contract Chamber Upgrades					
1	Earthwork/ Fine Grading	CY	1,500	$8.00	$12,000.00
2	Erosion Control	LS	1	$3,000.00	$3,000.00
3	Modification of Existing Piping including 18-inch SDR35 PVC to and from Contact Chamber; 6-inch SDR35 PVC sewer line to chamber; and 2-inch Sch 80 PVC chemical feed line. Item includes Fittings, Valves, and Appurtenances	LS	1	$30,000.00	$30,000.00
4	Modify Existing Liner. Furnish and Install HDPE Liner including pipe penetrations and anchor trench	LS	1	$20,000.00	$20,000.00
5	Furnish and Install 4-ft wide x 3-ft tall Fiberglass Weir Gate	EA	2	$22,000.00	$44,000.00
6	Furnish and Install 58' long by 57'-4" wide by 8 foot tall Chlorine Contact Chamber Structure with 5 chanbers on each side including grating, 8-foot walls, baffles, grating, stairs, and appurtenances.	LS	1	$330,000.00	$330,000.00
7	Electrical/ SCADA	LS	1	$40,000.00	$40,000.00
				Construction Subtotal	**$479,000.00**
				Mobilization (10%)	$47,900.00
				Construction Contingency (20%)	$95,800.00
				Engineering and construction Management (17%)	$81,430.00
				PROJECT TOTAL	**$704,130.00**

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

CLIENT: Stansbury Park
PROJECT: Basin 8 Sewer Trunk Line
PROJECT NO: 17
WORKSHT: Engineers Opinion of Probable Cost
DATE: 30-Aug-17

Item	Description	Unit	Qty	Unit Price	Total Cost
1	8-inch PVC Sewerline SDR35	LF	6,150	$35.00	$215,250.00
2	5-foot Sewer Manhole	EA	16	$4,200.00	$67,200.00
3	Connection to Existing Manhole	EA	1	$2,200.00	$2,200.00
4	Miscellaneous Fittings and Appurtenances	LS	1	$22,000.00	$22,000.00
				Construction Subtotal	**$306,650.00**
				Mobilization (10%)	$30,665.00
				Construction Contingency (20%)	$61,330.00
				Engineering and Construction Management (17%)	$52,130.50
				PROJECT TOTAL	**$450,775.50**

8-INCH SEWERLINE, FITTINGS, AND APPURTENANCES COST	**$237,250.00**

Item	Description	Unit	Qty	Unit Price	Total Cost
1	18-inch PVC Sewerline SDR35	LF	4,550	$60.00	$273,000.00
2	15-inch PVC Sewerline SDR35	LF	1600	$55.00	$88,000.00
3	Misc. connection improvements to parcel 9 pump station	LS	1	$30,000.00	$30,000.00
4	Miscellaneous Fittings and Appurtenances	LS	1	$30,000.00	$30,000.00
				PROJECT TOTAL	**$421,000.00**

Upsize Cost	$183,750.00
Misc. Construction Cost (25%)	$45,937.50
UPSIZE COST	**$229,687.50**

Upsize costs are the difference of the 15-inch and 18-inch improvments and 8-inch minumim improvements.

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

SPID Sewer Hydraulic Treatment System Capacity

Year	ERUs	Average Daily Flow (MGD)	Average Daily Flow (gpm)	Treatment Capacity (gpm)	Percent Capacity (%)	Existing Capacity (ERCs)	2013 ERCs	Percent to Existing Development (%)	2023 ERCs	Increase in ERCs - 10 yr	Number of ERCs available for 10 yr	Percent to 10-yr	Percent Existing Beyond 10-yr
2013	3279	0.92	638.89	1040.28	61.4%	5350	3279	61.3%	4604	1325	2071	24.8%	13.9%
2023	4604	1.32	916.67	1040.28	88.1%								
2033	6261	1.81	1256.94	1040.28	120.8%								
Total	**14144**				**0.614151**	**5350**	**3279**	**61.3%**	**4604**	**1325**	**2071**	**24.8%**	**13.9%**

* The Master Plan refers to 280 gpd/ERU for Average Day for existing conditions and 700 gpd for peak day. We have used 280 gal per day with the Average Day Numbers.

SPID Sewer Biological Treatment System Capacity (BOD)

Year	ERUs	BOD Loading (lbs/day)	Unit BOD Loading (lb/day/ERU)	Biologic Treatment Capacity (lb/day)	Percent Capacity (%)	Existing Capacity (ERCs)	2013 ERCs	Percent to Existing Development (%)	2023 ERCs	Increase in ERCs - 10 yr	Number of ERCs available for 10 yr	Percent to 10-yr	Percent Existing Beyond 10-yr
2013	3279	2230	0.68	5980	37.3%	8794	3279	37.3%	4604	1325	5515	15.1%	47.6%
2023	4604	3131	0.68	5980	52.4%								
2033	6261	4257	0.68	5980	71.2%								
Total	**14144**					**8794**	**3279**	**37.3%**	**4604**	**1325**	**5515**	**15.1%**	**47.6%**

* The Master Plan refers to 300 gpd/ERU for Average Day and 750 gpd for future. We have used 300 gal per day with the Average Day Numbers.

** As measured in 2013.

SPID Sewer Biological Treatment System Capacity (TSS)

Year	ERUs	TSS Loading (lbs/day)	Unit TSS Loading (lb/day/ERU)	Biologic Treatment Capacity (lb/day)	Percent Capacity (%)	Existing Capacity (ERUs)	2013 ERUs	Percent to Existing Development (%)	2023 ERUs	Increase in ERUs - 10 yr	Number of ERUs available for 10 yr	Percent to 10-yr	Percent Existing Beyond 10-yr
2013	3279	2623	0.8	6795	38.6%	8494	3279	38.6%	4604	1325	5215	15.6%	45.8%
2023	4604	3683	0.8	6795	54.2%								
2033	6261	5009	0.8	6795	73.7%								
Total	**14144**					**8494**	**3279**	**38.6%**	**4604**	**1325**	**5215**	**15.6%**	**45.8%**

* The Master Plan refers to 300 gpd/ERU for Average Day and 750 gpd for future. We have used 300 gal per day with the Average Day Numbers.

SPID Sewer Disinfection Treatment System Capacity

Year	ERUs	Disinfection Capacity (MGD)	Percent Capacity (%)	Existing Capacity (ERUs)	2013 ERUs	Percent to Existing Development (%)	2023 ERUs	Increase in ERUs - 10 yr	Number of ERUs available for 10 yr	Percent to 10-yr	Percent Existing Beyond 10-yr
2013	3279	1.5	61.3%	5350	3279	61.3%	4604	1325	2071	24.8%	13.9%
2023	4604	1.5	86.1%								
2033	6261	1.5	117.0%								
Total	**14144**			**5350**	**3279**	**61.3%**	**4604**	**1325**	**2071**	**24.8%**	**13.9%**

* The Master Plan refers to 300 gpd/ERU for Average Day and 750 gpd for future. We have used 300 gal per day with the Average Day Numbers.

SPID Sewer Pump Station Capacity

Pump Station	Existing ERUs	Pumping Capacity (gpm)	Pump Station Capacity (ERUs)	Percent Capacity (%)	2013 ERUs	Percent to Existing Development (%)	2023 ERUs	Increase in ERUs - 10 yr	Number of ERUs available for 10 yr	Percent to 10-yr	Percent Existing Beyond 10-yr
Regional	1257	630	1210	103.9%	1762	59.3%	2467	705	1211	23.7%	17%
Parcel 9	505	918	1763	28.6%							
Total	**1762**	**1548**	**2973**	**59.3%**	**1762**	**59.3%**	**2467**	**705**	**1211**	**23.7%**	**17%**

SPID Future System Available Capacities

Label	Size	Length	Slope	Present			Year 2033			Replacement Cost ($)	Present	2033	2023	Present	2033	2023	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
				Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D		%Cap	%Cap	%Cap	Cap*$	Cap*$	Cap*$			
G-19	10	151	0.00709	357911.21	737848.67	0.441	567415.92	1938283.26	0.381	$ 4,530.00	65.8%	56.9%	61.9%	$ 2,981.69	$ 2,576.01	$ 2,805.51	7%	15.9%	76.9%
G-38	10	225	0.00716	357854.00	880505.77	0.467	567358.71	1947760.3	0.381	$ 6,750.00	69.7%	56.9%	64.1%	$ 4,704.85	$ 3,838.43	$ 4,328.59			
G-45	10	281	0.00356	306721.81	844715.92	0.43	516226.52	181616.46	0.418	$ 8,430.00	64.2%	62.4%	63.4%	$ 5,410.30	$ 5,259.31	$ 5,344.73			
G-53	10	307	0.00743	358027.51	1220287.26	0.392	567532.18	1949198.12	0.381	$ 9,210.00	58.5%	56.9%	57.8%	$ 5,388.54	$ 5,237.33	$ 5,322.87			
G-72	12	57	0.00193	25.91	1011515.97	0.035	269.09	1011515.97	0.397	$ 2,280.00	5.2%	59.3%	28.7%	$ 119.10	$ 1,350.99	$ 654.08			
G-201	21	230	0.00043	1080714.73	2135263.01	0.437	1153055.83	14811578.54	0.232	$ 13,800.00	65.2%	34.6%	51.9%	$ 9,000.90	$ 4,778.51	$ 7,167.22			
G-202	21	405	0.00049	1080214.39	2275635.92	0.387	1129975.79	2275635.92	0.397	$ 24,300.00	57.8%	59.3%	58.4%	$ 14,035.97	$ 14,398.66	$ 14,193.48			
G-202A	21	391	0.00128	1079892.25	3661945.85	0.415	1119107.62	3661945.85	0.424	$ 23,460.00	61.9%	63.3%	62.5%	$ 14,531.19	$ 14,846.33	$ 14,668.05			
G-203	21	399	0.00226	1080531.74	4863513.22	0.389	1141588.54	4863513.22	0.302	$ 23,940.00	58.1%	45.1%	52.4%	$ 13,899.49	$ 10,790.87	$ 12,549.49			
G-276	12	85	0.00753		1997994.81		411687.49	1997994.81	0.332	$ 3,400.00	0.0%	49.6%	21.5%	$ -	$ 1,684.78	$ 731.66			
G-895	12	400	0.0074		1980750.12		412192.03	1980750.12	0.39	$ 16,000.00	0.0%	58.2%	25.3%	$ -	$ 9,313.43	$ 4,044.59			
G-896	12	400	0.00745		1987430.58		412010.24	1987430.58	0.332	$ 16,000.00	0.0%	49.6%	21.5%	$ -	$ 7,928.36	$ 3,443.08			
G-897	12	310	0.01758		3053031.15		411858.41	3053031.15	0.332	$ 12,400.00	0.0%	49.6%	21.5%	$ -	$ 6,144.48	$ 2,668.39			
G-898	12	128	0.0018		976051.57		310720.69	976051.57	0.36	$ 5,120.00	0.0%	53.7%	23.3%	$ -	$ 2,751.04	$ 1,194.71			
G-899	12	222	0.00176		965094.07		310662.5	965094.07	0.389	$ 8,880.00	0.0%	58.1%	25.2%	$ -	$ 5,155.70	$ 2,238.99			
G-900	12	205	0.00176		964912.98		310561.58	964912.98	0.39	$ 8,200.00	0.0%	58.2%	25.3%	$ -	$ 4,773.13	$ 2,072.85			
G-901	12	234	0.00748		1991246.05		310468.41	1991246.05	0.339	$ 9,360.00	0.0%	50.6%	22.0%	$ -	$ 4,735.88	$ 2,056.67			
G-902	12	400	0.00742		1984093.16		310362.05	1984093.16	0.287	$ 16,000.00	0.0%	42.8%	18.6%	$ -	$ 6,853.73	$ 2,976.40			
G-903	12	131	0.0074		1981363.01		310180.22	1981363.01	0.287	$ 5,240.00	0.0%	42.8%	18.6%	$ -	$ 2,244.60	$ 974.77			
G-904	12	272	0.00746		1989195.18		310120.68	1989195.18	0.287	$ 10,880.00	0.0%	42.8%	18.6%	$ -	$ 4,660.54	$ 2,023.95			
G-905	18	382	0.0012		2355796.41		333955.91	2355796.41	0.267	$ 21,010.00	0.0%	39.9%	17.3%	$ -	$ 8,372.64	$ 3,636.03			
G-906	18	400	0.0012		2351695.81		333695.46	2351695.81	0.254	$ 22,000.00	0.0%	37.9%	16.5%	$ -	$ 8,340.30	$ 3,621.98			
G-907	18	400	0.0012		2351695.81		333422.71	2351695.81	0.254	$ 22,000.00	0.0%	37.9%	16.5%	$ -	$ 8,340.30	$ 3,621.98			
G-908	18	400	0.0012		2351695.81		222900	2351695.81	0.231	$ 22,000.00	0.0%	34.5%	15.0%	$ -	$ 7,585.07	$ 3,294.01			
G-909	18	400	0.0012		2351695.81		112377.27	2351695.81	0.178	$ 22,000.00	0.0%	26.6%	11.5%	$ -	$ 5,844.78	$ 2,538.24			
G-910	18	400	0.0012		2351695.81		1104.55	2351695.81	0.083	$ 22,000.00	0.0%	12.4%	5.4%	$ -	$ 2,725.37	$ 1,183.56			
G-911	18	400	0.0012		2351695.81		831.82	2351695.81	0.016	$ 22,000.00	0.0%	2.4%	1.0%	$ -	$ 525.37	$ 228.16			
G-912	15	400	0.0015		1616911.17		559.09	1616911.17	0.016	$ 20,000.00	0.0%	2.4%	1.0%	$ -	$ 477.61	$ 207.41			
G-913	15	400	0.0015		1616911.17		331.82	1616911.17	0.013	$ 20,000.00	0.0%	1.9%	0.8%	$ -	$ 388.06	$ 168.52			
G-914	15	400	0.00152		1628585.77		104.55	1628585.77	0.009	$ 20,000.00	0.0%	1.3%	0.6%	$ -	$ 268.66	$ 116.67			
G-915	18	192	0.0012		2349086.82		334086.82	2349086.82	0.327	$ 10,560.00	0.0%	48.8%	21.2%	$ -	$ 5,153.91	$ 2,238.21			
G-925	15	199	0.00151		1620960.67		465724.77	1620960.67	0.396	$ 9,950.00	0.0%	59.1%	25.7%	$ -	$ 5,880.90	$ 2,553.92			
G-926	15	95	0.00147		1602664.98		465611.71	1602664.98	0.369	$ 4,750.00	0.0%	55.1%	23.9%	$ -	$ 2,616.04	$ 1,136.08			
G-927	15	150	0.00153		1634778.14		465557.73	1634778.14	0.367	$ 7,500.00	0.0%	54.8%	23.8%	$ -	$ 4,108.21	$ 1,784.09			
G-928	15	203	0.00148		1604919.08		465472.52	1604919.08	0.367	$ 10,150.00	0.0%	54.8%	23.8%	$ -	$ 5,559.78	$ 2,414.47			
G-929	15	199	0.00151		1620968.67		465657.18	1620968.67	0.368	$ 9,950.00	0.0%	54.9%	23.9%	$ -	$ 5,465.07	$ 2,373.34			
G-930	15	305	0.00151		1621622.94		465244.11	1621622.94	0.367	$ 15,250.00	0.0%	54.8%	23.8%	$ -	$ 8,353.36	$ 3,627.65			
G-931	15	357	0.00151		1623690.7		465070.8	1623690.70	0.367	$ 17,850.00	0.0%	54.8%	23.8%	$ -	$ 9,777.54	$ 4,246.14			
G-932	15	252	0.00147		1599709.5		365117.95	1599709.50	0.346	$ 12,600.00	0.0%	51.6%	22.4%	$ -	$ 6,506.87	$ 2,825.77			
G-933	15	210	0.038		8138274.43		406751.13	8138274.43	0.624	$ 10,500.00	0.0%	93.1%	40.4%	$ -	$ 9,779.10	$ 4,246.82			
G-934	15	215	0.00149		1610631.88		333881.83	1610631.88	0.278	$ 10,750.00	0.0%	41.5%	18.0%	$ -	$ 4,460.45	$ 1,937.06			
G-935	15	119	0.00151		1623690.7		333759.68	1623690.70	0.308	$ 5,950.00	0.0%	46.0%	20.0%	$ -	$ 2,735.22	$ 1,187.84			
G-936	15	153	0.0015		1618671.55		333692.03	1618671.55	0.308	$ 7,650.00	0.0%	46.0%	20.0%	$ -	$ 3,516.72	$ 1,527.22			
G-937	15	148	0.00149		1609611.31		333605.12	1609611.31	0.308	$ 7,400.00	0.0%	46.0%	20.0%	$ -	$ 3,401.79	$ 1,477.31			
G-938	15	205	0.00151		1623470.68		298271.03	1623470.68	0.3	$ 10,250.00	0.0%	44.8%	19.4%	$ -	$ 4,589.55	$ 1,993.13			
G-939	15	217	0.00147		1603192.43		298154.55	1603192.43	0.291	$ 10,850.00	0.0%	43.4%	18.9%	$ -	$ 4,712.46	$ 2,046.50			
G-940	15	370	0.00151		1624178.22		298031.24	1624178.22	0.291	$ 18,500.00	0.0%	43.4%	18.9%	$ -	$ 8,035.07	$ 3,489.43			
G-941	15	388	0.00149		1614130.58		162821.02	1614130.58	0.252	$ 19,400.00	0.0%	37.6%	16.3%	$ -	$ 7,296.72	$ 3,168.78			
G-942	15	388	0.00149		1614130.58		162600.57	1614130.58	0.214	$ 19,400.00	0.0%	31.9%	13.9%	$ -	$ 6,196.42	$ 2,690.95			
G-943	15	389	0.00152		1625682.16		162380.12	1625682.16	0.214	$ 19,450.00	0.0%	31.9%	13.9%	$ -	$ 6,212.39	$ 2,697.88			
G-944	10	141	0.00248		705485.85		162159.09	705485.85	0.323	$ 4,230.00	0.0%	48.2%	20.9%	$ -	$ 2,039.24	$ 885.59			
G-945	10	400	0.0025		708000.96		70992.43	708000.96	0.27	$ 12,000.00	0.0%	40.3%	17.5%	$ -	$ 4,835.82	$ 2,100.07			
G-946	10	400	0.0025		708000.96		70840.91	708000.96	0.214	$ 12,000.00	0.0%	31.9%	13.9%	$ -	$ 3,832.84	$ 1,664.50			
G-947	10	400	0.0025		708000.96		70689.4	708000.96	0.213	$ 12,000.00	0.0%	31.8%	13.8%	$ -	$ 3,814.93	$ 1,656.73			
G-948	10	100	0.0025		708000.96		70537.88	708000.96	0.213	$ 3,000.00	0.0%	31.8%	13.8%	$ -	$ 953.73	$ 414.18			
G-949	10	400	0.0025		708000.96		91113.25	708000.96	0.284	$ 12,000.00	0.0%	42.4%	18.4%	$ -	$ 5,086.57	$ 2,208.97			
G-950	10	400	0.0025		708000.96		90961.75	708000.96	0.242	$ 12,000.00	0.0%	36.1%	15.7%	$ -	$ 4,334.33	$ 1,882.29			
G-951	10	159	0.00252		710223.89		90810.22	710223.89	0.242	$ 4,770.00	0.0%	36.1%	15.7%	$ -	$ 1,722.90	$ 748.21			
G-953	12	535	0.002		1029742.95		243.18	1029742.95	0.177	$ 21,400.00	0.0%	26.4%	11.5%	$ -	$ 5,653.43	$ 2,455.14			
G-954	10	270	0.00589		1086627.07		313950.76	1086627.07	0.367	$ 8,100.00	0.0%	54.8%	23.8%	$ -	$ 4,436.87	$ 1,926.82			
G-955	10	270	0.00589		1086627.07		314053.02	1086627.07	0.367	$ 8,100.00	0.0%	54.8%	23.8%	$ -	$ 4,436.87	$ 1,926.82			
G-956	10	270	0.00589		1089627.07		314155.3	1089627.07	0.367	$ 8,100.00	0.0%	54.8%	23.8%	$ -	$ 4,436.87	$ 1,926.82			
G-958	24	124	0.00097		4548207.46		2001533.72	4548207.46	0.42	$ 8,060.00	0.0%	62.7%	27.2%	$ -	$ 5,052.54	$ 2,194.19			
G-959	24	350	0.001		4623389.54		2001851.92	4623389.54	0.428	$ 22,750.00	0.0%	63.9%	27.7%	$ -	$ 14,532.84	$ 6,311.24			
G-960	24	350	0.001		4623389.54		2002170.13	4623389.54	0.428	$ 22,750.00	0.0%	63.9%	27.7%	$ -	$ 14,532.84	$ 6,311.24			
G-961	24	350	0.001		4623389.54		2002488.18	4623389.54	0.428	$ 22,750.00	0.0%	63.9%	27.7%	$ -	$ 14,532.84	$ 6,311.24			
G-962	24	350	0.001		4623389.54		2002806.38	4623389.54	0.428	$ 22,750.00	0.0%	63.9%	27.7%	$ -	$ 14,532.84	$ 6,311.24			
G-963	24	350	0.001		4623389.54		2003124.58	4623389.54	0.38	$ 22,750.00	0.0%	56.7%	24.6%	$ -	$ 12,902.99	$ 5,603.44			
G-964	24	350	0.01014		14724502.85		2267043.45	14724502.85	0.296	$ 22,750.00	0.0%	44.2%	19.2%	$ -	$ 10,050.75	$ 4,364.78			
G-971	12	165	0.00709		1938941.87		567892.64	1938941.87	0.4	$ 6,600.00	0.0%	59.7%	25.9%	$ -	$ 3,940.30	$ 1,711.17			
G-972	12	314	0.00717		1949127.58		567817.64	1949127.58	0.381	$ 12,560.00	0.0%	56.9%	24.7%	$ -	$ 7,142.33	$ 3,101.73			
G-973	12	314	0.00713		1944791.36		567674.91	1944791.36	0.381	$ 12,560.00	0.0%	56.9%	24.7%	$ -	$ 7,142.33	$ 3,101.73			

Basin Summary

Basin #	Capacity Hydraulically Available	Limiting Pipe				Present			Year 2033			Replacement Cost ($)	Present %Cap Used	2033 %Cap Used	2023 %Cap Used	Present Cap*$	2033 Cap*$	2023 Cap*$	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
		Label*	Size	Length	Slope	Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D										
1	No	G-25	10	160	0.00244	263372.66	699094.93	0.424	263372.7	699094.93	0.424	$ 4,800.00	63.3%	63.3%	63.3%	$ 3,037.61	$ 3,037.61	$ 3,037.61	57%	5.8%	37.0%
2	yes	G-68	10	380	0.00474	566170.30	974559.36	0.658	592519.3	974559.36	0.677	$ 11,400.00	98.2%	101.0%	99.4%	$ 11,195.82	$ 11,519.10	$ 11,336.21			
3	no	G-16	10	136	0.00265	88232.13	728526.98	0.234	88232.13	728526.98	0.234	$ 5,440.00	34.9%	34.9%	34.9%	$ 1,899.94	$ 1,899.94	$ 1,899.94			
4	yes	G-177	15	307	0.00205	745720.72	1819218.12	0.437	731976.9	1891218.1	0.432	$ 16,885.00	65.2%	64.5%	64.9%	$ 11,013.05	$ 10,887.04	$ 10,958.33			
5	no	G-29	10	190	0.00968	358099.47	1393464.64	0.932				$ 5,700.00	139.1%	0.0%	78.7%	$ 7,928.96	$ -	$ 4,485.61			
6A	yes	G-15	10	125	0.00856	120247.04	1310088.77	0.24	253747.1	1310088.8	0.336	$ 3,750.00	35.8%	50.1%	42.0%	$ 1,343.28	$ 1,880.60	$ 1,576.63			
6B	yes	G-15	10	125	0.00856	120247.04	1310088.77	0.24	253747.1	1310088.8	0.336	$ 3,750.00	35.8%	50.1%	42.0%	$ 1,343.28	$ 1,880.60	$ 1,576.63			
7	yes	No Existing Infrastructure																			
8	yes	G-194	15	400	0.00175	237431.33	1746463.67	0.249	662681.3	1746463.7	0.444	$ 22,000.00	37.2%	66.3%	49.8%	$ 8,176.12	$ 14,579.10	$ 10,956.77			
9	yes	No Existing Infrastructure																			
Interceptor	yes	G-890	24	314	0.00124	3068041.37	5152618.23	0.551				$ 26,690.00	82.2%	0.0%	46.5%	$ 21,949.54	$ -	$ 12,417.41			

*For location of specific pipe segments labeled above please see exhibit 1-4 provided in the 2014 Master Plan.

** For general location of the trunk line see exhibit xx in this report

*** The capacity of a sewer trunk line is defined as d/D(depth to Diamter ratio)= 0.79 which is set forth in the 2014 sewer master plan.

Basin 1 Sewer Trunk Line

Basin 1 is in a fully developed area of the District with no feasible hydraulic connectivity for future users

Label*	Size	Length	Slope	Present			Year 2033			Replacement Cost ($)	Present	2033	2023	Present	2033	2023	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
				Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D		%Cap Used	%Cap Used	%Cap Used	Cap*$	Cap*$	Cap*$			
G-200	18	340	0.00339	1209994.93	3955068.12	0.361				$ 18,700.00	53.9%	0.0%	30.5%	$ 10,075.67	$ -	$ 5,700.06	37%	3.0%	59.9%
G-199	18	36	0.0035	263604.76	4016285.19	0.338	263600.68	21034207	0.118	$ 1,980.00	50.4%	17.6%	36.2%	$ 998.87	$ 348.72	$ 716.52			
G-14	10	122	0.00246	263580.23	702173.69	0.379	263580.23	702173.69	0.379	$ 3,660.00	56.6%	56.6%	56.6%	$ 2,070.36	$ 2,070.36	$ 2,070.36			
G-13	10	120	0.0025	263534.02	708000.96	0.424	263534.02	708000.96	0.424	$ 3,600.00	63.3%	63.3%	63.3%	$ 2,278.21	$ 2,278.21	$ 2,278.21			
G-52	10	306	0.00248	263488.56	705683.44	0.423	263488.56	705683.44	0.423	$ 9,180.00	63.1%	63.1%	63.1%	$ 5,795.73	$ 5,795.73	$ 5,795.73			
G-25	10	160	0.00244	263372.66	699094.93	0.424	263372.66	699094.93	0.424	$ 4,800.00	63.3%	63.3%	63.3%	$ 3,037.61	$ 3,037.61	$ 3,037.61			
G-9	10	108	0.00611	259562.05	1106936.62	0.378	259562.05	1106939.6	0.378	$ 3,240.00	56.4%	56.4%	56.4%	$ 1,827.94	$ 1,827.94	$ 1,827.94			
G-47	10	284	0.00296	205989.92	770095.02	0.342	205989.92	770095.02	0.342	$ 8,520.00	51.0%	51.0%	51.0%	$ 4,349.01	$ 4,349.01	$ 4,349.01			
G-21	10	155	0.00477	203632.34	978394.16	0.331	203632.34	978394.16	0.331	$ 4,650.00	49.4%	49.4%	49.4%	$ 2,297.24	$ 2,297.24	$ 2,297.24			
G-33	10	206	0.00476	203573.63	976659.70	0.31	203573.63	976659.7	0.31	$ 6,180.00	46.3%	46.3%	46.3%	$ 2,859.40	$ 2,859.40	$ 2,859.40			
G-17	10	142	0.00218	203495.60	661607.65	0.345	203495.6	661607.65	0.345	$ 4,260.00	51.5%	51.5%	51.5%	$ 2,193.58	$ 2,193.58	$ 2,193.58			
G-5	10	75	0.00547	148270.37	1046948.06	0.317	148270.37	1046948.1	0.317	$ 2,250.00	47.3%	47.3%	47.3%	$ 1,064.55	$ 1,064.55	$ 1,064.55			
G-7	10	99	0.00242	142929.25	697191.15	0.281	142929.25	697191.15	0.281	$ 2,970.00	41.9%	41.9%	41.9%	$ 1,245.63	$ 1,245.63	$ 1,245.63			
G-6	10	98	0.00357	140641.74	846223.00	0.292	140641.74	846223	0.292	$ 2,940.00	43.6%	43.6%	43.6%	$ 1,281.31	$ 1,281.31	$ 1,281.31			
G-60	10	337	0.00312	136854.62	790393.83	0.279	136854.62	790393.83		$ 10,110.00	41.6%	0.0%	23.6%	$ 4,209.99	$ -	$ 2,381.70			
G-22	10	156	0.00603	126842.72	1099171.52	0.255	126842.72	1099171.5	0.255	$ 4,680.00	38.1%	38.1%	38.1%	$ 1,781.19	$ 1,781.19	$ 1,781.19			
G-37	10	223	0.00605	50671.44	1101737.91	0.263	50671.44	1101737.9	0.263	$ 6,690.00	39.3%	39.3%	39.3%	$ 2,626.07	$ 2,626.07	$ 2,626.07			
G-8	10	107	0.00673	45248.48	1161550.78	0.141	45248.48	1161550.8	0.141	$ 3,210.00	21.0%	21.0%	21.0%	$ 675.54	$ 675.54	$ 675.54			
G-23	10	157	0.00376	42957.96	868040.57	0.144	42957.96	868040.57	0.144	$ 4,710.00	21.5%	21.5%	21.5%	$ 1,012.30	$ 1,012.30	$ 1,012.30			
G-51	10	305	0.00439	39148.49	938569.25	0.145	39148.49	938569.25	0.145	$ 9,150.00	21.6%	21.6%	21.6%	$ 1,980.22	$ 1,980.22	$ 1,980.22			
G-18	10	143	0.00573	31437.20	1072266.53	0.128	31437.2	1072266.5	0.128	$ 4,290.00	19.1%	19.1%	19.1%	$ 819.58	$ 819.58	$ 819.58			

*For location of specific pipe segments labeled above please see exhibit 1-4 provided in the 2014 Master Plan.

** For general location of the trunk line see exhibit xx in this report

*** The capacity of a sewer trunk line is defined as d/D(depth to Diamter ratio)= 0.79 which is set forth in the 2014 sewer master plan.

Basin 2

Basin 2 has 16.7 % Available

Label	Size	Length	Slope	Present			Year 2033			Replacement Cost ($)	Present	2033	2023	Present	2033	2023	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
				Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D		%Cap	%Cap	%Cap	Cap*$	Cap*$	Cap*$			
G-201	21	230	0.00043	1080714.73	2135263.01	0.437	1153055.8	14811579	0.232	$ 13,800.00	65.2%	34.6%	51.9%	$ 9,000.90	$ 4,778.51	$ 7,167.22	**63%**	**-0.6%**	**38.0%**
G-203	21	399	0.00226	1080531.74	4863513.22	0.389	1141588.5	4863513.2	0.302	$ 23,940.00	58.1%	45.1%	52.4%	$ 13,899.49	$ 10,790.87	$ 12,549.49			
G-202	21	405	0.00049	1080214.39	2275635.92	0.387	1129975.8	2275635.9	0.397	$ 24,300.00	57.8%	59.3%	58.4%	$ 14,035.97	$ 14,398.66	$ 14,193.48			
G-202A	21	391	0.00128	1079892.25	3661945.85	0.415	1119107.6	3661945.9	0.424	$ 23,460.00	61.9%	63.3%	62.5%	$ 14,531.19	$ 14,846.33	$ 14,668.05			
G-204	21	403	0.00074	1079581.21	2793980.68	0.4	1118796.6	2793980.7	0.408	$ 24,180.00	59.7%	60.9%	60.2%	$ 14,435.82	$ 14,724.54	$ 14,561.20			
G-179	15	328	0.00488	774380.35	2915839.41	0.349	800810.47	2915839.4	0.355	$ 16,400.00	52.1%	53.0%	52.5%	$ 8,542.69	$ 8,689.55	$ 8,606.47			
G-120	15	18	0.03889	685533.47	8232217.93	0.338	711926.3	8232908.7	0.344	$ 900.00	50.4%	51.3%	50.8%	$ 454.03	$ 462.09	$ 457.53			
G-183A	15	25	0.004	685523.23	2640404.89	0.336	711916.13	2640404.9	0.343	$ 1,250.00	50.1%	51.2%	50.6%	$ 626.87	$ 639.93	$ 632.54			
G-183	15	404	0.00198	685509.05	1857782.40	0.384	711901.88	1857782.4	0.392	$ 20,200.00	57.3%	58.5%	57.8%	$ 11,577.31	$ 11,818.51	$ 11,682.06			
G-185	15	344	0.00174	680779.44	1743560.16	0.427	707172.35	1743560.2	0.436	$ 17,200.00	63.7%	65.1%	64.3%	$ 10,961.79	$ 11,192.84	$ 11,062.13			
G-173	15	250	0.0032	676084.05	2361649.93	0.4	702476.87	2361649.9	0.409	$ 12,500.00	59.7%	61.0%	60.3%	$ 7,462.69	$ 7,630.60	$ 7,535.61			
G-81	12	125	0.0024	653755.60	1128026.89	0.484	680148.51	1128026.9	0.496	$ 5,000.00	72.2%	74.0%	73.0%	$ 3,611.94	$ 3,701.49	$ 3,650.83			
G-84	12	122	0.00328	619973.93	1318450.75	0.514	646366.8	1318450.8	0.527	$ 4,880.00	76.7%	78.7%	77.6%	$ 3,743.76	$ 3,838.45	$ 3,784.88			
G-88	12	266	0.00338	619918.50	1339350.57	0.48	646311.36	1339350.6	0.492	$ 10,640.00	71.6%	73.4%	72.4%	$ 7,622.69	$ 7,813.25	$ 7,705.45			
G-96	12	386	0.0013	613797.58	828714.96	0.559	640190.44	828714.96	0.574	$ 15,440.00	83.4%	85.7%	84.4%	$ 12,882.03	$ 13,227.70	$ 13,032.15			
G-68	10	380	0.00474	566170.30	974559.36	0.658	592519.32	974559.36	0.677	$ 11,400.00	98.2%	101.0%	99.4%	$ 11,195.82	$ 11,519.10	$ 11,336.21			
G-31	10	215	0.0093	521575.74	1365713.52	0.452	547925.07	1365713.5	0.465	$ 6,450.00	67.5%	69.4%	68.3%	$ 4,351.34	$ 4,476.49	$ 4,405.69			
G-35	10	200	0.0075	519244.34	1226293.63	0.476	545593.63	1226293.6	0.488	$ 6,000.00	71.0%	72.8%	71.8%	$ 4,262.69	$ 4,370.15	$ 4,309.35			
G-64	10	401	0.00673	519168.56	1161912.80	0.475	545517.89	161912.8	0.488	$ 12,030.00	70.9%	72.8%	71.7%	$ 8,528.73	$ 8,762.15	$ 8,630.10			
G-66	10	388	0.00907	516766.66	1348712.28	0.475	543115.99	1320102.5	0.487	$ 11,640.00	70.9%	72.7%	71.7%	$ 8,252.24	$ 8,460.72	$ 8,342.78			
G-63	10	254	0.00378	176611.37	870527.71	0.39	176600.37	924928.58	0.391	$ 7,620.00	58.2%	58.4%	58.3%	$ 4,435.52	$ 4,446.90	$ 4,440.46			
G-70	10	407	0.00381	168943.02	873841.14	0.302	168943.02	873841.14	0.297	$ 12,210.00	45.1%	44.3%	44.8%	$ 5,503.61	$ 5,412.49	$ 5,464.04			
G-59	10	336	0.00378	161965.53	870554.70	0.295	161965.53	870554.7	0.295	$ 10,080.00	44.0%	44.0%	44.0%	$ 4,438.21	$ 4,438.21	$ 4,438.21			
G-30	10	191	0.00377	160338.26	869387.53	0.292	160338.26	869387.53	0.292	$ 5,730.00	43.6%	43.6%	43.6%	$ 2,497.25	$ 2,497.25	$ 2,497.25			
G-20	10	152	0.00382	154946.51	874693.79	0.288	154946.51	874693.79	0.288	$ 4,560.00	43.0%	43.0%	43.0%	$ 1,960.12	$ 1,960.12	$ 1,960.12			

*For location of specific pipe segments labeled above please see exhibit 1-4 provided in the 2014 Master Plan.

** For general location of the trunk line see exhibit xx in this report

*** The capacity of a sewer trunk line is defined as d/D(depth to Diamter ratio)= 0.79 which is set forth in the 2014 sewer master plan.

Basin 3

Basin 3 is in a fully developed area of the District with no feasible hydraulic connectivity for future users

Label	Size	Length	Slope	Present			Year 2033			Replacement Cost ($)	Present	2033	2023	Present	2033	2023	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
				Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D		%Cap	%Cap	%Cap	Cap*$	Cap*$	Cap*$			
G-50	10	329	0.00267	88660.53	732330.68	0.213	88660.53	732330.68	0.213	$ 9,870.00	31.8%	31.8%	31.8%	$ 3,137.78	$ 3,137.78	$ 3,137.78	**33%**	**0.0%**	**67.2%**
G-65	10	384	0.00266	88535.91	729790.68	0.235	88535.91	729790.68	0.235	$ 11,520.00	35.1%	35.1%	35.1%	$ 4,040.60	$ 4,040.60	$ 4,040.60			
G-48	10	299	0.00264	88390.46	727849.84	0.235	88390.46	727849.84	0.235	$ 8,970.00	35.1%	35.1%	35.1%	$ 3,146.19	$ 3,146.19	$ 3,146.19			
G-12	10	119	0.00269	88227.20	734286.17	0.235	88277.2	734286.17	0.235	$ 3,570.00	35.1%	35.1%	35.1%	$ 1,252.16	$ 1,252.16	$ 1,252.16			
G-16	10	136	0.00265	88232.13	728526.98	0.234	88232.13	728526.98	0.234	$ 4,080.00	34.9%	34.9%	34.9%	$ 1,424.96	$ 1,424.96	$ 1,424.96			
G-56	10	319	0.00266	78388.94	730933.66	0.228	78388.94	730933.66	0.228	$ 9,570.00	34.0%	34.0%	34.0%	$ 3,256.66	$ 3,256.66	$ 3,256.66			
G-28	10	175	0.00269	75268.10	733827.10	0.219	75268.1	733827.1	0.219	$ 5,250.00	32.7%	32.7%	32.7%	$ 1,716.04	$ 1,716.04	$ 1,716.04			
G-41	10	258	0.00264	69951.82	726956.53	0.213	69951.82	726956.53	0.213	$ 7,740.00	31.8%	31.8%	31.8%	$ 2,460.63	$ 2,460.63	$ 2,460.63			
G-61	10	342	0.00266	66854.09	730418.03	0.207	66854.09	730418.03	0.207	$ 10,260.00	30.9%	30.9%	30.9%	$ 3,169.88	$ 3,169.88	$ 3,169.88			
G-36	10	219	0.00269	64474.55	734966.92	0.202	64474.55	734966.92	0.202	$ 6,570.00	30.1%	30.1%	30.1%	$ 1,980.81	$ 1,980.81	$ 1,980.81			
G-24	10	159	0.00314	62891.59	764054.45	0.195	62891.59	794054.45	0.195	$ 4,770.00	29.1%	29.1%	29.1%	$ 1,388.28	$ 1,388.28	$ 1,388.28			

*For location of specific pipe segments labeled above please see exhibit 1-4 provided in the 2014 Master Plan.

** For general location of the trunk line see exhibit xx in this report

*** The capacity of a sewer trunk line is defined as d/D(depth to Diamter ratio)= 0.79 which is set forth in the 2014 sewer master plan.

Basin 4

Basin 4 has 44.7% available capacity

Label	Size	Length	Slope	Present			Year 2033			Replacement Cost ($)	Present	2033	2023	Present	2033	2023	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
				Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D		%Cap	%Cap	%Cap	Cap*$	Cap*$	Cap*$			
G-177	15	307	0.00205	745720.72	1819218.12	0.437	731976.93	1891218.1	0.432	$ 15,350.00	65.2%	64.5%	64.9%	$10,011.87	$ 9,897.31	$ 9,962.12	40%	0.3%	59.7%
G-189	15	396	0.00263	304710.98	2139486.79	0.255	317496.77	2139486.8	0.26	$ 19,800.00	38.1%	38.8%	38.4%	$ 7,535.82	$ 7,683.58	$ 7,599.99			
G-164	15	236	0.00267	304485.99	2157023.15	0.254	317271.78	2157023.2	0.26	$ 11,800.00	37.9%	38.8%	38.3%	$ 4,473.43	$ 4,579.10	$ 4,519.32			
G-181	15	324	0.00265	304351.89	2150885.31	0.254	317137.7	2150885.3	0.259	$ 16,200.00	37.9%	38.7%	38.2%	$ 6,141.49	$ 6,262.39	$ 6,193.99			
G-98	15	21	0.00238	304167.80	2037116.60	0.257	316953.59	2037116.6	0.262	$ 1,050.00	38.4%	39.1%	38.7%	$ 402.76	$ 410.60	$ 406.16			
G-160	15	219	0.00265	301868.30	2148485.72	0.256	314654.09	2148485.7	0.262	$ 10,950.00	38.2%	39.1%	38.6%	$ 4,183.88	$ 4,281.94	$ 4,226.47			
G-174	15	293	0.00266	299493.86	2154041.29	0.253	312279.65	2154041.3	0.258	$ 14,650.00	37.8%	38.5%	38.1%	$ 5,532.01	$ 5,641.34	$ 5,579.49			
G-196	15	477	0.00264	299327.38	2145688.21	0.252	312113.17	2145688.2	0.257	$ 23,850.00	37.6%	38.4%	37.9%	$ 8,970.45	$ 9,148.43	$ 9,047.74			
G-184	15	333	0.00264	299056.37	2146148.41	0.252	310342.15	2146148.4	0.257	$ 16,650.00	37.6%	38.4%	37.9%	$ 6,262.39	$ 6,386.64	$ 6,316.35			
G-195	15	403	0.00266	298867.16	2151195.59	0.252	310152.95	2151195.6	0.257	$ 20,150.00	37.6%	38.4%	37.9%	$ 7,578.81	$ 7,729.18	$ 7,644.11			
G-167	15	264	0.0025	298638.18	2087609.61	0.254	309923.98	2087423.4	0.258	$ 13,200.00	37.9%	38.5%	38.2%	$ 5,004.18	$ 5,082.99	$ 5,038.40			
G-87	12	207	0.0058	298488.19	1753150.83	0.28	309773.97	1753150.8	0.286	$ 8,280.00	41.8%	42.7%	42.2%	$ 3,460.30	$ 3,534.45	$ 3,492.50			
G-78	12	108	0.00278	298394.09	1213563.71	0.31	309656.36	1213563.7	0.316	$ 4,320.00	46.3%	47.2%	46.7%	$ 1,998.81	$ 2,037.49	$ 2,015.61			
G-91	12	242	0.03587	166950.76	4360798.41	0.273	175950.75	4360798.4	0.28	$ 9,680.00	40.7%	41.8%	41.2%	$ 3,944.24	$ 4,045.37	$ 3,988.16			
G-83	12	164	0.00476	166840.76	1587958.72	0.214	175840.75	1587958.7	0.22	$ 6,560.00	31.9%	32.8%	32.3%	$ 2,095.28	$ 2,154.03	$ 2,120.80			
G-74	12	84	0.00429	166766.21	1507389.33	0.222	175766.21	1507389.3	0.228	$ 3,360.00	33.1%	34.0%	33.5%	$ 1,113.31	$ 1,143.40	$ 1,126.38			
G-82	12	145	0.00434	166728.04	1517749.52	0.224	175728.03	1517749.5	0.23	$ 5,800.00	33.4%	34.3%	33.8%	$ 1,939.10	$ 1,991.04	$ 1,961.66			

*For location of specific pipe segments labeled above please see exhibit 1-4 provided in the 2014 Master Plan.

** For general location of the trunk line see exhibit xx in this report

*** The capacity of a sewer trunk line is defined as d/D(depth to Diamter ratio)= 0.79 which is set forth in the 2014 sewer master plan.

Basin 5

Basin 5 has no available capacity until master planned projects 10 & 11 are constructed in year 2023

Label	Size	Length	Slope	Present			Year 2033			Replacement Cost ($)	Present	2033	2023	Present	2033	2023	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
				Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D		%Cap	%Cap	%Cap	Cap*$	Cap*$	Cap*$			
G-894	15	47	0.00362	940464.19	2510822.80	0.403				$ 2,350.00	60.1%	0.0%	34.0%	$ 1,413.51	$ -	$ 799.66	**62%**	**-3.4%**	**41.7%**
G-893	15	87	0.00356	790558.59	2492078.70	0.406	776811.64	2492078.7	0.365	$ 4,350.00	60.6%	54.5%	57.9%	$ 2,635.97	$ 2,369.78	$ 2,520.37			
G-138	15	168	0.00339	790509.13	2431774.61	0.39	776762.18	2468790.1	0.385	$ 8,400.00	58.2%	57.5%	57.9%	$ 4,889.55	$ 4,826.87	$ 4,862.33			
G-176	15	304	0.00174	767459.45	1743177.76	0.404	753712.73	1757692.4	0.399	$ 15,200.00	60.3%	59.6%	60.0%	$ 9,165.37	$ 9,051.94	$ 9,116.11			
G-182	15	325	0.0203	761286.68	1881355.29	0.454	747542.81	1881355.3	0.448	$ 16,250.00	67.8%	66.9%	67.4%	$ 11,011.19	$ 10,865.67	$ 10,948.00			
G-136	15	160	0.00206	758102.02	1895996.41	0.441	744358.15	1895996.4	0.437	$ 8,000.00	65.8%	65.2%	65.6%	$ 5,265.67	$ 5,217.91	$ 5,244.93			
G-150	15	193	0.00207	753511.17	1900605.03	0.439	739767.3	1900605	0.434	$ 9,650.00	65.5%	64.8%	65.2%	$ 6,322.91	$ 6,250.90	$ 6,291.64			
G-132	15	149	0.00208	751151.46	1904268.77	0.437	737407.58	1904268.8	0.433	$ 7,450.00	65.2%	64.6%	65.0%	$ 4,859.18	$ 4,814.70	$ 4,839.86			
G-177	15	307	0.00205	745720.72	1819218.12	0.437	731976.93	1891218.1	0.432	$ 15,350.00	65.2%	64.5%	64.9%	$ 10,011.87	$ 9,897.31	$ 9,962.12			
G-140	15	170	0.00206	741796.33	1894305.82	0.436	728052.46	1894305.8	0.431	$ 8,500.00	65.1%	64.3%	64.8%	$ 5,531.34	$ 5,467.91	$ 5,503.80			
G-149	15	190	0.00205	739449.71	1819455.10	0.435	725705.84	1819455	0.43	$ 9,500.00	64.9%	64.2%	64.6%	$ 6,167.91	$ 6,097.01	$ 6,137.12			
G-146	15	185	0.00205	736341.79	1892110.37	0.434	722597.92	1892110.4	0.429	$ 9,250.00	64.8%	64.0%	64.5%	$ 5,991.79	$ 5,922.76	$ 5,961.81			
G-127	15	128	0.00211	733236.65	1917420.78	0.431	719492.78	1917420.8	0.427	$ 6,400.00	64.3%	63.7%	64.1%	$ 4,117.01	$ 4,078.81	$ 4,100.42			
G-178	15	307	0.00176	736749.50	1750927.74	0.249	518749.5	1750927.7	0.4	$ 15,350.00	37.2%	59.7%	47.0%	$ 5,704.70	$ 9,164.18	$ 7,207.06			
G-134	15	157	0.00382	724749.77	2580871.20	0.388	711005.9	2580871.2	0.384	$ 7,850.00	57.9%	57.3%	57.7%	$ 4,545.97	$ 4,499.10	$ 4,525.62			
G-116	15	96	0.0049	722336.27	2291149.91	0.351	708592.4	2921149.9	0.347	$ 4,800.00	52.4%	51.8%	52.1%	$ 2,514.63	$ 2,485.97	$ 2,502.18			
G-151	15	193	0.0029	722281.72	2248826.19	0.364	708537.85	2248826.2	0.361	$ 9,650.00	54.3%	53.9%	54.1%	$ 5,242.69	$ 5,199.48	$ 5,223.92			
G-111	15	87	0.00287	703225.08	2237952.74	0.387	689481.28	2237952.7	0.383	$ 4,350.00	57.8%	57.2%	57.5%	$ 2,512.61	$ 2,486.64	$ 2,501.33			
G-147	15	188	0.00282	701675.66	2216662.34	0.386	687931.79	2216662.3	0.382	$ 9,400.00	57.6%	57.0%	57.4%	$ 5,415.52	$ 5,359.40	$ 5,391.15			
G-100	15	29	0.01034	684787.35	4246216.76	0.355	671043.48	4246216.8	0.352	$ 1,450.00	53.0%	52.5%	52.8%	$ 768.28	$ 761.79	$ 765.46			
G-175	15	295	0.00339	682520.86	2430689.72	0.343	668776.99	2430689.7	0.34	$ 14,750.00	51.2%	50.7%	51.0%	$ 7,551.12	$ 7,485.07	$ 7,522.44			
G-80	12	142	0.01056	682353.28	2366547.84	0.443	668609.41	2366547.8	0.438	$ 5,680.00	66.1%	65.4%	65.8%	$ 3,755.58	$ 3,713.19	$ 3,737.17			
G-73	12	65	0.01338	567553.25	2663893.01	0.412	654792.42	2663893	0.425	$ 2,600.00	61.5%	63.4%	62.3%	$ 1,598.81	$ 1,649.25	$ 1,620.71			
G-93	12	279	0.0052	562273.72	1659952.77	0.397	649512.86	1659952.8	0.429	$ 11,160.00	59.3%	64.0%	61.3%	$ 6,612.72	$ 7,145.73	$ 6,844.19			
G-94	12	304	0.00474	559146.89	1584740.97	0.406	646386.06	1584741	0.44	$ 12,160.00	60.6%	65.7%	62.8%	$ 7,368.60	$ 7,985.67	$ 7,636.58			
G-86	12	181	0.0053	540713.55	1676911.57	0.401	627952.73	1676911.6	0.434	$ 7,240.00	59.9%	64.8%	62.0%	$ 4,333.19	$ 4,689.79	$ 4,488.06			
G-79	12	113	0.00611	539131.28	1799281.67	0.386	626370.45	1799281.7	0.419	$ 4,520.00	57.6%	62.5%	59.8%	$ 2,604.06	$ 2,826.69	$ 2,700.74			
G-85	12	178	0.01124	512330.83	2440724.88	0.377	599570.01	2440724.9	0.409	$ 7,120.00	56.3%	61.0%	58.3%	$ 4,006.33	$ 4,346.39	$ 4,154.01			
G-77	12	91	0.0078	509999.93	2033865.87	0.372	597239.1	2033865.9	0.404	$ 3,640.00	55.5%	60.3%	57.6%	$ 2,021.01	$ 2,194.87	$ 2,096.51			
G-75	12	90	0.005	500053.71	1628166.57	0.376	587292.88	1628166.6	0.409	$ 3,600.00	56.1%	61.0%	58.3%	$ 2,020.30	$ 2,197.61	$ 2,097.30			
G-76	12	90	0.00633	498512.81	1832441.02	0.374	585751.98	1823441	0.407	$ 3,600.00	55.8%	60.7%	58.0%	$ 2,009.55	$ 2,186.87	$ 2,086.55			
G-92	12	268	0.00664	495471.88	1876533.99	0.366	582711.05	1876534	0.398	$ 10,720.00	54.6%	59.4%	56.7%	$ 5,856.00	$ 6,368.00	$ 6,078.35			
G-90	12	232	0.00569	491600.07	1736827.97	0.365	578839.25	1736828	0.398	$ 9,280.00	54.5%	59.4%	56.6%	$ 5,055.52	$ 5,512.60	$ 5,254.02			
G-89	12	223	0.0052	488494.62	1660696.97	0.368	575733.79	1660697	0.402	$ 8,920.00	54.9%	60.0%	57.1%	$ 4,899.34	$ 5,352.00	$ 5,095.92			
G-54	10	310	0.00871	363589.26	1312493.03	0.42	5489.77	1321493	0.267	$ 9,300.00	62.7%	39.9%	52.8%	$ 5,829.85	$ 3,706.12	$ 4,907.57			
G-57	10	323	0.00963	360471.82	1389449.53	0.394	2372.35	1389449.5	0.039	$ 9,690.00	58.8%	5.8%	35.8%	$ 5,698.30	$ 564.04	$ 3,468.62			
G-29	10	190	0.00968	358099.47	1393464.64	0.932				$ 5,700.00	139.1%	0.0%	78.7%	$ 7,928.96	$ -	$ 4,485.61			
G-53	10	307	0.00743	358027.51	1220287.26	0.392	567532.18	1949198.1	0.381	$ 9,210.00	58.5%	56.9%	57.8%	$ 5,388.54	$ 5,237.33	$ 5,322.87			
G-19	10	151	0.00709	357911.21	737848.67	0.441	567415.92	1938283.3	0.381	$ 4,530.00	65.8%	56.9%	61.9%	$ 2,981.69	$ 2,576.01	$ 2,805.51			
G-38	10	225	0.00716	357854.00	880505.77	0.467	567358.71	1947760.3	0.381	$ 6,750.00	69.7%	56.9%	64.1%	$ 4,704.85	$ 3,838.43	$ 4,328.59			
G-45	10	281	0.00356	306721.81	844715.92	0.43	516226.52	181616.46	0.418	$ 8,430.00	64.2%	62.4%	63.4%	$ 5,410.30	$ 5,259.31	$ 5,344.73			
G-32	10	197	0.00162	304365.39	570697.17	0.468	199714.77	570697.17	0.349	$ 5,910.00	69.9%	52.1%	62.1%	$ 4,128.18	$ 3,078.49	$ 3,672.33			
G-46	10	282	0.00163	207369.24	571897.51	0.468	100468.64	571897.51	0.346	$ 8,460.00	69.9%	51.6%	61.9%	$ 5,909.37	$ 4,368.90	$ 5,240.38			
G-4	10	38	0.00237	149442.12	689117.53	0.383	42541.52	689117.53	0.24	$ 1,140.00	57.2%	35.8%	47.9%	$ 651.67	$ 408.36	$ 546.01			
G-40	10	247	0.00717	147927.73	1198676.52	0.299	41027.12	1198676.5	0.163	$ 7,410.00	44.6%	24.3%	35.8%	$ 3,306.85	$ 1,802.73	$ 2,653.65			
G-39	10	247	0.00146	144834.17	540588.27	0.301	37933.56	540588.27	0.154	$ 7,410.00	44.9%	23.0%	35.4%	$ 3,328.97	$ 1,703.19	$ 2,622.94			

*For location of specific pipe segments labeled above please see exhibit 1-4 provided in the 2014 Master Plan

** For general location of the trunk line see exhibit xx in this report

*** The capacity of a sewer trunk line is defined as d/D(depth to Diamter ratio)= 0.79 which is set forth in the 2014 sewer master plan

Basin 6 Trunkline A & B

Trunkline A connects to Basin 5 until 2023. The master plnned project 12 disconnects Trunkline A from Basin 5 and connects to Trunkline B in 2023.

Label	Size	Length	Slope	Present			Year 2033			Replacement Cost ($)	Present	2033	2023	Present	2033	2023	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
				Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D		%Cap	%Cap	%Cap	Cap*$	Cap*$	Cap*$			
G-15	10	125	0.00856	120247.04	1310088.77	0.24	253747.05	1310088.8	0.336	$ 3,750.00	35.8%	50.1%	42.0%	$ 1,343.28	$ 1,880.60	$ 1,576.63	25%	11.8%	63.7%
G-131	15	145	0.00145	149720.91	1588788.83	0.209	618368.2	1588788.8	0.368	$ 7,250.00	31.2%	54.9%	41.5%	$ 2,261.57	$ 3,982.09	$ 3,008.75			
G-110	15	85	0.00141	149638.53	1568634.25	0.208	618285.8	1568634.3	0.431	$ 4,250.00	31.0%	64.3%	45.5%	$ 1,319.40	$ 2,733.96	$ 1,933.71			
G-157	15	203	0.00143	149590.23	1577943.73	0.208	618237.49	1577943.7	0.434	$ 10,150.00	31.0%	64.8%	45.7%	$ 3,151.04	$ 6,574.78	$ 4,637.88			
G-143	15	180	0.00144	149474.89	1586685.87	0.208	618122.15	1586685.9	0.434	$ 9,000.00	31.0%	64.8%	45.7%	$ 2,794.03	$ 5,829.85	$ 4,112.41			
G-128	15	137	0.00146	149372.62	1595126.93	0.207	618019.87	1595126.9	0.433	$ 6,850.00	30.9%	64.6%	45.5%	$ 2,116.34	$ 4,426.94	$ 3,119.78			
G-123	15	125	0.00144	149294.77	1584242.93	0.207	617942.05	1584242.9	0.433	$ 6,250.00	30.9%	64.6%	45.5%	$ 1,930.97	$ 4,039.18	$ 2,846.51			
G-121	15	116	0.00147	149223.75	1598217.93	0.207	617871.01	1598217.9	0.433	$ 5,800.00	30.9%	64.6%	45.5%	$ 1,791.94	$ 3,748.36	$ 2,641.56			
G-124	15	127	0.00142	149157.84	1517719.08	0.207	617805.1	1571719.1	0.433	$ 6,350.00	30.9%	64.6%	45.5%	$ 1,961.87	$ 4,103.81	$ 2,892.06			
G-125	15	127	0.0015	147585.69	1614787.85	0.206	616232.96	1614787.9	0.432	$ 6,350.00	30.7%	64.5%	45.4%	$ 1,952.39	$ 4,094.33	$ 2,882.58			
G-104	15	68	0.00132	147513.52	1518823.58	0.207	616160.8	1581823.6	0.433	$ 3,400.00	30.9%	64.6%	45.5%	$ 1,050.45	$ 2,197.31	$ 1,548.50			
G-102	15	45	0.00156	147474.88	1646581.74	0.207	616122.16	1646581.7	0.434	$ 2,250.00	30.9%	64.8%	45.6%	$ 695.15	$ 1,457.46	$ 1,026.20			
G-142	15	180	0.00144	102645.76	1586685.87	0.188	555543.02	1586685.9	0.421	$ 9,000.00	28.1%	62.8%	43.2%	$ 2,525.37	$ 5,655.22	$ 3,884.59			
G-107	15	80	0.004	63513.90	2640404.89	0.113	259263.9	2640404.9	0.223	$ 4,000.00	16.9%	33.3%	24.0%	$ 674.63	$ 1,331.34	$ 959.82			
G-106	15	69	0.00449	57344.02	2798316.50	0.105	253094.02	2798316.5	0.214	$ 3,450.00	15.7%	31.9%	22.7%	$ 540.67	$ 1,101.94	$ 784.42			
G-145	15	183	0.00142	17004.28	1573626.50	0.075	446651.56	1573626.5	0.364	$ 9,150.00	11.2%	54.3%	29.9%	$ 1,024.25	$ 4,971.04	$ 2,738.24			
G-118	15	106	0.00151	15400.30	1612987.83	0.071	445047.56	1621987.8	0.362	$ 5,300.00	10.6%	54.0%	29.5%	$ 561.64	$ 2,863.58	$ 1,561.32			
G-159	15	208	0.00144	139090.08	1585511.85	0.067	442737.34	1585511.9	0.36	$ 10,400.00	10.0%	53.7%	29.0%	$ 1,040.00	$ 5,588.06	$ 3,015.11			
G-119	15	106	0.00142	11422.50	1570482.96	0.062	441069.78	1570483	0.362	$ 5,300.00	9.3%	54.0%	28.7%	$ 490.45	$ 2,863.58	$ 1,521.04			
G-117	15	97	0.00144	9862.27	1586056.61	0.059	439509.54	1586056.6	0.361	$ 4,850.00	8.8%	53.9%	28.4%	$ 427.09	$ 2,613.21	$ 1,376.47			
G-122	15	121	0.0014	8307.16	1564848.54	0.055	437954.42	1564848.5	0.361	$ 6,050.00	8.2%	53.9%	28.0%	$ 496.64	$ 3,259.78	$ 1,696.60			
G-95	15	334	0.00147	8212.50	1599062.13	0.052	734616.57	1599062.1	0.36	$ 16,700.00	7.8%	53.7%	27.7%	$ 1,296.12	$ 8,973.13	$ 4,630.05			
G-15	10	125	0.00856	120247.04	1310088.77	0.24	253747.05	1310088.8	0.336	$ 3,750.00	35.8%	50.1%	42.0%	$ 1,343.28	$ 1,880.60	$ 1,576.63			
G-886	10	78	0.00705	118699.70	1189043.89	0.222	252199.69	1189043.9	0.327	$ 2,340.00	33.1%	48.8%	39.9%	$ 775.34	$ 1,142.06	$ 934.60			
G-885	10	78	0.01282	116420.16	1603306.45	0.221	249920.14	1603306.5	0.325	$ 2,340.00	33.0%	48.5%	39.7%	$ 771.85	$ 1,135.07	$ 929.59			
G-27	10	169	0.00746	114890.61	1222660.16	0.219	248390.61	1222660.2	0.324	$ 5,070.00	32.7%	48.4%	39.5%	$ 1,657.21	$ 2,451.76	$ 2,002.26			
G-71	10	414	0.00486	104181.74	986646.77	0.219	212931.74	986646.77	0.32	$ 12,420.00	32.7%	47.8%	39.2%	$ 4,059.67	$ 5,931.94	$ 4,872.75			
G-62	10	350	0.00571	100202.50	1070396.84	0.213	208952.49	1070396.8	0.308	$ 10,500.00	31.8%	46.0%	37.9%	$ 3,338.06	$ 4,826.87	$ 3,984.61			
G-43	10	260	0.00573	95493.86	1071939.57	0.204	204243.86	1071939.6	0.298	$ 7,800.00	30.4%	44.5%	36.5%	$ 2,374.93	$ 3,469.25	$ 2,850.16			
G-42	10	260	0.00573	95395.38	1071939.57	0.202	204145.38	1071939.6	0.296	$ 7,800.00	30.1%	44.2%	36.2%	$ 2,351.64	$ 3,445.97	$ 2,826.88			
G-26	10	160	0.0045	95220.83	949882.96	0.208	203970.83	949882.96	0.305	$ 4,800.00	31.0%	45.5%	37.3%	$ 1,490.15	$ 2,185.07	$ 1,791.94			
G-69	10	398	0.00754	95160.23	1229370.91	0.206	203910.23	1229370.9	0.304	$ 11,940.00	30.7%	45.4%	37.1%	$ 3,671.10	$ 5,417.55	$ 4,429.54			
G-58	10	324	0.0071	95009.47	1193040.69	0.198	203759.47	1193040.7	0.292	$ 9,720.00	29.6%	43.6%	35.6%	$ 2,872.48	$ 4,236.18	$ 3,464.70			
G-67	10	387	0.00752	43886.74	1227876.97	0.165	150386.74	1227877	0.271	$ 11,610.00	24.6%	40.4%	31.5%	$ 2,859.18	$ 4,695.99	$ 3,656.86			
G-49	10	300	0.00637	43740.15	1129847.68	0.134	150240.15	1129847.7	0.248	$ 9,000.00	20.0%	37.0%	27.4%	$ 1,800.00	$ 3,331.34	$ 2,465.02			
G-34	10	216	0.01069	43626.52	1464343.47	0.134	150126.51	1464343.5	0.233	$ 6,480.00	20.0%	34.8%	26.4%	$ 1,296.00	$ 2,253.49	$ 1,711.81			
G-11	10	118	0.00466	44.70	966727.74	0.069	104294.7	966727.74	0.236	$ 3,540.00	10.3%	35.2%	21.1%	$ 364.57	$ 1,246.93	$ 747.75			

*For location of specific pipe segments labeled above please see exhibit 1-4 provided in the 2014 Master Plan.

** For general location of the trunk line see exhibit xx in this report

*** The capacity of a sewer trunk line is defined as d/D(depth to Diamter ratio)= 0.79 which is set forth in the 2014 sewer master plan.

Basin 7

No existing infrastructure

Label	Size	Length	Slope	Present			Year 2033			Replacement Cost ($)	Present	2033	2023	Present	2033	2023	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
				Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D		%Cap	%Cap	%Cap	Cap*$	Cap*$	Cap*$			
																	#DIV/0!	#DIV/0!	#DIV/0!

*For location of specific pipe segments labeled above please see exhibit 1-4 provided in the 2014 Master Plan.

** For general location of the trunk line see exhibit xx in this report

*** The capacity of a sewer trunk line is defined as d/D(depth to Diamter ratio)= 0.79 which is set forth in the 2014 sewer master plan.

Basin 8

Basin 8 has 68.5% available capacity.

Label	Size	Length	Slope	Present			Year 2033			Replacement Cost ($)	Present	2033	2023	Present	2033	2023	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
				Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D		%Cap	%Cap	%Cap	Cap*$	Cap*$	Cap*$			
G-884	15	61	0.05246	237920.54	9562041.05	0.149	1291257.4	9562041.1	0.349	$ 3,050.00	22.2%	52.1%	35.2%	$ 678.28	$ 1,588.73	$ 1,073.67	30%	9.2%	60.7%
G-193	15	400	0.00197	237885.87	1855342.45	0.215	859635.91	1855342.5	0.464	$ 20,000.00	32.1%	69.3%	48.2%	$ 6,417.91	$ 13,850.75	$ 9,645.80			
G-191	15	400	0.00175	237658.60	1746463.67	0.245	761158.62	1746463.7	0.47	$ 20,000.00	36.6%	70.1%	51.2%	$ 7,313.43	$ 14,029.85	$ 10,230.20			
G-194	15	400	0.00175	237431.33	1746463.67	0.249	662681.34	1746463.7	0.444	$ 20,000.00	37.2%	66.3%	49.8%	$ 7,432.84	$ 13,253.73	$ 9,960.70			
G-190	15	400	0.00178	237204.06	1758894.18	0.249	662454.05	1758894.2	0.426	$ 20,000.00	37.2%	63.6%	48.6%	$ 7,432.84	$ 12,716.42	$ 9,727.36			
G-192	15	400	0.00175	236976.77	1746463.67	0.248	662226.76	1746463.7	0.426	$ 20,000.00	37.0%	63.6%	48.6%	$ 7,402.99	$ 12,716.42	$ 9,710.47			
G-178	15	307	0.00176	236749.50	1750927.74	0.249	518749.5	1750927.7	0.4	$ 15,350.00	37.2%	59.7%	47.0%	$ 5,704.70	$ 9,164.18	$ 7,207.06			
G-113	15	93	0.00172	212667.87	1713645.74	0.243	494667.89	1731645.7	0.37	$ 4,650.00	36.3%	55.2%	44.5%	$ 1,686.49	$ 2,567.91	$ 2,069.27			
G-188	15	390	0.00187	202865.03	1806215.89	0.232	484865.05	1806215.9	0.36	$ 19,500.00	34.6%	53.7%	42.9%	$ 6,752.24	$ 10,477.61	$ 8,370.07			
G-97	15	14	0.00429	202289.28	2733078.71	0.209	484289.28	2733078.7	0.334	$ 700.00	31.2%	49.9%	39.3%	$ 218.36	$ 348.96	$ 275.07			
G-155	15	200	0.001	200031.32	1320202.44	0.227	482031.34	1320202.4	0.362	$ 10,000.00	33.9%	54.0%	42.6%	$ 3,388.06	$ 5,402.99	$ 4,263.09			
G-154	15	200	0.00125	188500.11	1476031.20	0.252	470500.11	1476031.2	0.4	$ 10,000.00	37.6%	59.7%	47.2%	$ 3,761.19	$ 5,970.15	$ 4,720.49			
G-99	15	24	0.00167	188386.48	1704374.03	0.237	470386.46	1704374	0.385	$ 1,200.00	35.4%	57.5%	45.0%	$ 424.48	$ 689.55	$ 539.59			
G-193	15	400	0.00197	237885.87	1855342.45	0.215	859635.91	1855342.5	0.464	$ 20,000.00	32.1%	69.3%	48.2%	$ 6,417.91	$ 13,850.75	$ 9,645.80			
G-130	15	145	0.00179	138042.88	1767841.01	0.191	420042.89	1767841	0.333	$ 7,250.00	28.5%	49.7%	37.7%	$ 2,066.79	$ 3,603.36	$ 2,734.08			
G-108	15	83	0.00181	136460.49	1774790.58	0.188	418460.5	1774790.6	0.331	$ 4,150.00	28.1%	49.4%	37.3%	$ 1,164.48	$ 2,050.22	$ 1,549.13			
G-162	15	224	0.00174	119708.18	1742002.71	0.183	401708.17	1742002.7	0.329	$ 11,200.00	27.3%	49.1%	36.8%	$ 3,059.10	$ 5,499.70	$ 4,118.99			
G-115	15	95	0.01989	111564.69	5888567.15	0.153	393564.69	5888567.2	0.285	$ 4,750.00	22.8%	42.5%	31.4%	$ 1,084.70	$ 2,020.52	$ 1,491.10			
G-141	15	177	0.00266	105885.72	2151309.17	0.14	387885.72	2151309.2	0.266	$ 8,850.00	20.9%	39.7%	29.1%	$ 1,849.25	$ 3,513.58	$ 2,572.03			
G-166	15	255	0.00392	99226.21	2614390.41	0.142	353476.23	2614390.4	0.268	$ 12,750.00	21.2%	40.0%	29.4%	$ 2,702.24	$ 5,100.00	$ 3,743.53			
G-152	15	193	0.00254	96021.03	2103584.29	0.139	350271.04	2103584.3	0.262	$ 9,650.00	20.7%	39.1%	28.7%	$ 2,002.01	$ 3,773.58	$ 2,771.36			
G-189	15	396	0.00263	304710.98	2139486.79	0.255	317496.77	2139486.8	0.26	$ 19,800.00	38.1%	38.8%	38.4%	$ 7,535.82	$ 7,683.58	$ 7,599.99			
G-180	15	319	0.00213	95863.64	1927523.35	0.142	350113.63	1927523.4	0.269	$ 15,950.00	21.2%	40.1%	29.4%	$ 3,380.45	$ 6,403.81	$ 4,693.42			
G-101	15	35	0.00714	85731.78	3528389.45	0.132	339981.8	3528389.5	0.257	$ 1,750.00	19.7%	38.4%	27.8%	$ 344.78	$ 671.27	$ 486.56			
G-133	15	152	0.00217	70523.41	1945251.27	0.121	266273.4	1945251.3	0.238	$ 7,600.00	18.1%	35.5%	25.6%	$ 1,372.54	$ 2,699.70	$ 1,948.89			
G-139	15	165	0.00273	65107.65	2180242.58	0.124	260857.65	2180242.6	0.242	$ 8,250.00	18.5%	36.1%	26.2%	$ 1,526.87	$ 2,979.85	$ 2,157.86			
G-107	15	80	0.004	63513.90	2640404.89	0.113	259263.9	2640404.9	0.223	$ 4,000.00	16.9%	33.3%	24.0%	$ 674.63	$ 1,331.34	$ 959.82			
G-112	15	91	0.00374	61968.45	2551874.40	0.107	257718.45	2551874.4	0.213	$ 4,550.00	16.0%	31.8%	22.8%	$ 726.64	$ 1,446.49	$ 1,039.25			
G-126	15	128	0.00305	58916.74	2304452.98	0.109	254666.74	2304453	0.22	$ 6,400.00	16.3%	32.8%	23.5%	$ 1,041.19	$ 2,101.49	$ 1,501.65			
G-106	15	69	0.00449	57344.02	2798316.50	0.105	253094.02	2798316.5	0.214	$ 3,450.00	15.7%	31.9%	22.7%	$ 540.67	$ 1,101.94	$ 784.42			
G-105	15	69	0.00435	55054.81	2752812.39	0.099	250804.82	2752812.4	0.204	$ 3,450.00	14.8%	30.4%	21.6%	$ 509.78	$ 1,050.45	$ 744.58			
G-129	15	140	0.00293	54987.77	2259271.60	0.1	250737.77	2259271.6	0.209	$ 7,000.00	14.9%	31.2%	22.0%	$ 1,044.78	$ 2,183.58	$ 1,539.33			
G-103	15	49	0.00551	55015.60	3099019.97	0.095	250765.6	3099020	0.199	$ 2,450.00	14.2%	29.7%	20.9%	$ 347.39	$ 727.69	$ 512.54			
G-156	15	202	0.00248	12752.54	2077063.86	0.082	71252.54	2077063.9	0.176	$ 10,100.00	12.2%	26.3%	18.3%	$ 1,236.12	$ 2,653.13	$ 1,851.49			
G-158	15	207	0.00246	10387.77	2072241.88	0.054	68887.76	2072241.9	0.126	$ 10,350.00	8.1%	18.8%	12.7%	$ 834.18	$ 1,946.42	$ 1,317.20			
G-149	15	190	0.00205	739449.71	1819455.10	0.435	725705.84	1819455	0.43	$ 9,500.00	64.9%	64.2%	64.6%	$ 6,167.91	$ 6,097.01	$ 6,137.12			
G-141	15	177	0.00266	105885.72	2151309.17	0.14	387885.72	2151309.2	0.266	$ 8,850.00	20.9%	39.7%	29.1%	$ 1,849.25	$ 3,513.58	$ 2,572.03			
G-127	15	128	0.00211	733236.65	1917420.78	0.431	719492.78	1917420.8	0.427	$ 6,400.00	64.3%	63.7%	64.1%	$ 4,117.01	$ 4,078.81	$ 4,100.42			

*For location of specific pipe segments labeled above please see exhibit 1-4 provided in the 2014 Master Plan.

** For general location of the trunk line see exhibit xx in this report

*** The capacity of a sewer trunk line is defined as d/D(depth to Diamter ratio)= 0.79 which is set forth in the 2014 sewer master plan.

Existing Interceptor

The existing interceptor has 30.3% available capacity.

Label	Size	Length	Slope	Present			Year 2033			Replacement Cost ($)	Present	2033	2023	Present	2033	2023	Weighted Average Capacity Used Existing	Weighted Average Capacity Used for 10year growth (2023)	Weighted Average Capacity Used beyond 10year growth
				Flow (gpd)	Capacity (Design) (gpd)	d/D	Flow (gpd)	Capacity (Design) (gpd)	d/D		%Cap	%Cap	%Cap	Cap*$	Cap*$	Cap*$			
G-213	30	161	0.00111	3068796.43	8834012.44	0.337	6826306.5	8863607.2	0.51	$ 13,685.00	50.3%	76.1%	61.5%	$ 6,883.35	$ 10,416.94	$ 8,417.90	**64%**	**-19.6%**	**55.7%**
G-211	30	44	0.00114	3068613.37	8936055.37	0.389	6826123.5	8936055.4	0.59	$ 3,740.00	58.1%	88.1%	71.1%	$ 2,171.43	$ 3,293.43	$ 2,658.69			
G-212	30	93	0.00108	3068563.44	8692520.29	0.395	6826073.5	8692520.3	0.605	$ 7,905.00	59.0%	90.3%	72.6%	$ 4,660.41	$ 7,138.10	$ 5,736.41			
G-205	24	10	0.106	3068457.73	47600708.69	0.299				$ 650.00	44.6%	0.0%	25.2%	$ 290.07	$ -	$ 164.10			
G-206	24	50	0.0634	3068448.79	36813330.93	0.29				$ 3,250.00	43.3%	0.0%	24.5%	$ 1,406.72	$ -	$ 795.82			
G-208	24	398	0.00126	3068403.18	5182078.08	0.466				$ 25,870.00	69.6%	0.0%	39.3%	$ 17,993.16	$ -	$ 10,179.19			
G-890	24	314	0.00124	3068041.37	5152618.23	0.551				$ 20,410.00	82.2%	0.0%	46.5%	$ 16,784.94	$ -	$ 9,495.67			
G-889	24	86	0.00128	2291878.77	5228867.09	0.541				$ 5,590.00	80.7%	0.0%	45.7%	$ 4,513.72	$ -	$ 2,553.52			
G-210	24	401	0.0015	2291800.49	5655407.78	0.488				$ 26,065.00	72.8%	0.0%	41.2%	$ 18,984.66	$ -	$ 10,740.10			
G-209	24	401	0.0015	2291436.06	5655407.78	0.445				$ 26,065.00	66.4%	0.0%	37.6%	$ 17,311.83	$ -	$ 9,793.74			
G-207	24	398	0.00126	2291071.47	5182078.08	0.454				$ 25,870.00	67.8%	0.0%	38.3%	$ 17,529.82	$ -	$ 9,917.07			

*For location of specific pipe segments labeled above please see exhibit 1-4 provided in the 2014 Master Plan.

** For general location of the trunk line see exhibit xx in this report

*** The capacity of a sewer trunk line is defined as d/D(depth to Diamter ratio)= 0.79 which is set forth in the 2014 sewer master plan.

Stansbury Park

Improvement District

Sanitary Sewer

Impact Fee Analysis

ZIONS PUBLIC FINANCE, INC.

March 1, 2018

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EXECUTIVE SUMMARY

Stansbury Park Improvement District, Utah (the District) recently commissioned Zions Public Finance, Inc. (Zions) to calculate the District's sewer impact fees in accordance with Utah State Law. An impact fee is a payment of money imposed upon new development activity as a condition of development approval to mitigate the impact of the new development on public infrastructure. In conjunction with this project, Ward Engineering Group (Ward) prepared the *Sewer Impact Fee Facilities Plan* (IFFP).

The recommended impact fee structure presented in this analysis has been prepared to satisfy the Impact Fees Act, Utah Code Ann. § 11-36-101 et. seq., and represents the maximum impact fees that the District may assess. As impact fees may only be used to perpetuate the current level of service, the District will be required to use other revenue sources to fund any projects identified in the IFFP that constitute repair and replacement, cure any existing deficiencies, or increase the level of service for existing users.

Stansbury Park Improvement District Sewer System Overview

The Service Area currently serves 3,942 ERUs. The estimated 2023 demand is 4,604 ERUs which accounts for an increase of 1,325 ERUs over the next ten years. At buildout, the District is expected to grow to a demand of 6,261 ERUs.

Sewer Service Area

The District boundary is approximately 3,752 acres, with the Oquirrh Mountains to the east, the Great Salt Lake to the north, Erda Township to the south, and Grantsville City to the west. The sewer impact fee will be assessed to one District-wide service area. A map of the service area is included in Appendix A.

Level of Service – Equivalent Residential Unit

Level of service (LOS) defines the sewer demands that a typical residential user, defined as an Equivalent Residential Unit, will require and should pay for with the impact fee. LOS is based upon historic observed demands per ERU. Impact fee law prohibits the use of impact fees to increase the LOS above the current demands.

The sewer demand projections are expressed in terms of an Equivalent Residential Unit (ERU) and the impact fee will be assessed accordingly. According the IFFP prepared by Ward, the primary demand per ERU is 300 gpd/ERU which reflects the average day demand for a typical residential user. A single family residential home is equated to one ERU but non-residential properties can be converted to equivalent ERUs according a schedule of sewer multipliers prepared by Ward.

General Impact Fee Costs

On average, approximately 14.3% of the existing $17.5M impact fee eligible infrastructure cost ($2.5M) has capacity to serve ten-year growth and of the future project costs totaling $3.4M (FV) roughly 15.6% ($532,101) has been allocated to ten-year growth. The impact fee calculation is shown in Figure ES.1.

FIGURE ES.1: SEWER IMPACT FEE PER ERU

Component	Total Cost to Component	% That will Serve Ten Year Demand	Dollar Amount that will Serve Ten Year Demand	Ten Year Demand (ERU)	Cost per ERU
Collection Impact Fee					
Future 10 Year Capital Projects	$ 3,346,549	15.90%	$ 532,101	1,325	$ 402
Future Collection Related Debt to be Issued - INTEREST ONLY	-	0.00%	-	1,325	-
Existing Collection Projects	10,575,592	5.80%	613,384	1,325	463
Existing Collection Related Debt - OUTSTANDING INTEREST	-	0.00%	-	1,325	-
Collection Subtotal	**$ 13,922,141**		**$ 1,145,486**		**$ 864.52**
Treatment Impact Fee					
Future 10 Year Capital Projects	$ 58,739	0.00%	$ -	1,325	$ -
Future Collection Related Debt to be Issued - INTEREST ONLY	-	0.00%	-	1,325	-
Existing Treatment Projects	7,007,216	27.30%	1,912,970	1,325	1,444
Existing Treatment Related Debt - OUTSTANDING INTEREST	-	0.00%	-	1,325	-
Treatment Subtotal	**$ 7,065,955**		**$ 1,912,970**		**$ 1,443.75**
Professional Services/ Credits					
Unspent Impact Fee Funds (Excluding Uncommited Funds)	-	0.00%	$ -	1,325	$ -
Credit for Projects Benefitting Existing Users					
Professional Services Expense	60,000	100%	60,000	1,325	45
Professional Services/Credits Subtotal	**60,000**		**60,000**		**45.28**
Total Impact Fee Per ERU	**$ 13,982,141**		**$ 1,205,486**		**$ 2,353.55**

Proposed Sewer Impact Fees

Figure ES.2 shows the maximum legal impact fees that the District can assess within the service area. The recommended impact fee structure presented in this analysis has been prepared to satisfy the Impact Fees Act, Utah Code Ann. § 11-36-101 et. seq., and represents the maximum impact fees that the District may assess. Impact fees are only intended to perpetuate the District's current LOS, the District will be required to use other revenue sources to fund any projects identified in the IFFP that constitute repair and replacement, cure any existing deficiencies, increase the level of service, or maintain the level of service for existing users.

Non-Standard Demand Adjustments

The District reserves the right under the Impact Fees Act (Utah Code 11-36a-402(1)(c,d)) to assess an adjusted fee to respond to unusual circumstances and to ensure that the impact fees are assessed fairly. The impact fee ordinance must include a provision that permits adjustment of the fee for a development based upon studies and data submitted by the developer that indicate a more realistic and accurate impact upon the District's infrastructure. The impact fee formula shown below in Figure ES.3 for a non-standard user is based upon the user's anticipated annual sewer demand which is estimated based on indoor water usage.

FIGURE ES.3: CALCULATION OF NON-STANDARD IMPACT FEE

Non-Standard Users Sewer Impact Fee Formula
Step 1: Estimate Average Annual Demands in Gallons
Step 2: Multiply Average Annual Demand Fee by $0.0215 per Gallon

CHAPTER 1: OVERVIEW OF THE SEWER IMPACT FEES

Purpose of an Impact Fee

An impact fee is intended to recover the District's costs of building excess capacity from new residential or non-residential development rather than passing these growth-related costs on to existing users through rates. Impact fees also provide a mechanism for developers to construct system improvements at their own cost but receive impact fees paid by other developers who benefit from those improvements back through a reimbursement agreement.

The Utah Impact Fees Act allows only certain costs to be included in an impact fee so that only the fair cost of expansionary projects or existing unused capacity paid by the District is charged to developers. Eligible costs include future projects, historic costs of existing assets that still have capacity available to serve growth, future or outstanding debt related to these eligible projects, and certain professional expenses related to planning for growth. Project improvements that serve a specific development or subdivision cannot be included. System improvements that cure a deficiency or enhance the LOS cannot be included without an appropriate credit.

This impact fee analysis provides documentation of a fair comparison, or rational nexus, between the impact fee charged to new development and the demands that new growth will have on the system. Impact fees are assessed according to meter size as an estimate of the impact on the sewer system.

Costs to be Included in the Impact Fee

The impact fees proposed in this analysis are calculated based upon:

- New capital infrastructure for collection and treatment that will serve new development;
- Professional and planning expenses related to the construction of new infrastructure that will serve new development;
- Interest costs related to any outstanding or future bonds that have been issued for growth-related impact fee projects that will serve new development; and
- Historic costs of existing improvements that will serve new development.

The costs that cannot be included in the impact fee are as follows:

- Projects that cure existing deficiencies for existing users;
- Projects that increase the level of service above that which is currently provided;
- Operations and maintenance costs;
- Costs of facilities funded by grants or other funds that the District does not have to repay; and
- Costs of reconstruction of facilities that do not have capacity to serve new growth.

Assessment of an Impact Fee

Until new development utilizes the full capacity of existing facilities the District can assess an impact fee to recover the cost of latent capacity in the sewer system that is available to serve future development. The general impact fee methodology divides the available capacity of existing and future capital projects between the number of existing and future users. Capacity is measured in terms of an ERU which is equivalent to 300 gallons per average day of sewer usage.

The District will assess the impact fee as part of the building permit process. New connections will pay the impact fee before a final building permit is issued. The impact fee will be assessed according to the table found in Figure 4.1.

CHAPTER 2: IMPACT FROM GROWTH UPON THE DISTRICT'S FACILITIES AND LEVEL OF SERVICE

Sewer Service Area

The District boundary is approximately 3,752 acres, with the Oquirrh Mountains to the east, the Great Salt Lake to the north, Erda Township to the south, and Grantsville City to the west. The District will assess the impact fee to one District-wide service area. A map of the service area is included in Appendix A.

Proposed Demands

In 2013 the District's sewer system served 3,279 ERUs which will grow to an estimated 4,604 ERUs in 2023. Throughout this impact fee analysis, a 10-year growth window will be the basis for the impact fee calculation. Figure 2.1 shows demand growth.

FIGURE 2.1: PROJECTED GROWTH IN DEMAND

Year	Population	Residential	Non-Residential	Total ERUs
2013	11,180	2,795	484	3,279
2014	11,626	2,907	505	3,412
2015	12,072	3,019	525	3,544
2016	12,518	3,131	546	3,677
2017	12,964	3,243	566	3,809
2018	13,410	3,355	587	3,942
2019	13,856	3,467	607	4,074
2020	14,302	3,579	628	4,207
2021	14,748	3,691	648	4,339
2022	15,194	3,803	669	4,472
2023	15,640	3,915	689	4,604
2033	21,450	5,378	883	6,261

Sewer Demand (ERU)	
2013 Demand (ERU)	3,279
2023 Demand (ERU)	4,604
Differential	1,325
% Undeveloped	29%
ERUs Added in Ten Years	**1,325**

Source: Stansbury Park Sewer Impact Fee Facility Plan
Prepared by Ward Engineering Group

Existing and Proposed Level of Service Analysis

Level of service (LOS) defines how much of the sewer system capacity a typical residential user, defined as an Equivalent Residential Unit (ERU), will utilize and determine a fair impact fee LOS. A single family residential home is equated to one ERU but non-residential properties can be converted to a number of equivalent ERUs using sewer demand worksheets prepared by Ward and included in the impact fee resolution.

Impact fee law prohibits the use of impact fees to increase the LOS above the current demands. At times, a sewer system may need to increase a level of service to cure an existing deficiency but projects fixing deficiencies must be paid for by non-impact fee revenues and a credit must be provided to the impact fee payer. This impact fee analysis does include a credit to offset the portion of the future treatment plant benefitting existing users which will be funded through user rates.

Treatment Capacity Level of Service

The District has prepared several water reclamation studies that have determined a new treatment plant site will be required to satisfy nutrient removal requirements recently introduced by the Utah Department of Environmental Quality (DEQ). As a result, the existing facility has no permanent excess capacity for future growth and all existing capacity will be relocated to a new site once the new treatment plant is completed. Treatment capacity level of service is 300 gallons per day/ERU based on an average day, maximum month flow.

Collection Level of Service

The collection level of service is based on pipeline capacity maintaining 79% utilization at peak flows equivalent to 750 gpd per ERU. The system was evaluated in the engineer's hydraulic modeling at this level. As noted in the IFFP, maintaining 79% utilization at peak flow allows for a small amount of extra capacity to be reserved in the pipeline to account for potential inflow into the system and other unknowns. Requiring sizing that would have a lower utilization would possibly result in an increase in LOS.

A summary of sewer level of service per ERU is found below in Figure 2.2.

FIGURE 2.2: LEVEL OF SERVICE SUMMARY PER ERU

	Value for Total Existing Conditions
Flows per ERU	
Average Daily Flow (gpd)	300
Peak Flow (gpd)	750

Project Costs and Financing

The IFFP calculated the proportion of each existing and future improvement to each component (collection or treatment) and then allocated the costs between, existing users, 10-year growth in each service area, beyond 10-year growth, and non-impact fee qualifying.

Excess Capacity and Deficiency

The District technically has the right to increase this established level of service in the future by constructing facilities that will provide greater capacity per ERU, but such level of service increases cannot be funded through impact fees. The District would have to find other funding sources, such as user rates, for projects that increase level of service. If the case arises where the proposed level of service is higher than the existing, then a deficiency exists and will be cured through future projects, but not through impact fees. The IFFP does identify several future projects which will serve existing residents notably the future wastewater treatment plant project. A credit has been included in the impact fee calculation to offset the cost of constructing infrastructure relating to existing users.

CHAPTER 3: HISTORIC AND FUTURE SEWER CAPITAL PROJECTS COSTS

Historic Capital Project Costs by Sewer Components

The District is entitled to recover a portion of existing system improvement costs that were 1) funded by the District or a developer through a reimbursement agreement, 2) are currently in service, 3) have a useful life of more than 10 years, and 4) have remaining capacity that can be used to serve new development.

Appendix E includes a list of sewer capital assets as recorded in the District's accounting depreciation statements and reviewed by District staff to determine which projects are system improvements and are impact fee qualifying. The list of assets in Appendix D includes the types of projects funded, method of funding, and historic costs. The costs used are strictly historic costs taken from the District's depreciation statements and construction records as the Impact Fees Act does not allow for any other cost or value than historic construction cost. Appendix F then converts the full list of assets shown in Appendix E into the proportions of the existing assets that are attributable to growth.

Figure 3.1 shows the division of historic capital project costs between qualifying and non-qualifying assets. The total historic cost of the sewer system is $17.5M. Non-qualifying assets include items such as repair and replacement (R&R), storm improvements included in the sewer fund, items costing less than $5,000, fund reimbursements, and developer contributions also known as project improvements.

FIGURE 3.1: EXISTING SEWER ASSETS SUMMARY

	Treatment	Collection	Lift Stations	Grand Total
Sewer	$ 7,007,216	$ 10,567,374	$ 8,218	$ 17,582,808
Equipment	28,254			28,254
Project		6,108,534		6,108,534
System	6,899,035	4,458,840	8,218	11,366,093
Engineering	79,927			79,927
Grand Total	**$ 7,007,216**	**$ 10,567,374**	**$ 8,218**	**$ 17,582,808**

Figure 3.1 represents the full cost of the existing sewer assets which have been used to determine the existing qualifying asset costs shown in Figure 4.1.

Future 10 Year Sewer Capital Projects

In the next ten years, the District anticipates building various projects including a new reclamation facility and new or expanded collection lines. These projects and the portion benefitting new growth can be found in Figure 3.2 below.

All construction estimates have been prepared in 2017 dollars so each project to be constructed after 2017 includes a 3.0% inflation rate to adequately plan for the total cost to the District at time of construction. As shown in Figure 3.3, project costs were sorted by whether they will meet 10-year impact fee qualifying demand, are beyond ten-year demand, or whether any portion is non-qualifying (which included portions of the project that will be utilized by existing users).

FIGURE 3.2: FUTURE SEWER CAPITAL PROJECT COSTS

Project Name	Year to be Constructed	2017 Cost	Construction Cost with Inflation	10 Year Impact Fee Qualifying Cost	Impact Fee Qualifying Beyond 10 Years	Non Impact Fee Qualifying
Collection						
24" Outfall Sewer Line	2017	$ 202,157	$ 202,157	$ 32,143	$ 155,459	$ 14,555
Village Blvd 15" Sewer Line	2017	33,364	33,364	5,305	25,657	2,402
10" Sewer Line through Reserve Subdivision	2017	7,252	7,252	1,153	5,577	522
10" Sewer Line in Bates Canyon Rd	2017	54,336	54,336	8,639	41,784	3,912
Basin 7 Outfall Sewer Line	2017	833,910	833,910	132,592	641,277	60,042
18" Sewer Line along Village Blvd to SR-138	2017	62,212	62,212	9,892	47,841	4,479
Village Blvd 18" Sewer Line (Crossing SR-138)	2017	67,024	67,024	10,657	51,541	4,826
Regional Pump Station 18" Bypass Line (Crossing SR-138)	2017	354,687	354,687	56,395	272,754	25,537
Basin 7 Sewer Trunk Line	2017	174,000	174,000	27,666	133,806	12,528
Parcel 9 Pump Station Upgrade	2023	194,481	232,220	36,923	178,578	16,720
12" Sewer Line along Village Blvd (Lanyard ln to Ardennes Way)	2023	415,184	495,751	78,824	381,233	35,694
10" Sewer Line along Village Blvd (Ardennes Way to Sand Hill Way)	2023	153,081	182,787	29,063	140,563	13,161
Village Blvd (Basin 6, 12" Sewer Trunk Line)	2023	525,525	627,504	99,773	482,551	45,180
Park View Dr (Basin 6, 15" Sewer Trunk Line)	2023	16,200	19,344	3,076	14,875	1,393
Collection Subtotal		**$ 3,093,414**	**$ 3,346,549**	**$ 532,101**	**$ 2,573,496**	**$ 240,952**
Treatment						
Headwork Sewer Lagoon Design	2017	$ 58,739	$ 58,739	$ -	$ 58,739	$ -
Treatment Subtotal		**$ 58,739**	**$ 58,739**	**$ -**	**$ 58,739**	**$ -**
Ten Year Total		**$ 3,152,153**	**$ 3,405,288**	**$ 532,101**	**$ 2,632,235**	**$ 240,952**

Source: Ward Engineering Group Sewer Impact Fee Facility Plan
**Based on 20 years average cost of inflation using ENR*

CHAPTER 4: PROPORTIONATE SHARE ANALYSIS

The Impact Fees Act requires the impact fee analysis to estimate the proportionate share of the future and historic cost of existing system improvements that benefit new growth and can be recouped through impact fees. The proportionate share of all future and existing projects plus any associated financings is shown in Figures 4.1. This chapter will show that the proposed impact fee for system improvements is reasonably related to the impact on the sewer system from future development activity.

Manner of Funding

The proportionate share analysis considers the manner of funding utilized for existing public facilities. Historically the District has funded existing infrastructure with revenue sources including the following:

- Sewer Impact Fees
- Sewer User Rates and Miscellaneous Fees

In the future, the District will rely solely upon user rate revenues to fund the operations and maintenance of the system and will use rate revenues to fund the portion of the future treatment plant project which benefits existing users. However, if rate revenues are used to pay what should be funded through impact fees (due to a shortfall in impact fee revenues) then the utility fund will be repaid with impact fees.

Grant funding is not secured at this time; however, if any grants are received, future impact fees will be discounted according to the size of grant and what impact fee qualifying projects it will be intended to fund.

Developer and Reimbursement Credits

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.

Time-Price Differential

Utah Code 11-36a-301(2)(h) allows for the inclusion of a time-price differential in order to create fairness for amounts paid at different times. To address the time-price differential, this analysis includes an inflationary component to account for construction inflation for future projects. Projects constructed after the year 2017 will be calculated at a future value with a 3% inflation rate. All users who pay an impact fee today or within the next ten years will benefit from projects to be constructed and included in the fee.

Maximum Legal Sewer Impact Fee Per ERU

The maximum impact fee is based on the combination of individual costs for the components of collection, treatment, and allowable professional fees. Each fee for individual components is based upon the historic and future costs divided by the total and available capacities. The result is a very precise impact fee that

complies with the Impact Fees Act. As shown in Figure 4.1, the maximum legal impact fee per ERU of sewer demand is calculated to be $2,353.55.

FIGURE 4.1: SEWER PROPORTIONATE SHARE/ COST PER ERU

Component	Total Cost to Component	% That will Serve Ten Year Demand	Dollar Amount that will Serve Ten Year Demand	Ten Year Demand (ERU)	Cost per ERU
Collection Impact Fee					
Future 10 Year Capital Projects	$ 3,346,549	15.90%	$ 532,101	1,325	$ 402
Future Collection Related Debt to be Issued - INTEREST ONLY	-	0.00%	-	1,325	-
Existing Collection Projects	10,575,592	5.80%	613,384	1,325	463
Existing Collection Related Debt - OUTSTANDING INTEREST	-	0.00%	-	1,325	-
Collection Subtotal	**$ 13,922,141**		**$ 1,145,486**		**$ 864.52**
Treatment Impact Fee					
Future 10 Year Capital Projects	$ 58,739	0.00%	$ -	1,325	$ -
Future Collection Related Debt to be Issued - INTEREST ONLY	-	0.00%	-	1,325	-
Existing Treatment Projects	7,007,216	27.30%	1,912,970	1,325	1,444
Existing Treatment Related Debt - OUTSTANDING INTEREST	-	0.00%	-	1,325	-
Treatment Subtotal	**$ 7,065,955**		**$ 1,912,970**		**$ 1,443.75**
Professional Services/ Credits					
Unspent Impact Fee Funds (Excluding Uncommited Funds)	-	0.00%	$ -	1,325	$ -
Credit for Projects Benefitting Existing Users					
Professional Services Expense	60,000	100%	60,000	1,325	45
Professional Services/Credits Subtotal	**60,000**		**60,000**		**45.28**
Total Impact Fee Per ERU	**$ 13,982,141**		**$ 1,205,486**		**$ 2,353.55**

Non-Standard Demand Adjustments

The District reserves the right under the Impact Fees Act (Utah Code 11-36a-402(1)(c,d)) to assess an adjusted fee to respond to unusual circumstances and to ensure that the impact fees are assessed fairly. The impact fee ordinance must include a provision that permits adjustment of the fee for a development based upon studies and data submitted by the developer that indicate a more realistic and accurate impact upon the District's infrastructure.

The impact fee formula shown below in Figure 4.2 for non-standard users is based upon the anticipated annual sewer demand of that user. Sewer demand is estimated using indoor water use.

FIGURE 4.2: CALCULATION OF NON-STANDARD IMPACT FEE

Non-Standard Users Sewer Impact Fee Formula
Step 1: Estimate Average Annual Demands in Gallons
Step 2: Multiply Average Annual Demand Fee by $0.0215 per Gallon

APPENDICES: CERTIFICATION, SERVICE AREA MAP, IMPACT FEE CALCULATIONS

In accordance with Utah Code Annotated, 11-36a-306(2), Zions Public Finance, Inc., makes the following certification:

Zions Public Finance, Inc. certifies that the attached impact fee analysis:

1. includes only the cost 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 of qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents;
    c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement;
3. offset costs with grants or other alternate sources of payment; and
4. complies in each and every relevant respect with the Impact Fees Act.

Zions Public Finance makes this certification with the following caveats:

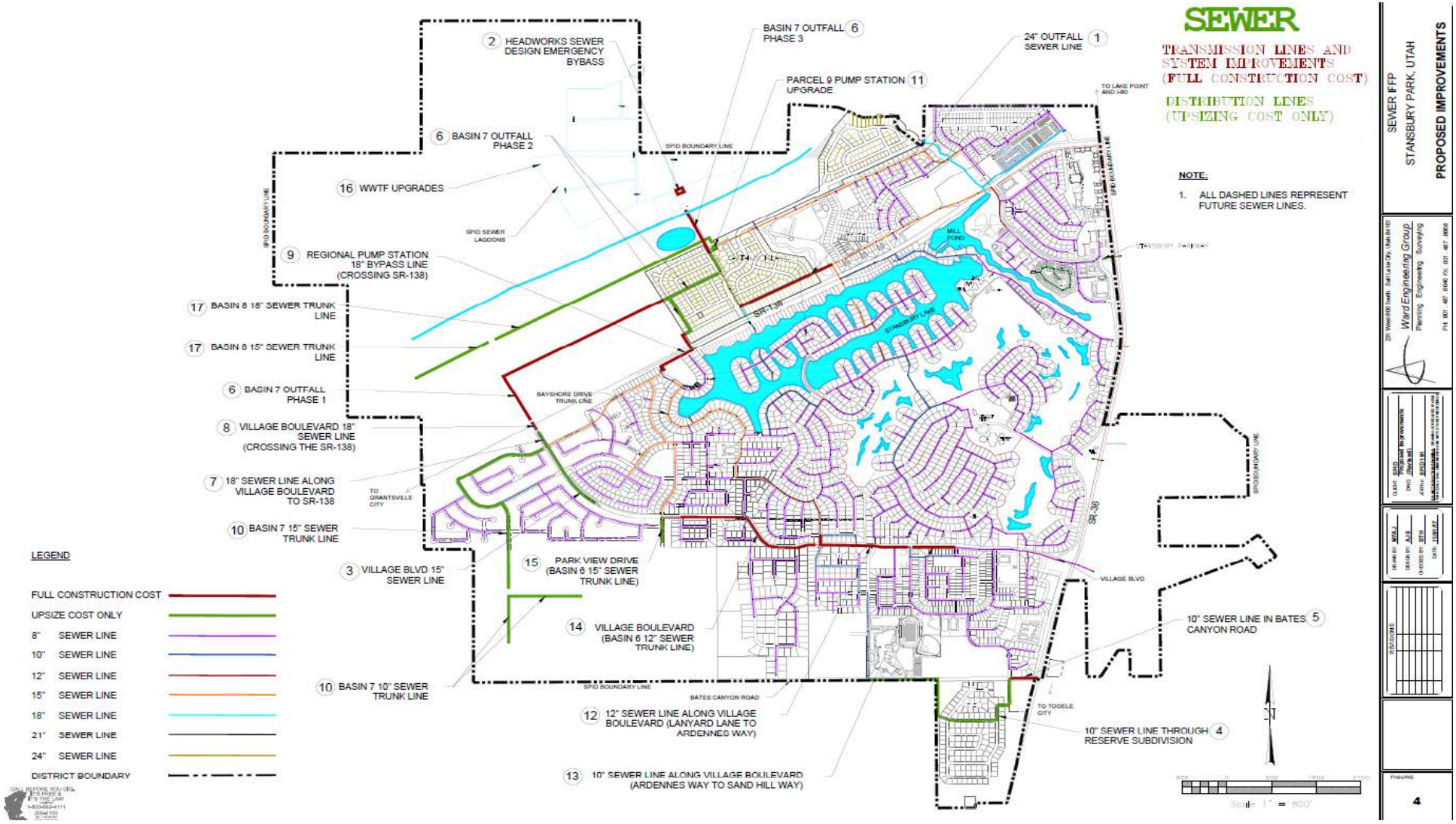
1. All of the recommendations for implementations of the Impact Fee Facilities Plan (IFFP) made in the IFFP or in the impact fee analysis are followed in their entirety by District staff and Board in accordance to the specific policies established for the Service Areas.
2. If all or a portion of the IFFP or impact fee analysis are modified or amended, this certification is no longer valid.
3. All information provided to Zions Public Finance, Inc., its contractors or suppliers is assumed to be correct, complete and accurate. This includes information provided by Stansbury Park Improvement District and outside sources.

Dated: 3/1/2018

ZIONS PUBLIC FINANCE, INC.

APPENDIX A: MAP OF SEWER IMPACT FEE SERVICE AREA

SPID SEWER IMPACT FEE ANALYSIS



APPENDIX B: ERU DEMAND PROJECTIONS AND LEVEL OF SERVICE (LOS)

SPID SEWER IMPACT FEE ANALYSIS

TABLE B.1: CURRENT AND FUTURE SEWER

Year	Population	Residential	Non-Residential	Total ERUs
2013	11,180	2,795	484	3,279
2014	11,626	2,907	505	3,412
2015	12,072	3,019	525	3,544
2016	12,518	3,131	546	3,677
2017	12,964	3,243	566	3,809
2018	13,410	3,355	587	3,942
2019	13,856	3,467	607	4,074
2020	14,302	3,579	628	4,207
2021	14,748	3,691	648	4,339
2022	15,194	3,803	669	4,472
2023	15,640	3,915	689	4,604
2033	21,450	5,378	883	6,261

TABLE B.2: SEWER DEMAND (ERU)

Sewer Demand (ERU)	
2013 Demand (ERU)	3,279
2023 Demand (ERU)	4,604
Differential	1,325
% Undeveloped	29%
ERUs Added in Ten Years	**1,325**

Source: Stansbury Park Sewer Impact Fee Facility Plan Prepared by Ward Engineering Group

APPENDIX C: SEWER 10 YEAR CAPITAL PROJECTS

SPID SEWER IMPACT FEE ANALYSIS

TABLE C.1: SEWER CAPITAL PROJECTS

Inflation Rate* **3.00%**

Project Name	Project ID	% to Existing / Project Level	% Impact Fee Qualifying - 10 Year	% Impact Fee Qualifying - Beyond 10 Year	Year to be Constructed	2017 Cost	Construction Cost with Inflation	10 Year Impact Fee Qualifying Cost	Impact Fee Qualifying Beyond 10 Years	Non Impact Fee Qualifying
Collection										
24" Outfall Sewer Line	1	7.20%	15.90%	76.90%	2017	$ 202,157	$ 202,157	$ 32,143	$ 155,459	$ 14,555
Village Blvd 15" Sewer Line	3	7.20%	15.90%	76.90%	2017	33,364	33,364	5,305	25,657	2,402
10" Sewer Line through Reserve Subdivision	4	7.20%	15.90%	76.90%	2017	7,252	7,252	1,153	5,577	522
10" Sewer Line in Bates Canyon Rd	5	7.20%	15.90%	76.90%	2017	54,336	54,336	8,639	41,784	3,912
Basin 7 Outfall Sewer Line	6	7.20%	15.90%	76.90%	2017	833,910	833,910	132,592	641,277	60,042
18" Sewer Line along Village Blvd to SR-138	7	7.20%	15.90%	76.90%	2017	62,212	62,212	9,892	47,841	4,479
Village Blvd 18" Sewer Line (Crossing SR-138)	8	7.20%	15.90%	76.90%	2017	67,024	67,024	10,657	51,541	4,826
Regional Pump Station 18" Bypass Line (Crossing SR-138)	9	7.20%	15.90%	76.90%	2017	354,687	354,687	56,395	272,754	25,537
Basin 7 Sewer Trunk Line	10	7.20%	15.90%	76.90%	2017	174,000	174,000	27,666	133,806	12,528
Parcel 9 Pump Station Upgrade	11	7.20%	15.90%	76.90%	2023	194,481	232,220	36,923	178,578	16,720
12" Sewer Line along Village Blvd (Lanyard ln to Ardennes Way)	12	7.20%	15.90%	76.90%	2023	415,184	495,751	78,824	381,233	35,694
10" Sewer Line along Village Blvd (Ardennes Way to Sand Hill Way)	13	7.20%	15.90%	76.90%	2023	153,081	182,787	29,063	140,563	13,161
Village Blvd (Basin 6, 12" Sewer Trunk Line)	14	7.20%	15.90%	76.90%	2023	525,525	627,504	99,773	482,551	45,180
Park View Dr (Basin 6, 15" Sewer Trunk Line)	15	7.20%	15.90%	76.90%	2023	16,200	19,344	3,076	14,875	1,393
Collection Subtotal						**$ 3,093,414**	**$ 3,346,549**	**$ 532,101**	**$ 2,573,496**	**$ 240,952**
Treatment										
Headwork Sewer Lagoon Design	2	0.00%	0.00%	100.00%	2017	$ 58,739	$ 58,739	$ -	$ 58,739	$ -
Treatment Subtotal						**$ 58,739**	**$ 58,739**	**$ -**	**$ 58,739**	**$ -**
Ten Year Total						**$ 3,152,153**	**$ 3,405,288**	**$ 532,101**	**$ 2,632,235**	**$ 240,952**

Source: Ward Engineering Group Sewer Impact Fee Facility Plan

**Based on 20 years average cost of inflation using ENR*

	A	B	C	D	E	F	G	H	I	J	K	L
		1.000	**1.030**	**1.061**	**1.093**	**1.126**	**1.159**	**1.194**	**1.230**	**1.267**	**1.305**	**1.344**

Table C.2: Total Capital Projects by Year

Project	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Collection											
24" Outfall Sewer Line	$ 202,157	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Village Blvd 15" Sewer Line	33,364	-	-	-	-	-	-	-	-	-	-
10" Sewer Line through Reserve Subdivision	7,252	-	-	-	-	-	-	-	-	-	-
10" Sewer Line in Bates Canyon Rd	54,336	-	-	-	-	-	-	-	-	-	-
Basin 7 Outfall Sewer Line	833,910	-	-	-	-	-	-	-	-	-	-
18" Sewer Line along Village Blvd to SR-138	62,212	-	-	-	-	-	-	-	-	-	-
Village Blvd 18" Sewer Line (Crossing SR-138)	67,024	-	-	-	-	-	-	-	-	-	-
Regional Pump Station 18" Bypass Line (Crossing SR-138)	354,687	-	-	-	-	-	-	-	-	-	-
Basin 7 Sewer Trunk Line	174,000	-	-	-	-	-	-	-	-	-	-
Parcel 9 Pump Station Upgrade	-	-	-	-	-	-	232,220	-	-	-	-
12" Sewer Line along Village Blvd (Lanyard ln to Ardennes Way)	-	-	-	-	-	-	495,751	-	-	-	-
10" Sewer Line along Village Blvd (Ardennes Way to Sand Hill Way)	-	-	-	-	-	-	182,787	-	-	-	-
Village Blvd (Basin 6, 12" Sewer Trunk Line)	-	-	-	-	-	-	627,504	-	-	-	-
Park View Dr (Basin 6, 15" Sewer Trunk Line)	-	-	-	-	-	-	19,344	-	-	-	-
Collection Subtotal	$ 1,788,942	$ -	$ -	$ -	$ -	$ -	$ 1,557,607	$ -	$ -	$ -	$ -
Treatment											
Headwork Sewer Lagoon Design	$ 58,739	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Treatment Subtotal	$ 58,739	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Capital Projects	**$ 1,847,681**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,557,607**	**$ -**	**$ -**	**$ -**	**$ -**

Table C.3: Total Capital Projects by Year

Project	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Collection											
10 Impact Fee Qualifying	$ 284,442	$ -	$ -	$ -	$ -	$ -	$ 247,659	$ -	$ -	$ -	$ -
Beyond 10 Impact Fee Qualifying	1,375,697	-	-	-	-	-	1,197,800	-	-	-	-
Non-Qualifying	128,804	-	-	-	-	-	112,148	-	-	-	-
Subtotal	**$ 1,788,942**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,557,607**	**$ -**	**$ -**	**$ -**	**$ -**
Treatment											
10 Impact Fee Qualifying	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Beyond 10 Impact Fee Qualifying	58,739	-	-	-	-	-	-	-	-	-	-
Non-Qualifying	-	-	-	-	-	-	-	-	-	-	-
Subtotal	**$ 58,739**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Capital Projects	**$ 1,847,681**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,557,607**	**$ -**	**$ -**	**$ -**	**$ -**

A	B	C	D	E	F	G	H	I	J	K	L

APPENDIX D: SEWER LEVEL OF SERVICE (LOS) ANALYSIS

SPID SEWER IMPACT FEE ANALYSIS

	Existing Performance Standard	Existing Level of Service	Proposed Level of Service
Pipeline Capacity			
Maximum Ratio of Flow to Pipeline Capacity	0.79	0.79	0.79

	Value for Total Existing Conditions
Flows per ERU	
Average Daily Flow (gpd)	300
Peak Flow (gpd)	750

APPENDIX E: SEWER CALCULATION OF THE IMPACT FEE

SPID SEWER IMPACT FEE ANALYSIS

TABLE E.1: IMPACT FEE CALCULATION

	Component	Total Cost to Component	% That will Serve Ten Year Demand	Dollar Amount that will Serve Ten Year Demand	Ten Year Demand (ERU)	Cost per ERU
2	**Collection Impact Fee**					
3	Future 10 Year Capital Projects	$ 3,346,549	15.90%	$ 532,101	1,325	$ 402
4	Future Collection Related Debt to be Issued - INTEREST ONLY	-	0.00%	-	1,325	-
5	Existing Collection Projects	10,575,592	5.80%	613,384	1,325	463
6	Existing Collection Related Debt - OUTSTANDING INTEREST	-	0.00%	-	1,325	-
7						
8	**Collection Subtotal**	**$ 13,922,141**		**$ 1,145,486**		**$ 864.52**
9						
10	**Treatment Impact Fee**					
11	Future 10 Year Capital Projects	$ 58,739	0.00%	$ -	1,325	$ -
12	Future Collection Related Debt to be Issued - INTEREST ONLY	-	0.00%	-	1,325	-
13	Existing Treatment Projects	7,007,216	27.30%	1,912,970	1,325	1,444
14	Existing Treatment Related Debt - OUTSTANDING INTEREST	-	0.00%	-	1,325	-
15						
16	**Treatment Subtotal**	**$ 7,065,955**		**$ 1,912,970**		**$ 1,443.75**
17						
18	**Professional Services/ Credits**					
19	Unspent Impact Fee Funds (Excluding Uncommited Funds)	-	0.00%	$ -	1,325	$ -
20	Credit for Projects Benefitting Existing Users					
21	Professional Services Expense	60,000	100%	60,000	1,325	45
22	**Professional Services/Credits Subtotal**	**60,000**		**60,000**		**45.28**
23						
24	**Total Impact Fee Per ERU**	**$ 13,982,141**		**$ 1,205,486**		**$ 2,353.55**
25						

Sewer Impact Fee Worksheet - Stansbury Park 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 **2,353.55** 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

$ 2,353.55	x	_____	=	$ -
Unit Cost($/ERU) from step 2,		Number of units in development		Impact Fee

Sewer Impact Fee Worksheet - Stansbury Park 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	0.12	=	- gpd
Building Square Footage				Indoor Demand
-	÷	300	=	-
Indoor Demand				ERUs
-	x	$ 2,353.55	=	$ -
ERUs		Unit Cost ($/ERU) from step 2		Impact Fee

c. Commercial/Industrial/Institutional

-	x	1	=	- gpd
Total Average Day Water Demand from step3				Indoor Demand
-	÷	300	=	-
Indoor Demand				ERUs
-	x	$ 2,353.55	=	$ -
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: _____
Stansbury Park Improvement District Manager