

**Collections Component of the
SEWER IMPACT FEE
ANALYSIS**

**for
Service Area 4**

September 2016

Project No. 060-16-07

Prepared for:



Prepared by:



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EXECUTIVE SUMMARY – IFFP

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

WHY IS AN IFFP NEEDED?

The IFFP provides a technical basis for assessing updated impact fees for a new service area in the District. This document addresses the future infrastructure needed to serve SVSD. The District has historically identified multiple service areas for the purposes of rate and impact fee calculations. In order to maintain equity between customers in existing service areas and a new area of proposed development, the District has formed Service Area 4 shown in Figures 1 and 2, which will serve a future development where no existing sewer infrastructure currently exists. This IFFP provides an analysis of system level conveyance improvements needed to serve the new service area.

It should be noted that this IFFP is limited to collection facilities to be owned and operated by SVSD. Service Area 4 is located in an area of the District that drains toward Utah County and eventually connects to conveyance and treatment facilities owned and operated by Timpanogos Special Service District (TSSD). Thus, in addition to the impact fees calculated here, properties in Service Area 4 will also be required to pay an impact fee to SVSD on behalf of TSSD in association with their use of capacity in TSSD facilities.

The future capital project documented in this IFFP will ensure that level of service standards are maintained for all future residents who reside within the new service area. Local governments must pay strict attention to the required elements of the IFFP which are enumerated in the Impact Fees Act (IFA).

PROJECTED FUTURE GROWTH

The projected future growth and projections of sewer flows resulting from said growth within the new service area is estimated to be 422 Equivalent Residential Units (ERUs).

Demands are projected in terms of ERUs. An ERU represents the demand that a typical single family residence places on the system. The basis of an ERU for historical flow rates is summarized in Table ES-1.

**Table ES-1
SVSD Service Area Historic Flows**

Item	Value for Existing Conditions
Flows per ERU	
Ave. Daily Domestic WW Production (gpd/ERU)	223
Peak Month Average Daily Flow (gpd/ERU)	293
Peak Month Average Weekday Flow (gpd/ERU)	285
Peak Month Average Weekend Flow (gpd/ERU)	317
Thanksgiving Average Daily Flow (gpd/ERU)	300
Diurnal Flow Variation	Varies by Flow Scenario
Maximum Pipeline Flow Depth (Dry Weather Flow)	75% of Pipeline Depth

LEVEL OF SERVICE

Level of service is defined in the Impact Fees Act as “the defined performance standard or unit of demand for each capital component of a public facility within a service area”. Since this is a new service area and does not have any existing infrastructure, it does not have an existing level of service. Subsequently, the proposed level of service for the area will be the same as the proposed level of service for other existing service areas in the District.

EXISTING CAPACITY AVAILABLE TO SERVE FUTURE GROWTH

Since there is no existing sewer infrastructure within the new service area, available capacity for projected future growth will be met through the construction of new facilities.

REQUIRED SYSTEM IMPROVEMENTS

Additional improvements required to serve new growth are summarized in Table ES-2. To satisfy the requirements of state law, Table ES-2 provides a breakdown of the percentage of the project costs attributed to future users.

**Table ES-2
Sewer Project Cost Allocated to Projected Development, 10-year Planning Window**

Name	Total Cost	Percent to Existing	Percent to Growth	Cost to Existing	Cost to Growth
Service Area No. 4 Gravity Sewer Outfall	\$1,798,100	0.0%	100.0%	\$0	\$1,798,100
Total Costs	\$1,798,100			\$0	\$1,798,100

IMPACT FEE FACILITIES PLAN

INTRODUCTION

South Valley Sewer District (SVSD or District) has retained Bowen Collins & Associates (BC&A) to prepare an Impact Fee Facilities Plan (IFFP) for Service Area 4. The purpose of an IFFP is to determine the public facilities required to service development resulting from new development activity. The IFFP is also intended to outline the improvements which may be funded through impact fees.

SVSD has historically identified multiple service areas for the purposes of rate and impact fee calculations. In order to maintain equity between customers in existing service areas and a new area of proposed development, the District has formed Service Area 4, shown in Figures 1 and 2, which will serve a future development where no existing sewer infrastructure currently exists. This IFFP provides an analysis of system level conveyance improvements needed to serve the new service area.

It should be noted that this IFFP is limited to collection facilities to be owned and operated by SVSD. Service Area 4 is located in an area of the District that drains toward Utah County and eventually connects to conveyance and treatment facilities owned and operated by Timpanogos Special Service District (TSSD). Thus, in addition to the impact fees calculated here, properties in Service Area 4 will also be required to pay an impact fee to SVSD on behalf of TSSD in association with their use of capacity in TSSD facilities.

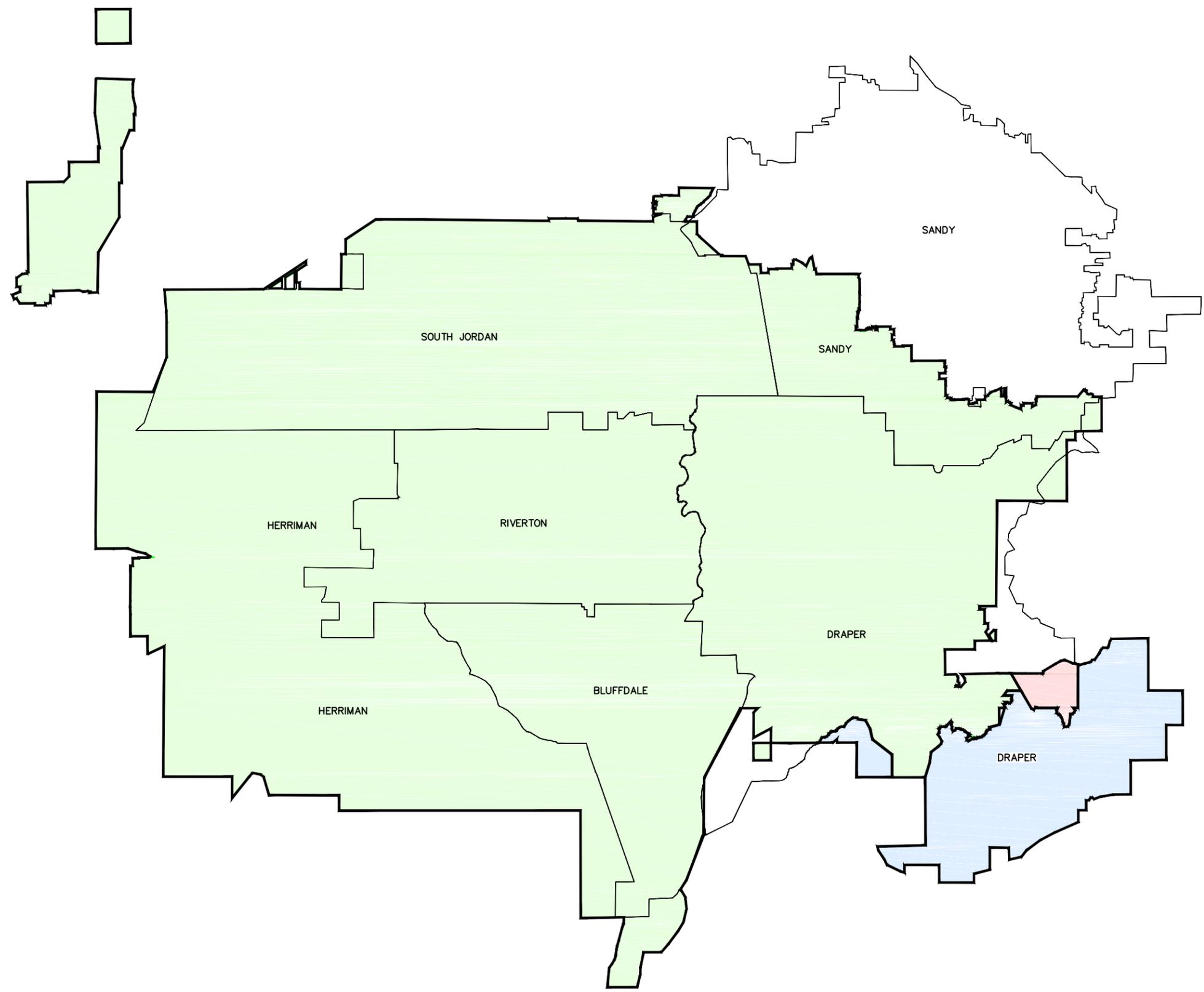
Requirements for the preparation of an IFFP are outlined in Title 11, Chapter 36a of the Utah Code (the Impact Fees Act). Under these requirements, an IFFP shall accomplish the following for each facility:

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

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

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

Level of service is defined in the Impact Fees Act as “the defined performance standard or unit of demand for each capital component of a public facility within a service area”. Normally, the existing level of service would be addressed in this section but since there is no existing



Legend

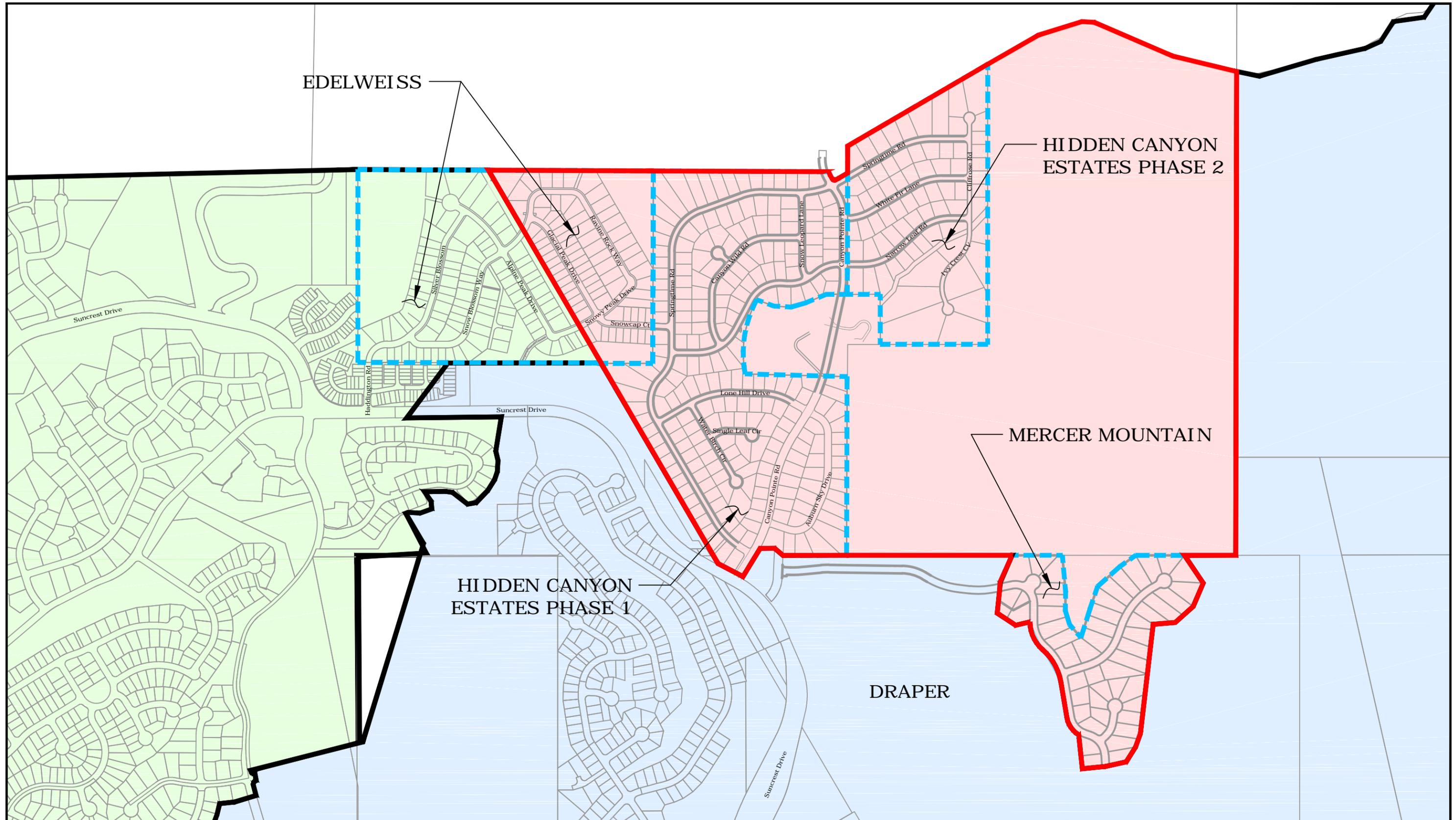
- Service Area 1
- Service Area 3
- Service Area 4

— SVSD Boundary



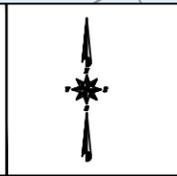
FIGURE 1
SVSD SERVICE AREAS

August 2016



Legend

	Service Area 1		SVSD Boundary		Subdivision Boundary
	Service Area 3		SVSD Service Area No. 4 Boundary		
	Service Area 4				



Bowen Collins & Associates, Inc.
CONSULTING ENGINEERS

FIGURE 2
SVSD SERVICE AREA 4
August 2016

development or sewer infrastructure within the new service area, there is no existing level of service at this time.

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

It is proposed that the level of service for Service Area 4 be the same as the proposed level of service for the other service areas of the District as summarized in the following sections.

Unit of Demand

The projected flow used to design and evaluate system components will vary depending on the nature of each component. For example, most treatment plant processes are designed based on average day, maximum month flow. Conversely, conveyance pipelines must be designed based on peak hour flow (function of daily flow and diurnal flow variation). For the purposes of this analysis, it is useful to define these various demands in terms of Equivalent Residential Units (ERUs). An ERU represents the demand that a typical single family residence places on the system. The basis of an ERU for historical flow rates is summarized in Table 1. Additional detail regarding the calculation of values used in the definition of an ERU are contained in the District's Water and Sewer Capital Facility Plan dated November 2013.

Table 1
SVSD Service Area Historic Flows

Item	Value for Existing Conditions
Flows per ERU	
Ave. Daily Domestic WW Production (gpd/ERU)	223
Peak Month Average Daily Flow (gpd/ERU)	293
Peak Month Average Weekday Flow (gpd/ERU)	285
Peak Month Average Weekend Flow (gpd/ERU)	317
Thanksgiving Average Daily Flow (gpd/ERU)	300
Diurnal Flow Variation	Varies by Flow Scenario
Maximum Pipeline Flow Depth (Dry Weather Flow)	75% of Pipeline Depth

Performance Standard

SVSD engineering standards require that all sewer mains be designed such that the peak flow depth in the pipe is less than or equal to the depth equal to 75 percent of the pipe's hydraulic capacity, using a Manning's roughness factor n of 0.013 for PVC and HDPE pipes. This is approximately equal to a depth over diameter ratio of 0.65. This allows for a small amount of extra capacity to be reserved in the pipeline to account for potential inflow into the system and other unknowns. This design standard was used as the level of service for system evaluation.

EXCESS CAPACITY TO ACCOMMODATE FUTURE GROWTH - 11-36a-302(1)(a)(iii)

Projected future growth can be met through a combination of available excess capacity in existing facilities and construction of additional capacity in new facilities. In the case of Service Area 4, there are no existing sewer facilities within the new service area. As a result, there is no need to address excess capacity to accommodate future growth as part of this IFFP.

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

Growth within the District's new service area, and projections of sewer flows resulting from said growth is estimated to be 422 ERUs based on current development plans.

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

State law requires that this IFFP describe the "demands placed upon existing public facilities by new development activity at the proposed level of service; and... the means by which the political subdivision or private entity will meet those growth demands" (Section 11-36a-302-1.a). In the case of Service Area 4, there are no existing facilities to evaluate. The demands associated with the new development activity will be met through the construction of a new pipeline as described in the 10-year Improvement Plan below.

10-Year Improvement Plan

For Service Area 4, only a single project is needed to provide service to the area. This project consists of a new 8-inch gravity sewer outfall. A map and cost estimate of this project are included in an appendix to this report. For the calculation of impact fees, only infrastructure to be constructed within a ten year horizon may be considered to avoid uncertainty surrounding improvements further into the future. Since this project will need to be constructed before any development occurs, it is definitely within the 10-year planning window. Table 2 summarizes the components and cost of this project which essentially becomes the 10-year improvement plan for Service Area 4.

**Table 2
Project Cost Allocated to Projected Development, 10-year Planning Window**

Name of Project	Total Cost	Percent to Existing	Percent to Growth	Cost to Existing	Cost to Growth
Service Area No. 4 Gravity Sewer Outfall	\$1,798,100	0.0%	100.0%	\$0	\$1,798,100
Total Costs	\$1,798,100			\$0	\$1,798,100

Project Cost Attributable to Future Growth

To satisfy the requirements of state law, Table 2 also provides a breakdown of the capital facilities project and the percentage of the project's cost attributed to future users. As defined in Section 11-36a-102(15), the impact fee facilities plan should only include the proportionate share of "the cost of public facilities that are roughly proportionate and reasonably related to the service demands and needs of any development activity." The project identified in the table is required solely to meet future growth. As a result, 100 percent of the project cost can be attributed to new growth.

Basis of Construction Cost Estimates

The costs of construction for project have been estimated based on past District experience with projects of a similar nature and other projects completed by BC&A outside of the District.

ADDITIONAL CONSIDERATIONS

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

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

Federal and State Grants and Donations

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

Bonds

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

Interfund Loans

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

Impact Fees

It is recommended that impact fees be used to fund growth-related capital projects as they help to maintain the proposed level of service. Based on this IFFP, an impact fee analysis will be able to

calculate a fair and legal fee that new growth should pay to fund the portion of the new facilities that will benefit new development.

Developer Dedications and Exactions

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

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

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

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

According to State statute, impact fees cannot be used to correct deficiencies in the District's system and must be necessary to maintain the proposed level of service established for all users. Only those facilities or portions of facilities that are required to maintain the proposed level of service for future growth have been included in this IFFP.

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

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

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

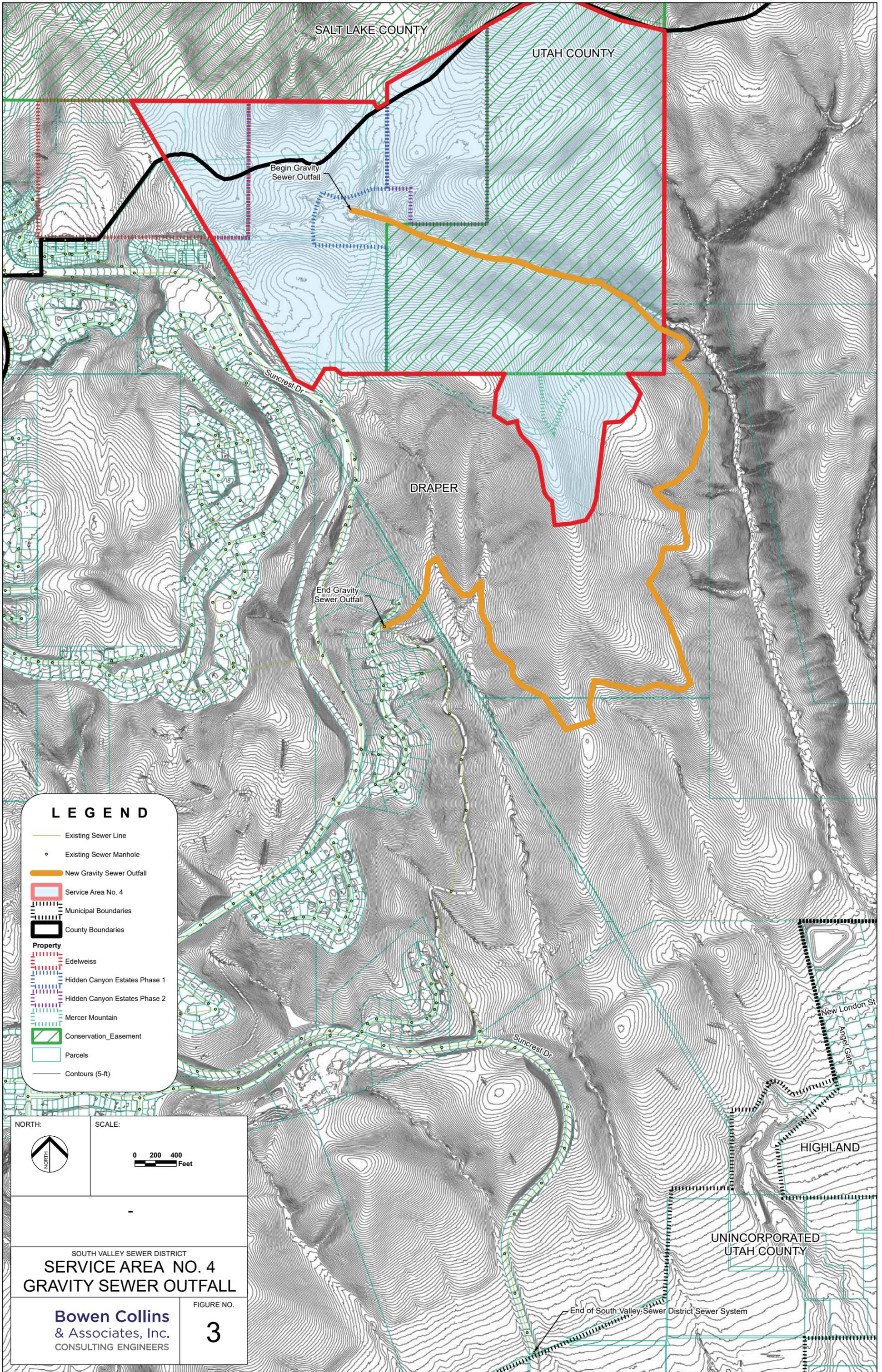
I certify that the attached impact fee facilities plan:

1. Includes only the costs of public facilities that are:
 - a. allowed under the Impact Fees Act; and
 - b. actually incurred; or
 - c. projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. Does not include:
 - a. costs of operation and maintenance of public facilities;
 - b. cost for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents; or
 - c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement; and
3. Complies in each and every relevant respect with the Impact Fees Act.



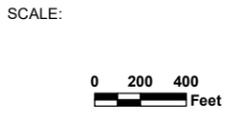
Keith J. Larson, P.E.

APPENDIX



LEGEND

- Existing Sewer Line
- Existing Sewer Manhole
- New Gravity Sewer Outfall
- Service Area No. 4
- Municipal Boundaries
- County Boundaries
- Property**
- Edelweiss
- Hidden Canyon Estates Phase 1
- Hidden Canyon Estates Phase 2
- Mercer Mountain
- Conservation Easement
- Parcels
- Contours (5-ft)



SOUTH VALLEY SEWER DISTRICT
SERVICE AREA NO. 4
GRAVITY SEWER OUTFALL

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 & Associates, Inc.
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FIGURE NO.
3