Grand Water & Sewer Service Agency (GWSSA)
Impact Fee Facilities Plan

February 2021

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Table of Contents

CERTIFICATION OF IMPACT FEE ANALYSIS BY CONSULTANT

In accordance with Utah Code Annotated, § 11-36a-306, Devan Shields, P.E., on behalf of Sunrise Engineering, Inc., 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. Cost for operation and maintenance of public facilities;
    b. Costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents; or
    c. An expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement;

3. Offsets costs with grants or other alternate sources of payment; and

4. Complies in each and every relevant respect with the Impact Fees Act.

Dated: _____

Sunrise Engineering, Inc.

By: _____

1.0 Introduction

The Grand Water & Sewer Service Agency (GWSSA) commissioned this Impact Fee Facilities Plan to provide a summary of the necessary capital improvements to meet the agency's culinary water, secondary water, and sanitary sewer needs. An impact fee analysis has already been completed for each of the existing systems and can be found in the appendix. Originally, the agency did not require an impact fee facilities plan because it served less than 5,000 people and charged less than $250,000 annually in impact fees; however, over the last few years, the agency has experience significant growth which resulted in a significant increase in collected impact fees.

This report will draw from the information from the latest impact fee analyses. Information found in this report can be backed up by impact fee analyses (found in the appendix).

2.0 Demographics and Projections of Future Demand

GWSSA provides culinary water, secondary water, and sanitary sewer service to the unincorporated area of Spanish Valley, south of the City of Moab in Grand County, Utah.

Based on the impact fee analyses and most recent master plans, a population growth rate of 2 percent per year was projected for the next 20 years. This impact fee facilities plan relies upon those growth projections to determine the number of future ERCs to be served by future sanitary sewer system improvements. The same 20-year planning period will be used in this impact facilities plan as the impact fee analyses. Table 2.1 shows the population growth projection for the GWSSA service area through 2035.

Table 2.1

Year	Projected Population
2010	3,750
2015	4,140
2020	4,571
2025	5,047
2030	5,572
2035	6,152

GWSSA Population Growth through the Year 2035

Future growth in this plan will be converted to growth in equivalent residential connections (ERCs). Then the amount allocated to future growth can be divided by the number of new ERCs over the 20-year period to determine the maximum reasonable impact fee for the proposed projects.

3.0 Culinary Water System

The newest GWSSA Culinary Water Impact Fee Analysis can be found in Appendix A and information from it will be summarized herein.

3.1 Current System

As of year 2015 reporting, GWSSA's culinary system served a total of 1846 connections, of which 1726 were domestic, 94 commercial, 9 industrial, and 17 institutional. Reported water usage for 2015 was an annual total of 836.95 acre-feet of water. The Agency completed culinary projects in 1998 and 2000 which added two new wells and a new storage tank with capacity of 3,000,000 gallons. At the time of the analysis, the distribution system was insufficient to support the population, which is why new projects were proposed to bring the level of service up to state standards. The new projects were also to provide additional capacity for future demand.

For the 20 year planning period of the analysis, GWSSA must have water right sufficient to supply 2,856 acre-feet per year to meet future demand at current state minimum required water right guidelines. At the time, GWSSA owned the water right for a total of 1,672 acre-feet annually and thus had a deficit in required water right of 1,184 acre-feet for the planning period.

3.2 Calculation of ERC and Projected Demand

ERCs were calculated in the Culinary Impact Fee Analysis (see Section 6.2, Appendix A), and a summary of the number of connections and the associated ERC values is shown in Table 3.1.

Table 3.1: ERC Equivalents per Connection Category

ERC's By Connection Type			
Category	**Conn.**	**ERC/Conn.**	**Current ERC's**
Residential	1,699	1.0	1699
MDU	13	5.0	65
Commercial	95	2.6	247
M&I	23	3.5	81
Total	**1,830**		**2092**

The projected number of residential ERCs for the 20-year planning period was calculated using the compound interest formula as follows: F = Connections x (1 + rate)20 years where F is the projected number of connections and the rate of growth is 2% per year.

Total ERCs: $F = 2{,}092 \text{ ERC's} \times (1 + 0.02)^{20} = 3{,}109 \text{ ERC's}$

The projected number of ERCs for each category are shown in Table 3.2.

Table 3.2: Projected ERCs by Category

20 Yr. Projected ERC's			
Category	**Conn.**	**ERC/Conn.**	**Total ERC's**
Residential	2,525	1.0	2,525
MDU	19	5.0	97
Commercial	141	2.6	367
M&I	34	3.5	120
		Total	**3,109**

3.3 Excess Capacity

In 2000 and 2001, culinary projects were completed which included the construction of a 3-million-gallon concrete storage tank and the construction of two wells, the Chapman and Spanish Valley wells. Each of these has excess capacity allocated to future growth. Per Section 6.4 of the impact fee analysis found in Appendix A, the tank has capacity to serve 1,985 ERCs and the additional wells have capacity to serve 934 ERCs. Table 3.3 outlines the past projects with excess capacity.

Table 3.3

Past Improvements with Excess Capacity	Cost	Excess Capacity (ERC)	Cost per ERC
3M Gallon Concrete Storage Tank	$1,132,755	1985	$570.66
Chapman and Spanish Valley Wells	$996,161	934	$1,066.55
TOTAL	**$2,005,022**		**$1,637.21**

3.4 Level of Service

The determination of the existing Level of Service (LOS) of the current systems is based upon previous project design capacity as well as minimum standards required by current regulations.

3.5 New Near-Term Projects

Only projects that will be completed within six years of the analysis are impact fee eligible, so only projects planned within this timeframe will be discussed.

Table 3.4 contains a comprehensive list of proposed projects, allocable costs, ERCs served, and cost per ERC for projects that will be commissioned within the next six years.

GWSSA planned to complete water rights projects at a budgeted cost of $50,000. These water rights projects are to ensure that GWSSA has water rights adequate for future demand and the cost of these projects is 100 percent allocable to future growth.

A portion of the remaining planned project cost of $5,150,773 was to increase the level of service for existing customers, including replacing dysfunctional valves, installing new hydrants, and replacing existing PRV stations. These projects represent $728,025 of the total planned for future projects and are not impact fee eligible. Other projects would increase service for a portion of the existing population but have excess capacity to serve new growth.

Table 3.4

RECOMMENDED IMPROVEMENTS - IMPACT FEE ELIGIBLE	Cost	Grant	Principal + Interest	w/in 6 years	% Allocable to New Growth	Eligible Cost	ERC's Served	$/ERC
WATER RIGHTS ANALYSIS & ACTIONS	$50,000	$15,000	$55,771	Y	100%	$55,770.73	1017	$54.84
500,000 GAL CONCRETE TANK W/BOOSTER ST	$1,588,992	$476,698	$1,772,385	Y	43.20%	$765,670.45	1017	$752.87
12" LINE - LEMON LANE TO ANGEL ROCK TO HWY	$531,631	$159,489	$592,989	Y	43.20%	$256,171.04	1017	$251.89
10" LINE - DESERT HILLS	$312,530	$93,759	$348,601	Y	43.20%	$150,595.52	1017	$148.08
BOOSTER ST. - GEORGE WHITE RD	$259,985	$77,995	$289,991	Y	43.20%	$125,275.90	1017	$123.18
10" LINE - SPANISH VALLEY DR	$1,315,288	$394,587	$1,467,092	Y	43.20%	$633,783.68	1017	$623.19
INSTALL PRV - SPANISH VALLEY DR & HEAVEN AVE	$103,445	$31,034	$115,384	Y	43.20%	$49,845.93	1017	$49.01
12" LINE SPANISH VALLEY DR TO CHAPMAN	$260,876	$78,263	$290,985	Y	43.20%	$125,705.61	1017	$123.60
8" LINE - WEST DESERT RD	$158,666	$0	$0	N	43.20%	$0.00	1017	$0.00
WESTWATER DR IMPROVEMENTS	$368,849	$0	$0	N	43.20%	$0.00	1017	$0.00
8" LINE - STARBUCKS LN	$58,479	$0	$0	N	43.20%	$0.00	1017	$0.00
10" LINE - HWY 191	$215,945	$0	$0	N	43.20%	$0.00	1017	$0.00
8" LINE - CINEMA CT - ORCHARD WAY	$379,207	$0	$0	N	43.20%	$0.00	1017	$0.00

8" LINE - SKYLINE/KALINA	$317,195	$0	$0	N	43.20%	$0.00	1017	$0.00
8" LINE - MARSHALL DR	$64,173	$0	$0	N	43.20%	$0.00	1017	$0.00
8" LINE - KNUTSON KORNER	$54,809	$0	$0	N	43.20%	$0.00	1017	$0.00
8" LINE - HWY 191/BOULDER AVE	$267,187	$0	$0	N	43.20%	$0.00	1017	$0.00
8" LINE - ROBERTS RD	$125,739	$0	$0	N	43.20%	$0.00	1017	$0.00
8" LINE - LANCE AVE	$76,692	$0	$0	N	43.20%	$0.00	1017	$0.00
REPLACE DYSFUNCTIONAL VALVES ON EXIST. LINES	$295,998	$88,799	$330,161	Y	0%	$0.00		$0.00
INSTALL NEW HYDRANTS ON EXISTING LINES	$203,049	$60,915	$226,483	Y	0%	$0.00		$0.00
REPLACE EXISTING PRV STATIONS	$228,978	$68,694	$255,406	Y	0%	$0.00		$0.00
TOTAL	**$7,237,715**					**$2,162,818.86**		**$2,126.67**

3.6 Allocable Costs

Only costs allocable to future growth may be included in an impact fee.

As stated in Section 3.3, prior completed projects remain impact fee eligible due to remaining capacity which is allocated to future growth. The total impact fee eligible cost of these past improvements was $2,005,022. The capacity of the storage tank was 1,985 ERCs, and the capacity of the wells was 934 ERCs.

All the proposed water rights projects, discussed in Section 3.5, served future growth, and is 100 percent allocable to future growth. Several of the planned projects are entirely for repair or maintaining existing level of service for current residents. Those projects represent $728,025 of the total planned for future projects and are not impact fee eligible.

The remaining improvements that GWSSA planned to commission will provide an increased level of service for a portion of the existing ERCs, as well as providing additional system capacity to support growth over the 20-year planning period. A hydraulic analysis of the system was performed in conjunction with the culinary water master plan that was commissioned by GWSSA in 2015. The hydraulic analysis showed that of the 2,092 existing ERCs, 1,338 ERCs had insufficient pressures and/or fire flow capacity. The near future system improvements would increase the level of service to these 1,338 ERCs by providing sufficient system pressures and fire flow capacity, in addition to providing adequate system capacity to the 1,017 future ERCs that are anticipated during the 20-year planning period.

The total of ERCs served by the improvements (existing and future) is 2,355, of which 43.2% represents future growth and are therefore impact fee eligible. This leaves a total of $2,839,293.87 of the future planned projects and $2,005,022 of prior projects eligible for impact fee assessment, however, since not all near term projects will be commissioned within six years, only $1,939,026.98 of future planned projects are currently impact fee eligible. Because a portion of the cost of the projects will be financed by loan, the additional interest for the impact fee eligible projects is also impact fee eligible—which brings the total impact fee eligible cost to $2,162,818.86. The remaining projects may be included in future impact fee analyses. The impact fee eligibility and cost per ERC per project calculations are shown in Table 3.4.

3.7 Impact Fee Calculation

The impact fee, before considering any credits, was calculated by dividing the total allocable cost by the total number of ERCs served by the particular project. The total impact fee for the past projects was determined to be $1,637.21.

For planned projects the calculation is the same, except only the percentage that was deemed eligible per the Impact Fee Act were considered. The maximum impact fee that GWSSA may reasonably assess to new ERCs, before considering credits, is $3,763.88 per ERC. See the GWSSA Culinary Water Impact Fee Analysis in Appendix A for more details on how the impact fees were calculated.

3.8 Credits

Because a portion of monthly usage rates may be used to service debt payments for current infrastructure, a reasonable impact fee may account for the portion paid by new users to past debt service payments.

The GWSSA Culinary Water Impact Fee Analysis calculated the per ERC credit by determining the average contribution per ERC to the debt service payments or project cost over the course of the project life or payment term for the system, for both the previous projects and the proposed. Through this method, a credit of $188.56 per ERC was calculated. Please refer to the impact fee analysis in Appendix A for a more detailed explanation of the calculations for the credit.

3.9 Recommended Culinary Water Impact Fee

The total impact fee allowable for culinary water is the sum of the allocable costs for excess system capacity and new projects less any credits. In this case, the sum of the impact fees for culinary

projects equals $3,763.88, less the credit of $188.56, **for a maximum recommended impact fee of $3,575.32.**

Table 3.5

Culinary Water Impact Fee Calculation	
Past Improvement Impact Fee	$ 1,637.21
Planned Projects Impact Fee	$ 2,126.67
Annual Service Payments Credit	$ (188.56)
Total Culinary Water Impact Fee	**$ 3,575.32**

4.0 Secondary Water System

The newest GWSSA Secondary Water Impact Fee Analysis can be found in Appendix B and information from it will be summarized here.

4.1 Current System

According to the data provided by GWSSA, there are currently 194 connections on the secondary water system. This includes 19 residential connections and 175 agricultural connections.

Sources for the secondary water system include Ken's Lake, with a current storage capacity of 2820 acre-feet, and two wells known as the Beeman and Corbin wells. The potential service area for the irrigation system, without installation of booster pump stations, is limited to the area northwest of Ken's Lake below an elevation of approximately 4,930 ft. This provides approximately 40 psi subject to the lake level.

Typically, the system uses all the available lake water on an annual basis, which shows that the existing demand is equal to the available source. The current secondary water system is sufficient to support the existing connections. Therefore, the projects that have been proposed will be 100 percent allocable to future growth, but no excess capacity from existing sources will be allocated to future connections.

4.2 Calculation of ERC and Projected Demand

One ERC for the secondary water system is defined as the amount of water used by an average residential connection. For this impact fee facilities plan, an ERC is based on an average lot size of 1/4 acre and an average peak monthly usage of approximately 54,000 gallons.

A number of future developments are anticipated to bring additional connections to the GWSSA secondary water system over the 20-year planning period. Based on GWSSA's growth projections and a review of the future developments that are planned for construction it is anticipated that as many as 600 new secondary water ERCs could be added to the system by the end of the planning period. Planned projects should therefore be designed to accommodate up to 600 new ERCs.

4.3 Excess Capacity

The GWSSA secondary water system is sufficient to serve the current connections; however, the system is currently at capacity and does not have additional excess capacity.

4.4 Level of Service

The determination of the existing Level of Service (LOS) of the current distribution system is based on observations from the past several years of operation.

4.5 New Near-Terms Projects

GWSSA plans to commission a secondary water project with an estimated cost of $864,000 to be completed within the next six years. This project includes drilling a new well to increase the source capacity of the system. To serve the anticipated growth during peak month demands, the target production capacity of this well should be about 750 gpm.

The total of project costs that will occur within the next six years is $870,400 including costs for the impact fee analysis. This total is 100 percent allocable to new growth. Table 4.1 outlines the impact fee eligible costs.

Table 4.1

RECOMMENDED IMPROVEMENTS - IMPACT FEE ELIGIBLE	Cost	Principal + Interest	% Allocable to New Growth	Eligible IF Cost	ERCs Served	$/ERC
New Irrigation Well	$864,000	$1,215,839.41	100%	$1,215,839.41	600	$2,026.40
Impact Fee Analysis	$6,400	$6,400	100%	$6,400	600	$10.67
TOTAL				**$1,222,239.41**		**$2,037.07**

4.6 Allocable Costs

As previously stated, 100 percent of the proposed project will serve future growth. Because a portion of the cost of the project will be financed by a loan, the interest for the project is also impact fee

eligible. Assuming a 20-year loan at 3.0 percent interest, the total anticipated cost for the new well is $1,215,839.

This yields a total of $1,222,239 eligible for impact fee assessment.

4.7 Impact Fee Calculations

The impact fee calculation, before considering any credits, is calculated by dividing the total allocable cost by the total number of ERCs served by the project. The total impact fee for the planned projects is $2,037.07. See the GWSSA Secondary Water Impact Fee Analysis in Appendix B for more detail on how the impact fee was calculated.

4.8 Credits

Because a portion of future monthly usage rates may be used to service debt payments for proposed infrastructure, a reasonable impact fee may account for the portion paid by new users to debt service payments. To calculate the per-ERC credit requires a calculation of average contribution per ERC to the debt service payments over the course of the planning period.

For the secondary water system, a credit was calculated of $219.07 per ERC. The calculation for this credit is detailed further in the GWSSA Secondary Water Impact Fee Plan in Appendix B.

4.9 Recommended Secondary Water Impact Fee

The total impact fee allowable for secondary water is the sum of the allocable costs for excess system capacity and new projects less any credits. In this case, there are no allocable costs for excess capacity. The recommended secondary water impact fee is outlined in Table 4.2. For the GWSSA service area, the total impact fee equals $2,037.07 less the credit of $219.07 **for a recommended impact fee of $2,181.23.**

Table 4.2

Secondary Water Impact Fee Calculation	
Past Improvement Impact Fee	$0.00
Planned Projects Impact Fee	$2,037.07
Annual Service Payments Credit	-$219.07
Secondary Water Impact Fee	**$1,818.00**

5.0 Sanitary Sewer System

The newest GWSSA Sanitary Sewer Impact Fee Analysis can be found in Appendix C and information from it will be summarized herein.

5.1 Current System

As of 2018 reporting, GWSSA's sanitary sewer system served or was committed to serve a total of 2,758 ERCs. The Agency completed projects from 1996 to 2000 which added capacity. The current collection system is sufficient to support the current population. Therefore, the projects that were proposed were 100 percent allocable to future growth.

5.2 Calculation of ERC and Projected Demand

One ERC for the sanitary sewer system is defined as the amount of wastewater collected from an average residential connection. The table in Exhibit 1 of Appendix C will be used as a guideline by the GWSSA manager to determine the number of ERCs a proposed connection will be assigned.

The projected number of ERCs for the 20-year planning period was calculated using the compound interest formula as follows: $F = ERCs \times (1 + rate)^{20\ years}$ where F is the projected number of ERCs and the rate of growth is 2 percent per year.

Total ERCs: $F = 2{,}758\ ERCs \times (1 + 0.02)^{20} = 4{,}098\ ERCs$

At the end of the planning period, GWSSA is expected to have 4,098 ERCs; thus, new growth within the 20-year period is the difference between the 20-year projection and current ERCs, or 1,340 ERCs. Planned projects should therefore be designed to accommodate up to 1,340 new ERCs over the planning period.

5.3 Excess Capacity

Sanitary sewer projects completed from 1996 to 2000 included the construction of new lines and upsizing of existing lines, along with construction of the three metering stations. These projects had excess capacity at the time of construction and continue to have excess capacity allocated to future growth.

At the time of construction, the GWSSA system had adequate capacity for existing sanitary sewer loads. Based on the analysis in the 2011 impact fee update, those improvements were designed to accommodate 2,941 ERCs, an increase of 911 ERCs over the 2011 estimate of 2,030 ERCs. As this exceeds

the number of ERCs the GWSSA system is committed to serving, at the time of the analysis, a portion the cost of the improvements remains impact fee eligible.

Table 5.1

Past Improvements with Excess Capacity	Cost	% Allocable to New Growth	$ Allocable to New Growth	Current Excess Capacity	Cost per ERC
1997 CIB Bond	$154,190	20.10%	$30,973.40	438	$70.72
1996 RD Bond	$830,856	20.10%	$166,900.82	438	$381.05
DWQ Bond	$294,000	20.10%	$59,058.18	438	134.84
TOTAL	**$1,279,046**				**$586.60**

5.4 Level of Service

The determination of the existing Level of Service (LOS) of the current systems is based upon previous project design capacity as well as model analysis results. The model analysis results showed that the system was adequate to convey peak flows without surcharging.

5.5 New Near-Term Projects

GWSSA planned to commission sanitary sewer projects at a total estimated cost of $2,086,300 to be completed within six years. These projects are 100 percent allocable to new growth and are impact fee eligible. Additional projects will be required to meet the projected sanitary sewer loads through the 20-year planning period. Table 5.2 outlines the projects to be completed within six years.

Table 5.2

RECOMMENDED IMPROVEMENTS - IMPACT FEE ELIGIBLE	Cost	Grant	Principal + Interest	% Allocable to New Growth SJSVSSD	% Allocable to New Growth GWSSA	Eligible IF Cost	ERC s Served	$/ERC
Sewer Improvements along HWY 191 - 1 and 2	$980,017	$98,002	$1,185,706	-	-	$1,185,705.65	896	$1,323.33
Sewer Improvements along HWY 191 - Extension to SJ County	$1,106,283	$0	$1,106,283	63.6%	36.4%	$403,137.03	1416	$284.70
TOTAL						**$1,588,842.68**		**$1,608.03**

5.6 Allocable Costs

Only costs allocable to future growth may be included in an impact fee. As stated in Section 5.3, a portion of the prior completed projects remains impact fee eligible due to remaining capacity. The total impact fee eligible cost of these past improvements is $256,932.40. This cost is allocable to future growth. With the sub-basin changes considered, the remaining capacity of the improvements is 438 ERCs.

As stated in Section 5.5 above, 100 percent of the proposed projects will serve future growth. Thus, the cost of the projects, along with anticipated financing costs, is 100 percent allocable to future growth.

The first two segments of sewer main extensions are system improvements that will benefit growth throughout the system. The projected cost of these projects is $980,017. Assuming 10 percent grant and a 20-year loan at 3.0 percent interest, total anticipated cost for the project is $1,185,706. Based on model analysis results, these proposed improvements will provide capacity for 896 additional ERCs.

The third segment of sewer main extensions has a projected cost of $1,106,283. The immediate need for this line is due to the connection of San Juan Spanish Valley Special Service District (SJSVSSD) to the GWSSA system. Although SJVSSSD anticipates that an 8-inch main would suit their needs, GWSSA is requiring installation of a 10-inch main so that additional growth west of Highway 191 may be served off this line. Because much of the proposed line's capacity will be used by SJSVSSD, only that portion of the line's capacity projected to be available for growth within GWSSA's service is impact fee eligible. Of 1,416 ERCs this line is projected to serve, 900 are projected to be within SJSVSSD's service area, leaving 516 ERCs of capacity for growth within GWSSA's service area. Because of this, 36.4% of the projected cost of this line is impact fee eligible, with the rest of the cost attributable to SJSVSSD.

This line will be constructed by SJSVSSD, with GWSSA paying 36.4% of the projected cost, or $403,137, from impact fees. As this cost will be paid up front, no grant or loan financing is anticipated for GWSSA's portion of this project.

This yields a total of $1,845,775 of the planned and prior projects eligible for impact fee assessment.

5.7 Impact Fee Calculation

The impact fee calculation, before considering any credits, is calculated by dividing the total allocable cost by the total number of ERCs served by the project. The total impact fee for the past projects was determined to be $586.60 per ERC.

For planned projects, the calculation is the same except that more of the project costs are allocable to new growth and are impact fee eligible. The maximum impact fee that GWSSA may reasonably assess to new ERCs, before considering credits, is $1,608 per ERC. See the GWSSA Sanitary Sewer Impact Fee Analysis in Appendix C for more details on how the impact fees were calculated.

5.8 Credits

Because a portion of future monthly usage rates may be used to service debt payments for proposed infrastructure, a reasonable impact fee may account for the portion paid by new users to debt service payments. To calculate the per-ERC credit requires a calculation of average contribution per ERC to the debt service payments over the course of the planning period.

For the GWSSA sanitary system, a credit was calculated at $155.36 per ERC. The calculation for this credit is detailed further in the GWSSA Sanitary Sewer Impact Fee Analysis found in Appendix C and is applicable to new connections in both the GWSSA and SJSVSSD service areas.

5.9 Recommended Sanitary Sewer Impact Fee

The total impact fee allowable for sanitary sewer is the sum of the allocable costs for excess system capacity and new projects less any credits. In this case, the sum of the impact fees for sanitary sewer projects differs for new ERCs in the GWSSA service area compared with those in the SJSVSSD service area. The recommended sanitary sewer impact fee for each of these areas is outlined in Tables 5.3 and 5.4. For the GWSSA service area, the total impact fee equals $2,194.64 less the credit of $155.36 **for a recommended impact fee of $2,039.** For the SJSVSSD service area, the total impact fee equals $1,909.94 less the credit of $155.36 **for a recommended impact fee of $1,755.**

Table 5.3

Sanitary Sewer Impact Fee Calculation – GWSSA Service Area	
Past Improvement Impact Fee	$586.60
Planned Projects Impact Fee	$1,608.03
Annual Service Payments Credit	($155.36)
Total Sanitary Sewer Impact Fee	**$2,039**

Table 5.4

Sanitary Sewer Impact Fee Calculation – SJSVSSD Service Area	
Past Improvement Impact Fee	$586.60
Planned Projects Impact Fee	$1,323.33
Annual Service Payments Credit	($155.36)
Total Sanitary Sewer Impact Fee	**$1,755**

5.10 Moab City Impact Fee

In addition to impact fees assessed by GWSSA, new connections to the sanitary sewer system are also charged impact fees to account for impacts to the collection and treatment systems of Moab City. Based on Moab City's 2017 Sewer Impact Fee Facilities Plan and Impact Fee Analysis, this includes a fee of $542 for collection and $788 for treatment, with a total of $1,329 per ERC. For some customer types, the Moab City ERC calculation varies for flow and treatment impacts. New sanitary sewer connections in the SJSVSSD service area may also be subject to impact fees assessed by SJSVSSD.

6.0 Conclusion & Recommendations

GWSSA has experienced steady growth over the past two decades and continual growth is expected. This impact fee facilities plan will help the Agency apportion the costs of system improvements for the culinary water, secondary water, and sanitary sewer systems which support new growth in the community.

Based on proposed projects, to be completed within six years of each of the impact fee analyses, Sunrise Engineering recommends the following maximum reasonable impact fees:

- Culinary water system to be no more than $3,575.32 per ERC.
- Secondary water system to be no more than $2,181.23 per ERC.
- Sanitary sewer system to be no more than $2,039 for GWSSA service area connections and $1,755 for SJSVSSD service area connections per ERC.

The impact fee that is adopted based on this impact fee facilities plan should be charged to new connections until any of the following events occur:

1. New system improvements (other than those included in this plan) are anticipated within six years, therefore becoming eligible for inclusion in the impact fee calculation;
2. Any calculated excess capacity of the existing system facilities included in this plan is expended, at which time they will no longer be eligible for inclusion in the impact fee calculation; or
3. The impact fee analysis is otherwise reviewed and updated. It is recommended that it be updated every five years at a minimum.

This impact fee facilities plan should be reviewed and updated every five years.

APPENDIX A:

GWSSA CULINARY WATER IMPACT FEE ANALYSIS

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GRAND WATER & SEWER SERVICE AGENCY (GWSSA)

CULINARY WATER

IMPACT FEE ANALYSIS

JULY 18, 2016

Prepared by:

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Table of Contents

CERTIFICATION OF IMPACT FEE ANALYSIS BY CONSULTANT

In accordance with Utah Code Annotated, § 11-36a-306, Robert Worley, P.E., on behalf of Sunrise Engineering, Inc., makes the following certification:

I certify that the attached impact fee analysis:

1. Includes only the costs of public facilities that are:
    a. Allowed under the Impact Fees Act; and
    b. Actually incurred; or
    c. Projected to be incurred or encumbered within six years after the day on which each impact fee is paid;

2. Does not include:
    a. Cost for operation and maintenance of public facilities;
    b. Costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents; or
    c. An expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement;

3. Offsets costs with grants or other alternate sources of payment; and

4. Complies in each and every relevant respect with the Impact Fees Act.

Dated: 07/18/2016

Sunrise Engineering, Inc.

By: Robert Worley

1.0 Executive Summary

The Grand Water & Sewer Service Agency (GWSSA) commissioned this Impact Fee analysis to properly allocate the cost of culinary system improvements to new development. An impact fee is a fee imposed on new development to allocate the cost of expanding public infrastructure to accommodate the new development.

GWSSA provides culinary water and untreated agricultural water to the unincorporated area of Spanish Valley, south of the City of Moab in Grand County, Utah. The culinary water system serves several commercial, municipal, and industrial industries, and also supplies both indoor and outdoor water to approximately 4,000 people. Since 2008, the number of GWSSA residential connections has increased on average 1.58 percent per year; commercial connections have increased 1.18 percent per year on average over the same time period. Recent engineering studies have projected an average increase of 2 percent per year for the next 20 years based on planned developments which will spur more rapid growth.

Because new growth places an added burden on infrastructure and creates the need for new infrastructure, Utah law allows public water suppliers to charge an impact fee to new development.

Not all costs of system improvements are allocable to future growth. Some system improvements increase the level of service to existing customers. Only that portion of system improvements which is allocable to future growth may be considered in calculating a reasonable impact fee. Impact fees are assessed per Equivalent Residential Connection or ERC.

GWSSA plans to construct a number of improvements to its culinary water system. A portion of these system improvements will increase the level of service for existing customers. The balance is allocable to future growth.

After analyzing each of the projects, the estimated population growth, and determining an equivalent residential connection, this analysis proposes a **$3,575.32** impact fee per ERC. GWSSA may choose to assess a lower impact fee, but may not assess an impact fee higher than that justified by this analysis.

2.0 Introduction

Impact Fees Overview

An impact fee is a fee imposed on new development to “mitigate the impact of the new development on public infrastructure.” Utah Code § 11-36a-102-8(a). Impact fees are subject to the

restrictions within the Fifth Amendment of the U.S. Constitution prohibiting the taking of private property for public use without just compensation. To comply with the U.S. Constitution requires only that there be an "essential nexus" between the fee imposed and the protected interest and that the fee imposed be "roughly proportional" to the burden created by the new development. See *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987); and see *Dolan v. City of Tigard*, 512 U.S. 374 (1994).

The levy of impact fees in Utah is governed by the Utah Impact Fees Act codified as Utah Code § 11-36a and requires more specific analysis than that required by the U.S. Constitution. Before imposing an impact fee, a municipality or public service provider such as GWSSA must prepare a written analysis of each impact fee. An impact fee analysis is designed to proportionally allocate to new development that portion of the cost of new facilities that may be required or excess capacity of existing facilities. The impact fee analysis must:

(1) identify the anticipated impact on existing facilities by new development,

(2) identify the anticipated impact on system improvements by anticipated development,

(3) demonstrate how those impacts are reasonably related to the anticipated development,

(4) estimate the proportionate share of costs to be recouped by the impact fee, and

(5) identify how the impact fee was calculated. Id. at § 304.

Entities imposing impact fees must also prepare an impact fee facilities plan unless excepted by statute. An impact fee facilities plan is not required if the municipalities general plan under Utah Code 10-9a-401 contains the elements required by the Impact Fees Act. Id. at § 301. Municipalities serving less than 5,000 people and charging total impact fees of less than $250,000 annually are not required to prepare an impact fee facilities plan. However, they must ensure that the impact fees "are based upon a reasonable plan that otherwise complies with the common law and [the other sections of the Impact Fees Act]." Id. at § 301.

The Utah Supreme Court outlined a set of seven factors which may be considered in determining the reasonableness of an impact fee; these factors are now known as the "Banberry factors." Banberry Dev. Corp. v. S. Jordan City, 631 P.2d 899, 904 (Utah 1981). However, the Court has subsequently noted that these factors "were merely 'means to [an] end.' And the ultimate legal test is whether the impact fees relate to the cost of the benefits conferred on those paying the fees." Tooele Assoc. LTD. V. Tooele City Corp., 247 P.3d 371 (Utah 2011)(quoting Home Builders Ass'n of Utah v. City of American Fork, 973 P.2d 425, at ¶ 20 (Utah 1999). Nonetheless, this impact fee study will review each of the Banberry factors for each system impact fee. A brief analysis of the Banberry factors for each system is attached to this analysis as Exhibit "A."

Although the municipality may enact a lower impact fee than that justified by the Impact Fee Analysis, the municipality may not impose a fee higher than that justified in the analysis.

3.0 Purpose of this Impact Fee Analysis

The purpose of this Impact Fee Analysis is to proportionally allocate to new development the cost of several public facilities required to supply culinary water within the service area of GWSSA. Those system improvements include water rights analysis and actions required for new growth, construction of a new well, construction of a 500,000-gallon tank with booster station, installation of new and larger lines, as well as several other improvements. A complete list of proposed improvements with estimated cost is included in section 6.7 of this analysis.

This impact fee analysis calculates the highest proportionate share of the cost of these public facilities which may be reasonably allocated to new development. GWSSA is a public water supplier serving less than 5,000 people and charges impact fees less than $250,000 annually; thus, it is exempt from the requirement to provide an impact fee facilities plan.

In conjunction with calculating the reasonable impact fee for the future projects, this analysis will review and update the current impact fees and determine a total maximum reasonable impact fee for GWSSA's culinary system.

4.0 Methodology

The impact fee for culinary water facilities is derived primarily from a plan-based method for future planned development. However, this analysis also considers cost recovery for excess capacity of current systems. The portion of the impact fee analysis which focuses on planned development accounts for estimates of how the system projects will be financed. Should the actual financing of the project change from the estimated portion of grant versus debt, this analysis may require updating to ensure the impact fee assessed does not exceed the proportionate share of development's impact on the new facilities.

Impact fees may not be used for maintenance or repair of the existing system, or for system improvements that increase the level of service to existing system users, unless the improvement provides additional system capacity that directly supports new development. Impact fees may not be used to recoup more than the actual public facility costs incurred or those projected to be incurred "within six years after the day on which each impact fee is paid." Id. at § 306. Also, impact fees must include an offset

for grants or other alternative sources of payment and may not include expenses for operation and maintenance or for overhead unless such overhead expenses are calculated using a methodology consistent with generally accepted cost accounting practices and the standards accepted by the federal Office of Management and Budget for federal grant reimbursement. Id.

Accordingly, this analysis

(1) determines the actual cost incurred or to be incurred within six years of the date of this report,
(2) sets forth existing levels of service,
(3) does not include any general overhead expenditures or costs for operation of the facilities,
(4) offsets for potential grant for proposed projects,
(5) and includes an analysis of the prior completed projects which remain impact fee eligible.

To determine the proportionate share of the cost to new development, this analysis reviews current and past demographic trends and provides a projection for future growth within the GWSSA service area for the next twenty years. Capacity of the current system and excess capacity of each new system component that will be used in this analysis are based upon data provided by GWSSA, a recent Culinary Water Master Plan commissioned by GWSSA, and estimates calculated by Sunrise Engineering, Inc. Costs of the proposed public facilities are calculated based upon an engineer's opinion of probable cost.

Because water demands of multi-family, industrial, and commercial connections vary widely, excess capacity of system components is expressed in terms of equivalent residential connections (ERC's), sometimes referred to as estimated residential units (ERU's). An ERC is equivalent to what would be used by a typical single-family residence. ERCs are different for each type of public facility and are more particularly described section 6.2 of this analysis.

The determination of the existing Level of Service (LOS) of the current systems is based upon previous project design capacity as well as minimum standards required by current regulations.

5.0 Demographics and Projections of Future Demand

GWSSA provides culinary water and untreated agricultural water to the unincorporated area of Spanish Valley, south of the City of Moab in Grand County, Utah. The culinary water system supplies water to approximately 4,000 people, in addition to several commercial, municipal, and industrial entities. The

culinary water system supplies water for both indoor and outdoor use, although a secondary water system is available to a portion of the culinary water users for outdoor watering.

The most recent culinary water master plan and concurrent wastewater feasibility study project a population growth rate of 2 percent per year for the next 20 years. This impact fee analysis relies upon those growth projections to determine the number of future ERC's to be served by the proposed culinary system improvements. The same 20-year period is also used. Table 5.1 shows the 20-year population growth projection for the GWSSA service area.

Table 5.1

Year	Projected Population
2010	3,750
2015	4,140
2020	4,571
2025	5,047
2030	5,572
2035	6,152

GWSSA Population Growth through the Year 2035

6.0 Culinary Water Impact Fee Analysis

GWSSA has completed several culinary water projects in the past 20 years. GWSSA also has planned future projects with an estimated total cost of just over $7 million. This impact fee analysis will first determine what amount, if any, of the cost of the future projects may be allocable to future growth. Future growth for the next 20 years is converted to growth in equivalent residential connections (ERCs). Then the amount allocated to future growth can be divided by the number of new ERC's over the 20-year period to determine the maximum reasonable impact fee for those projects. This analysis will also review excess capacity related to prior culinary projects. The total maximum reasonable impact fee for culinary water is a combination of the amount allocable for future projects and the amount of excess capacity of current systems allocable to new growth.

It is recommended that this impact fee analysis be reviewed and updated every five years at a minimum. Impact fee calculations may also include the proportionate costs of existing facilities and components that currently have excess capacity.

The existing capacity of the current system and the excess capacity of each component that will be used in this Impact Fee Analysis will be based on the data provided by GWSSA's record of previous projects and associated project financing. Excess capacity of system components will be expressed in

terms of equivalent residential connections (ERC). The determination of the existing Level of Service (LOS) of the current distribution system will be based on the design capacity of both the current system and the planned projects.

6.1 Current System

As of year 2015 reporting, GWSSA's current culinary system served a total of 1846 connections, of which 1726 were domestic, 94 commercial, 9 industrial, and 17 institutional. GWSSA reported under the name Grand County Water Conservancy District. Reported water usage for 2015 was an annual total of 836.95 acre-feet of water. The Agency completed culinary projects in 1998 and 2000 which added two new wells and a new storage tank with capacity of 3,000,000 gallons. The current distribution system is insufficient to support the current population, which is why new projects have been proposed to bring the level of service for the current population up to state standards. The new projects will also provide additional capacity for future demand.

Over the next 20 years GWSSA must have water right sufficient to supply 2,856 acre-feet per year to meet future demand at current state minimum required water right guidelines. Currently, GWSSA owns the water right for a total of 1,672 acre-feet annually and thus has a deficit in required water right of 1,184 acre-feet for the planning period.

GWSSA currently charges an impact fee of $2,093 per ERC for culinary water.

6.2 Calculation of ERC

One ERC for the culinary system is defined as the amount of culinary water required by an average residential connection. Because an ERC relates to the amount of water required for the average residential connection, use of this term allows commercial, institutional, or other large water users to be equated to a residential connection. ERC's are factored into calculations for impact fees, user rates, and other analyses as required for design purposes.

The Utah Division of Drinking Water (DDW) requires that a system should have the storage capacity to provide an average of 400 gal/day/ERC for indoor water use. One ERC will normally represent an average use of 400 gal/day, (146,000 gallons per connection per year). Storage capacity must provide storage "to satisfy average day demands for water for indoor use and irrigation use." Utah Administrative Code Rule R309-510-8. Storage Sizing. It must also provide fire flow storage for fire suppression. Id.

A review of the water usage for each of the connection types that are currently on the system was performed to determine the equivalent ERC value to assign to each type of connection. Based on these records, the commercial connection group will be assigned an ERC multiplier value of 2.6, due to the fact that the average commercial connection on the system uses approximately 2.6 times the amount of water that the average residential connections use. The M&I connection group will be assigned an ERC multiplier of 3.5, and the MDU connection group will be assigned an ERC multiplier of 5, which is based on average ERC multipliers for the various meter sizes provided to MDU facilities.

Table 6.1 shows the number of connections for each of these categories along with its associated ERC values.

Table 6.1: ERC Equivalents per Connection Category

ERC's By Connection Type			
Category	**Conn.**	**ERC/Conn.**	**Current ERC's**
Residential	1,699	1.0	1699
MDU	13	5.0	65
Commercial	95	2.6	247
M&I	23	3.5	81
Total	**1,830**		**2092**

6.3 Projected Demand

The number of culinary water ERC's expected at the end of the planning period can be calculated using the compound interest formula and inserting the projected growth rate, the existing number of culinary water ERC's, and the 20 year planning period for culinary water improvements.

The projected number of residential ERC's for the 20 year planning period is calculated using the compound interest formula as follows: F = Connections x $(1 + \text{rate})^{20\ \text{years}}$ where F is the projected number of connections and the rate of growth is 2% per year.

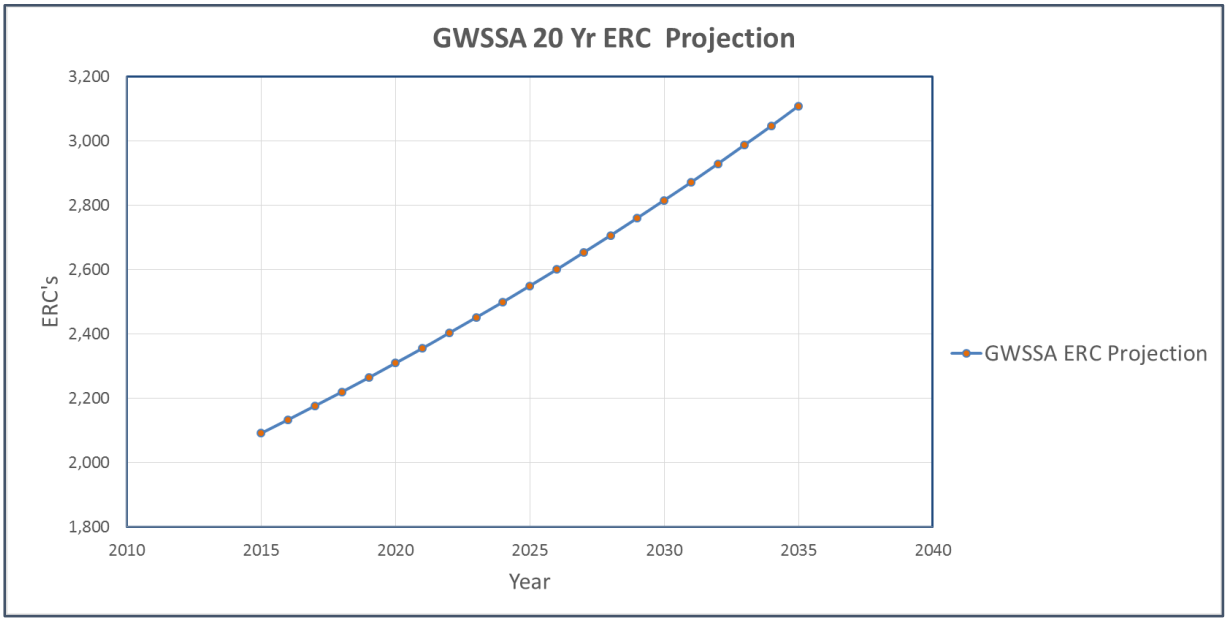
Total ERC's: $F = 2{,}092\ \text{ERC's} \times (1 + 0.02)^{20} = 3{,}109\ \text{ERC's}$

At the end of the planning period, GWSSA is expected to have 3,109 ERC's; thus, new growth within the 20-year period is the difference between the 20-year projection and current ERC's, or 1017 ERCs. The projected number of ERC's for each category are shown in Table 6.3.1 and Figure 6.3.1.

Table 6.3.1: Projected ERC's by Category

20 Yr. Projected ERC's			
Category	**Conn.**	**ERC/Conn.**	**Total ERC's**
Residential	2,525	1.0	2,525
MDU	19	5.0	97
Commercial	141	2.6	367
M&I	34	3.5	120
		Total	**3,109**

Figure 6.3.1: Projected Growth by ERC's



6.4 Excess Capacity

Culinary projects completed in 2000 and 2001 had excess capacity allocable to future growth. These projects included the construction of a 3-million-gallon concrete storage tank and the construction of two wells, the Chapman and Spanish Valley wells. These projects had excess capacity at the time of construction and continue to have excess capacity fully allocated to future growth.

At the time of construction, GWSSA had adequate storage for existing demand. The 3-million-gallon tank was added to provide excess capacity for growth; therefore, all of the excess storage capacity of the tank is allocable to future growth. The tank has a total capacity of serving 1,985 ERCs.

The additional wells had capacity to serve 934 ERCs. At the time of construction, GWSSA had capacity to serve current residents; thus the full 934 ERC capacity of the additional wells was impact fee eligible. These wells have remaining excess capacity. Until the wells are serving the full capacity, the cost of the wells remains impact fee eligible. The cost allocation of these projects to ERCs is calculated in section 6.6 of this analysis.

6.5 New Near-term Projects

GWSSA plans to commission culinary water projects at a total estimated cost of $7,237,715. Not all of these projects, however, will be completed within the next six years. Table 6.7.1. contains a detailed list of projects to be completed and designates which of those projects will be commissioned within the next six years. The total of the projects to be commissioned within the next six years is $5,150,773. Of those projects, one is 100 percent allocable to future growth. A portion of the remaining projects is allocable to new growth.

First, GWSSA plans to complete water rights projects at a budgeted cost of $50,000. These water rights projects are to ensure that GWSSA has water rights adequate for future demand and the cost of these projects is 100 percent allocable to future growth.

A portion of the remaining projected project cost of $5,150,773 will increase the level of service for existing customers. Some of those projects, including replacing dysfunctional valves, installing new hydrants, and replacing existing PRV stations is only to fix current system deficiencies, in other words, to increase the level of service for existing customers. Other projects will increase service for a portion of the current population but will have excess capacity to serve new growth. A comprehensive list of proposed new projects, allocable costs, ERC's served, and cost per ERC is included in Table 6.7.1

6.6 Allocable Costs

Only costs allocable to future growth may be included in an impact fee. As stated in section 6.4, prior completed projects remain impact fee eligible due to remaining capacity. The total impact fee eligible cost of these past improvements was $2,005,022. This cost was allocable to future growth. The capacity of the storage tank was 1,985 ERCs. The total impact fee eligible cost of the storage tank was $1,132.755. The capacity of the wells was 934 ERCs. The total impact fee eligible cost of the wells was $996,161.

As stated in section 6.5 above, all of the contemplated water rights projects will serve future growth. Thus, the cost of the water rights portion of the project is 100 percent allocable to future growth. Several of the planned projects are entirely for repair or maintaining existing level of service for current residents. Those projects represent $728,025 of the total planned for future projects and are not impact fee eligible.

The remaining improvements will provide an increased level of service for a portion of the existing ERCs, as well as providing additional system capacity to support growth over the 20 year planning period. A hydraulic analysis of the system was performed in conjunction with the culinary water master plan that was commissioned by GWSSA in 2015. The hydraulic analysis showed that of the 2,092 existing ERC's, 1,338 ERC's had insufficient pressures and/or fire flow capacity. The near future system improvements will increase the level of service to these 1,338 ERC's by providing sufficient system pressures and fire flow capacity, in addition to providing adequate system capacity to the 1,017 future ERC's that are anticipated during the 20 year planning period. Therefore, the total ERC's served by the improvements (existing and future) are 2,355 ERC, of which 43.2% are represented by future growth and are therefore impact fee eligible. This leaves a total of $2,839,293.87 of the future planned projects and $2,005,022 of prior projects eligible for impact fee assessment, however, since not all near term projects will be commissioned within six years, only $1,939,026.98 of future planned projects are currently impact fee eligible. Because a portion of the cost of the projects will be financed by loan, the additional interest for the impact fee eligible projects is also impact fee eligible—which brings the total impact fee eligible cost to $2,162,818.86. The remaining projects may be included in future impact fee analyses. The impact fee eligibility and cost per ERC per project calculations are shown in Table 6.7.2.

6.7 Impact Fee Calculation

The impact fee calculation, before considering any credits, is calculated simply by dividing the total allocable cost by the total number of ERCs served by the particular project.

For the past projects including the tank and wells, the total allocable cost is $2,005,022. The number of ERCs served by the projects is not the same because the capacity of each project was different. The storage tank has capacity for 1985 ERCs at a total impact fee eligible cost of $1,132,755—the cost per ERC being $570.66. The wells have capacity to serve 934 ERCs at a total impact fee eligible cost of $996,161—the cost per ERC being $1,066.55.

The total impact fee for these past projects with excess capacity is $1,637.21 as shown in Table 6.7.1.

Table 6.7.1

Past Improvements with Excess Capacity	Cost	Total Capacity	Cost per ERC
3M Gallon Concrete Storage Tank	$1,132,755	1985	$570.66
Chapman and Spanish Valley Wells	$996,161	934	$1,066.55
TOTAL	**$2,005,022**		**$1,637.21**

For planned projects, the calculation is the same except for the fact that a percentage of the projects will increase or maintain level of service for existing customers so only a portion of those projects' costs are impact fee eligible.

Table 6.7.2 shows each of the planned projects, the percent allocable to future growth, the number of ERC's served by each project, the cost of each improvement, grant portion for each improvement, principal and interest payments for each improvement, and the impact fee per ERC for that portion of the project. The total impact fee for planned culinary projects is **$2,126.67.**

The maximum impact fee that GWSSA may reasonably assess to new ERCs, before considering credits, is the total of the past project eligible cost per ERC plus the total of the future project eligible cost per ERC which equals $3,763.88 per ERC.

Table 6.7.2

RECOMMENDED IMPROVEMENTS - IMPACT FEE ELIGIBLE	Cost	Grant	Principal + Interest	w/in 6 years	% Allocable to New Growth	Eligible Cost	ERC's Served	$/ERC
WATER RIGHTS ANALYSIS & ACTIONS	$50,000	$15,000	$55,771	Y	100%	$55,770.73	1017	$54.84
500,000 GAL CONCRETE TANK W/BOOSTER ST	$1,588,992	$476,698	$1,772,385	Y	43.2%	$765,670.45	1017	$752.87

12" LINE - LEMON LANE TO ANGEL ROCK TO HWY 191	$531,631	$159,489	$592,989	Y	43.2%	$256,171.04	1017	$251.89
10" LINE - DESERT HILLS	$312,530	$93,759	$348,601	Y	43.2%	$150,595.52	1017	$148.08
BOOSTER ST. - GEORGE WHITE RD	$259,985	$77,995	$289,991	Y	43.2%	$125,275.90	1017	$123.18
10" LINE - SPANISH VALLEY DR	$1,315,288	$394,587	$1,467,092	Y	43.2%	$633,783.68	1017	$623.19
INSTALL PRV - SPANISH VALLEY DR & HEAVEN AVE	$103,445	$31,034	$115,384	Y	43.2%	$49,845.93	1017	$49.01
12" LINE SPANISH VALLEY DR TO CHAPMAN	$260,876	$78,263	$290,985	Y	43.2%	$125,705.61	1017	$123.60
8" LINE - WEST DESERT RD	$158,666	$0	$0	N	43.2%	$0.00	1017	$0.00
WESTWATER DR IMPROVEMENTS	$368,849	$0	$0	N	43.2%	$0.00	1017	$0.00
8" LINE - STARBUCKS LN	$58,479	$0	$0	N	43.2%	$0.00	1017	$0.00
10" LINE - HWY 191	$215,945	$0	$0	N	43.2%	$0.00	1017	$0.00
8" LINE - CINEMA CT - ORCHARD WAY	$379,207	$0	$0	N	43.2%	$0.00	1017	$0.00
8" LINE - SKYLINE/KALINA	$317,195	$0	$0	N	43.2%	$0.00	1017	$0.00
8" LINE - MARSHALL DR	$64,173	$0	$0	N	43.2%	$0.00	1017	$0.00
8" LINE - KNUTSON KORNER	$54,809	$0	$0	N	43.2%	$0.00	1017	$0.00
8" LINE - HWY 191/BOULDER AVE	$267,187	$0	$0	N	43.2%	$0.00	1017	$0.00
8" LINE - ROBERTS RD	$125,739	$0	$0	N	43.2%	$0.00	1017	$0.00
8" LINE - LANCE AVE	$76,692	$0	$0	N	43.2%	$0.00	1017	$0.00
REPLACE DYSFUNCTIONAL VALVES ON EXIST. LINES	$295,998	$88,799	$330,161	Y	0%	$0.00		$0.00
INSTALL NEW HYDRANTS ON EXISTING LINES	$203,049	$60,915	$226,483	Y	0%	$0.00		$0.00
REPLACE EXISTING PRV STATIONS	$228,978	$68,694	$255,406	Y	0%	$0.00		$0.00
TOTAL	**$7,237,715**					**$2,162,818.86**		**$2,126.67**

6.8 Credits

Because a portion of monthly usage rates may be used to service debt payments for current infrastructure, a reasonable impact fee may account for the portion paid by new users to past debt service payments. To calculate the per ERC credit requires a calculation of average contribution per ERC to the debt service payments or project cost over the course of the project life or payment term for the system.

In past impact fee analyses, GWSSA planned to service the portion of debt and bond payments allocable to future growth through the collection of impact fees. The prior analysis provided no credit for any portion of monthly user rates that may go toward such payments. As such, it is assumed that GWSSA currently services the portion of debt payments allocable to future growth fully from the impact fee collected and no credit should be given for past projects.

However, for planned projects, GWSSA will pursue loans to fund a portion of the project. SEI estimates that a portion of the project may be grant eligible. The remainder will be financed through a USDA Rural Development Loan with new annual debt service payments of $143,631.17 (not including debt reserve) over 40 years. The full details of estimated funding are provided in Exhibit B. As new ERC's are added to the system, the portion of user fees allocated to debt-service payments will decrease. On average, new ERCs will contribute to debt-service payments for 8.84 years.

To calculate a reasonable credit SEI took the total project cost multiplied by the percentage of the costs that were impact fee eligible. The result being that 38 percent of the total project cost is impact fee eligible and may be offset by a credit for the portion of annual service payments used for annual debt service. Thirty-eight percent of the $143,631.17 annual debt service payment is $54,579.85. SEI then divided the impact fee eligible portion by the number of ERCs served for each year through 2036. The average portion of user fees being used for debt service on impact fee eligible projects over the life of the loan is $21.33 annually. The credit is then calculated by multiplying the average portion of annual user fees by the average years an ERC will pay user fees. Thus, $21.33 x 8.84 years = a credit of $188.56 per ERC. The calculation for this credit is detailed further in Exhibit "C" to this analysis.

6.9 Recommended Culinary Water Impact Fee

The total impact fee allowable for culinary water is the sum of the allocable costs for excess system capacity and new projects less any credits. In this case, the sum of the impact fees for culinary projects equals $3,763.88 less the credit of $188.56 **for a recommended impact fee of $3,575.32.**

Table 6.8.1

Culinary Water Impact Fee Calculation	
Past Improvement Impact Fee	$ 1,637.21
Planned Projects Impact Fee	$ 2,126.67
Annual Service Payments Credit	$ (188.56)
Total Culinary Water Impact Fee	**$ 3,575.32**

7.0 Conclusion & Recommendations

Sunrise Engineering recommends the maximum reasonable impact fees for GWSSA's culinary system be no more than $3,575.32 assessed per ERC.

Before enacting the actual impact fees, GWSSA should take into consideration the relationship between impact fees and future growth because an impact fee can influence the growth in a community.

The impact fee that is adopted based on this impact fee analysis should be charged to new connections until any of the following events occur:

1. New system improvements (other than those included in this analysis) are anticipated within six years, therefore becoming eligible for inclusion in the impact fee calculation;
2. The calculated excess capacity of the existing system facilities included in this analysis is expended, at which time they will no longer be eligible for inclusion in the impact fee calculation; or
3. The impact fee analysis is otherwise reviewed and updated. It is recommended that it be updated every five years at a minimum.

GWSSA has experienced steady growth over the past two decades and continual growth is expected. In addition to residential growth, GWSSA should also anticipate commercial and industrial growth which may place additional demands on the culinary water system. This impact fee analysis will help the City apportion the costs of system improvements and expansion to the new growth that the improvements will serve. Additionally, as the population served by GWSSA grows, GWSSA should be aware that in the future it may be required to complete a facilities plan to accompany future impact fee analyses.

APPENDIX A:

ANALYSIS OF BANBERRY FACTORS

Banberry Factors Analysis

Utah Code Ann. 11-36a-304(2) requires that the following factors, also known as the Banberry Factors be considered as applicable in order to verify that the proportionate share of the costs of public facilities are reasonably related to the new development activity.

a) *The cost of each existing public facility that has excess capacity to serve the anticipated development resulting from the new development activity:*
   The cost of each existing public facility that has excess capacity to serve the anticipated development resulting from new development activity is discussed in Section 6.5 for GWSSA's culinary system.

b) *The cost of system improvements for each public facility:*
   The costs of projected system improvements for the GWSSA's culinary water system are discussed in the same section as the cost of facilities with excess capacity.

c) *Other than impact fees, the manner of financing for each public facility, such as user charges, special assessments, bonded indebtedness, general taxes, or federal grants:*
   Each public facility with excess capacity has been funded in part by loans, part by self-funding, and another portion by grant. This analysis only included debt and self-funding of projects in calculating the impact fees.

d) *The relative extent to which development activity will contribute to financing the excess capacity of and system improvements for each existing public facility, by such means as user charges, special assessments, or payment from the proceeds of general taxes:*
   Currently, only assessed impact fees are used to finance the excess capacity of system improvements. A credit is calculated for future projects based on an estimated funding plan. The credit analysis may be found in section 6.8 of this analysis and the funding plan may be found in Exhibit B. It is again noted that this impact fee analysis should be reviewed and updated regularly to ensure that the fees remain applicable and fair.

e) *The relative extent to which development activity will contribute to the cost of existing public facilities and system improvements in the future:*
   It is not currently anticipated that development activity will contribute to the cost of existing public facilities and future system improvements outside of the allocable costs of current excess capacity and future projects as discussed within this analysis.

f) *The extent to which the development activity is entitled to a credit against impact fees because the development activity will dedicate system improvements or public facilities that will offset the demand for system improvements, inside or outside the proposed development:*
New development activity should be allowed a credit against impact fees to the extent that the development activity dedicates system improvements or public facilities that offset the demand for system improvements. However, no such dedications have been proposed and none are currently planned. GWSSA must address this issue if and when a developer proposes to dedicate new system improvements to offset the demand for the city to provide those improvements.

g) *Extraordinary costs, if any, in servicing the newly developed properties:*
This factor is not currently applicable to this impact fee analysis.

h) *The time-price differential inherent in fair comparisons of amounts paid at different times:*
The time-price differential of amounts paid at different times related to the impact fee is influenced not only by inflation, but also by the amount that is paid towards the system costs through user fees over time. For this purpose, a user fee credit is recommended in Sections 6.8 if any portion of user fees is used to service debt/bond payments. It is not considered feasible to update the impact fee on an annual basis to account for the time price differential of amounts paid at different times. In order to ensure that the time-price differential associated with impact fees paid at different times is limited, GWSSA should review and update this impact fee analysis at least once every five years.

APPENDIX B:

TOTAL PROJECT FUNDING ESTIMATE

GWSSA Proposed Water Project

Proposed Funding Plan - Total Project

7/18/2016

Total Project Cost		**$**	**5,150,772.91**
Proposed Funding:	% of Project		
Self Participation	0%		-
Rural Development Grant	30%		1,545,231.87
Rural Development Loan	70%		3,605,541.03
Total Project Funding		**$**	**5,150,772.91**
Annual Expenses: (Current)			
Annual O&M Expenses			700,483.00
*See Appendix C for summary of expenses			
Total Operation and Maintenance			700,483.00
Existing Debt Service:			
SVW&SID Water RD, 4.5%, Matures 2040			21,792.00
SVW&SID Water DDW, 5.35%, Matures 2020			122,889.00
SVW&SID Water DDW, 5.35%, matures 2022			13,804.00
Total Existing Debt Service			158,485.00
New Debt Service:			
USDA-RD Loan	2.5% for 40 Yrs; Loan Amount: 3,605,541.03		$143,631.16
10% Debt Reserve			$14,363.12
Total Estimated New Debt Service			$157,994.27
Income Applicable			
Impact Fee Average			$20,931.00
Interest on Debt Reserve			
Total Annual Income Required			**$996,031.27**
Annual Income:			
Total Number of Active ERC's Billed			2,092
Total Annual Income Required			996,031.27
Total Annual Income Required w/ 1.25% debt service coverage			1,075,151.09
Average Monthly Water User Rate		**$**	**42.83**
Average Monthly Total Water User Rate		**$**	**42.83**
Median Adjusted Gross Income (2013 MAGI)			31,141.00
1.75% of MHI Per Month		**$**	**45.41**

APPENDIX C:

ANNUAL USER FEE CREDIT CALCULATIONS

Calculation of User Fee Credit

CALCULATION OF THE AVERAGE YEARS THAT NEW CONNECTIONS WILL PAY USER FEES WITHIN THE 20 YEAR PLANNIND PERIOD				
Year	ERC's	New ERC's	Years Remaining in Planning Period	Total Years (Years Remaining x New ERC's)
2016	2092	0	20	0
2017	2134	42	19	795
2018	2177	43	18	768
2019	2220	44	17	740
2020	2264	44	16	710
2021	2310	45	15	679
2022	2356	46	14	647
2023	2403	47	13	613
2024	2451	48	12	577
2025	2500	49	11	539
2026	2550	50	10	500
2027	2601	51	9	459
2028	2653	52	8	416
2029	2706	53	7	371
2030	2760	54	6	325
2031	2816	55	5	276
2032	2872	56	4	225
2033	2929	57	3	172
2034	2988	59	2	117
2035	3048	60	1	60
2036	3109	61	0	0
		1017	Total Years	8990

	Average Years (Total Years/New ERC's)	8.84

CALCULATION OF THE AVERAGE ANNUAL PORTION OF THE USER FEE PAID TO PLANNED PROJECTS AND THE USER FEE CREDIT			
Year	ERC's	Annual Eligible Project Debt Service	Portion of User Fee to Planned Projects
2016	2092	$ 54,579.85	$ 26.09
2017	2134	$ 54,579.85	$ 25.58
2018	2177	$ 54,579.85	$ 25.08
2019	2220	$ 54,579.85	$ 24.58
2020	2264	$ 54,579.85	$ 24.10
2021	2310	$ 54,579.85	$ 23.63
2022	2356	$ 54,579.85	$ 23.17
2023	2403	$ 54,579.85	$ 22.71
2024	2451	$ 54,579.85	$ 22.27
2025	2500	$ 54,579.85	$ 21.83
2026	2550	$ 54,579.85	$ 21.40
2027	2601	$ 54,579.85	$ 20.98
2028	2653	$ 54,579.85	$ 20.57
2029	2706	$ 54,579.85	$ 20.17
2030	2760	$ 54,579.85	$ 19.77
2031	2816	$ 54,579.85	$ 19.39
2032	2872	$ 54,579.85	$ 19.01
2033	2929	$ 54,579.85	$ 18.63
2034	2988	$ 54,579.85	$ 18.27
2035	3048	$ 54,579.85	$ 17.91
2036	3109	$ 54,579.85	$ 17.56
(A) Average Portion of Annual User Fee to Planned Projects			$21.33
	(B) Average Years of Payment		8.84

User Fee Credit	$188.56

APPENDIX B:

GWSSA SECONDARY WATER IMPACT FEE ANALYSIS

Grand Water & Sewer Service Agency (GWSSA) Secondary Water Impact Fee Analysis

December 2020

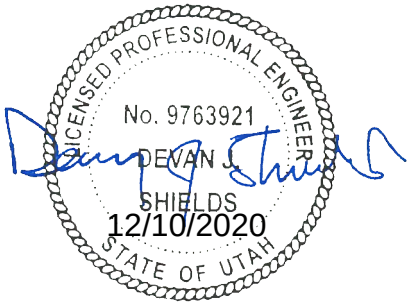


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Table of Contents

CERTIFICATION OF IMPACT FEE ANALYSIS BY CONSULTANT

In accordance with Utah Code Annotated, § 11-36a-306, Devan Shields, P.E., on behalf of Sunrise Engineering, Inc., makes the following certification:

I certify that the attached impact fee analysis:

1. Includes only the costs of public facilities that are:
    a. Allowed under the Impact Fees Act; and
    b. Actually incurred; or
    c. Projected to be incurred or encumbered within six years after the day on which each impact fee is paid;

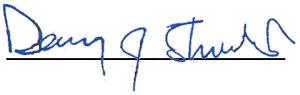
2. Does not include:
    a. Cost for operation and maintenance of public facilities;
    b. Costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents; or
    c. An expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement;

3. Offsets costs with grants or other alternate sources of payment; and

4. Complies in each and every relevant respect with the Impact Fees Act.

Dated: 12/10/2020

Sunrise Engineering, Inc.

By: 

1.0 Executive Summary

The Grand Water & Sewer Service Agency (GWSSA) commissioned this Impact Fee analysis to properly allocate the cost of secondary water system improvements to new development. An impact fee is a fee imposed on new development to allocate the cost of expanding public infrastructure to accommodate the new development.

GWSSA provides secondary water to the unincorporated area of Spanish Valley, south of the City of Moab in Grand County, Utah. The secondary water system serves several agricultural and residential connections. Recent engineering studies have projected an average growth rate of 2 percent per year for the next 20 years.

Because new growth places an added burden on infrastructure and creates the need for new infrastructure, Utah law allows public water systems to charge an impact fee to new development; however, not all costs of system improvements are allocable to future growth. Some system improvements increase the level of service to existing customers. Only that portion of system improvements which is allocable to future growth may be considered in calculating a reasonable impact fee.

GWSSA plans to construct improvements to its secondary water system. If a portion of these system improvements were to increase the level of service for existing customers, only the balance would be allocable to future growth. For the system improvements planned, no increase in the level of service for existing customers is anticipated, so 100 percent of the planned improvements will be allocable to future growth.

After analyzing the proposed improvements, the estimated population growth, and determining an equivalent residential connection, this analysis proposes a $1,818 impact fee per ERC. GWSSA may choose to assess a lower impact fee but may not assess an impact fee higher than that justified by this analysis.

2.0 Introduction

Impact Fees Overview

An impact fee is a fee imposed on new development to “mitigate the impact of the new development on public infrastructure.” Utah Code § 11-36a-102-8(a). Impact fees are subject to the

restrictions within the Fifth Amendment of the U.S. Constitution prohibiting the taking of private property for public use without just compensation. To comply with the U.S. Constitution requires only that there be an "essential nexus" between the fee imposed and the protected interest and that the fee imposed be "roughly proportional" to the burden created by the new development. See Nollan v. California Coastal Commission, 483 U.S. 825 (1987); and see Dolan v. City of Tigard, 512 U.S. 374 (1994).

The levy of impact fees in Utah is governed by the Utah Impact Fees Act codified as Utah Code § 11-36a and requires more specific analysis than that required by the U.S. Constitution. Before imposing an impact fee, a municipality or public service provider such as GWSSA must prepare a written analysis of each impact fee. An impact fee analysis is designed to proportionally allocate to new development that portion of the cost of new facilities that may be required or excess capacity of existing facilities. The impact fee analysis must:

(1) identify the anticipated impact on existing facilities by new development,

(2) identify the anticipated impact on system improvements by anticipated development,

(3) demonstrate how those impacts are reasonably related to the anticipated development,

(4) estimate the proportionate share of costs to be recouped by the impact fee, and

(5) identify how the impact fee was calculated. Id. at § 304.

Entities imposing impact fees must also prepare an impact fee facilities plan unless excepted by statute. An impact fee facilities plan is not required if the municipalities general plan under Utah Code 10-9a-401 contains the elements required by the Impact Fees Act. Id. at § 301. Municipalities serving less than 5,000 people and charging total impact fees of less than $250,000 annually are not required to prepare an impact fee facilities plan. However, they must ensure that the impact fees "are based upon a reasonable plan that otherwise complies with the common law and [the other sections of the Impact Fees Act]." Id. at § 301.

The Utah Supreme Court outlined a set of seven factors which may be considered in determining the reasonableness of an impact fee; these factors are now known as the "Banberry factors." Banberry Dev. Corp. v. S. Jordan City, 631 P.2d 899, 904 (Utah 1981). However, the Court has subsequently noted that these factors "were merely 'means to [an] end.' And the ultimate legal test is whether the impact fees relate to the cost of the benefits conferred on those paying the fees." Tooele Assoc. LTD. V. Tooele City Corp., 247 P.3d 371 (Utah 2011) (quoting Home Builders Ass'n of Utah v. City of American Fork, 973 P.2d 425, at ¶ 20 (Utah 1999). Nonetheless, this impact fee study will review each of the Banberry factors

for the system impact fee. A brief analysis of the Banberry factors for the system is attached to this analysis as Appendix B.

Although the municipality may enact a lower impact fee than that justified by the Impact Fee Analysis, the municipality may not impose a fee higher than that justified in the analysis.

3.0 Purpose of this Impact Fee Analysis

The purpose of this Impact Fee Analysis is to proportionally allocate to new development the cost of public facilities required to provide secondary water within the service area of GWSSA. The current proposed improvements include the construction of a new well. A brief outline of the proposed improvements with estimated cost is included in section 6.7 of this analysis.

This impact fee analysis calculates the highest proportionate share of the cost of the proposed improvements which may be reasonably allocated to new development. GWSSA is a public secondary water service provider serving less than 5,000 people and until recently has charged impact fees averaging less than $250,000 annually. While the agency has been exempt from the requirement to provide an impact fee facilities plan, we recommend that an impact fee facility plan be prepared to identify costs included in impact fees in the future.

4.0 Methodology

The impact fee for secondary water facilities is derived primarily from a plan-based method for future planned development. However, this analysis also considers cost recovery for excess capacity of the current system. The portion of the impact fee analysis which focuses on planned development accounts for estimates of how the system projects will be financed. Should the actual financing of the project change from the estimated portion of grant versus debt, this analysis may require updating to ensure the impact fee assessed does not exceed the proportionate share of development's impact on the new facilities.

Impact fees may not be used for maintenance or repair of the existing system, or for system improvements that increase the level of service to existing system users, unless the improvement provides additional system capacity that directly supports new development. Impact fees may not be used to recoup more than the actual public facility costs incurred or those projected to be incurred "within six years after the day on which each impact fee is paid." Id. at § 306. Also, impact fees must include an offset for grants or other alternative sources of payment and may not include expenses for operation and

maintenance or for overhead unless such overhead expenses are calculated using a methodology consistent with generally accepted cost accounting practices and the standards accepted by the federal Office of Management and Budget for federal grant reimbursement.

Accordingly, this analysis

(1) determines the actual cost incurred or to be incurred within six years of the date of this report,
(2) sets forth existing levels of service,
(3) does not include any general overhead expenditures or costs for operation of the facilities,
(4) offsets for potential grant for proposed projects,
(5) and includes an analysis of the prior completed projects which remain impact fee eligible.

To determine the proportionate share of the cost to new development, this analysis reviews current and past demographic trends and provides a projection for future growth within the GWSSA service area for the next twenty years. Capacity of the current system and excess capacity of each new system component that will be used in this analysis are based upon data provided by GWSSA and estimates calculated by Sunrise Engineering, Inc. Costs of proposed public facilities are calculated based upon an engineer's opinion of probable cost.

Because secondary water usage of different types of connections may vary widely, excess capacity of system components is expressed in terms of equivalent residential connections (ERCs), sometimes referred to as equivalent residential units (ERUs). An ERC is equivalent to what would be used from a typical single-family residence. ERCs are different for each type of connection and are more particularly described section 6.2 of this analysis.

The determination of the existing Level of Service (LOS) of the current systems is based upon observed conditions.

5.0 Demographics and Projections of Future Demand

GWSSA provides secondary water service to a portion of the unincorporated area of Spanish Valley, south of the City of Moab in Grand County, Utah. The system currently provides water to approximately 19 residential connections and 175 agricultural connections.

The most recent culinary water master plan projects a population growth rate of 2 percent per year for the next 20 years. This impact fee analysis relies upon those growth projections and information provided by GWSSA on planned developments within the service area to determine the number of future

ERCs to be served by proposed secondary water system improvements. Table 5.1 shows the population growth projection for the GWSSA service area through 2035.

Table 5.1

Year	Projected Population
2010	3,750
2015	4,140
2020	4,571
2025	5,047
2030	5,573
2035	6,152

GWSSA Population Growth through the Year 2035

6.0 Secondary Water Impact Fee Analysis

The total maximum reasonable impact fee for secondary water is a combination of the amount allocable for future projects and the amount of excess capacity of the current system allocable to new growth. GWSSA has not completed secondary water projects with remaining excess capacity that need to be considered in this analysis; however, GWSSA has planned future projects to account for projected growth. This impact fee analysis will first determine what amount, if any, of the cost of the future projects may be allocable to future growth. Future growth for the next 20 years is converted to growth in equivalent residential connections (ERCs). Then the amount allocated to future growth can be divided by the number of new ERCs served by the improvements to determine the maximum reasonable impact fee for those projects.

It is recommended that this impact fee analysis be reviewed and updated every five years at a minimum. Impact fee calculations may also include the proportionate costs of existing facilities and components that currently have excess capacity.

The existing capacity of the current system that will be used in this Impact Fee Analysis will be based on the data provided by GWSSA's record of previous projects. Excess capacity of system components will be expressed in terms of equivalent residential connections (ERCs). The determination of the existing Level of Service (LOS) of the current distribution system is based on observations from the past several years of operation.

6.1 Current System

According to the data provided by GWSSA, there are currently 194 connections on the secondary water system. This includes 19 residential connections and 175 agricultural connections.

Sources for the secondary water system include Ken's Lake, with a current storage capacity of 2820 acre-feet, and two wells known as the Beeman and Corbin wells. The potential service area for the irrigation system, without installation of booster pump stations, is limited to the area northwest of Ken's Lake below an elevation of approximately 4,930 ft. This provides approximately 40 psi subject to the lake level.

The total available source capacity of the system is dependent on the amount of inflow to Ken's Lake during a year and the hold over storage from the previous year. In 2018 during a drought, Ken's Lake provided 854 acre-feet of water, Beeman Well provided 485 acre-feet of water, and Corbin Well provided 162 acre-feet of water. In an average year Ken's Lake provides closer to 2,300 acre-feet of water.

The system is at capacity when there is no more available water in the lake. Typically, the system uses all of the available lake water on an annual basis which shows that the existing demand is equal to the available source. New growth on the system will need increased source capacity to cover increased demand. The current secondary water system is sufficient to support the existing connections. Therefore, the projects that have been proposed will be 100 percent allocable to future growth, but no excess capacity from existing sources will be allocated to future connections.

According to GWSSA the amount of water used by agricultural connections is limited and is not anticipated to increase, so all future growth on the system will come from adding new residential connections.

6.2 Calculation of ERC

One ERC for the secondary water system is defined as the amount of water used by an average residential connection. For this impact fee analysis an ERC is based on an average lot size of 1/4 acre and an average peak monthly usage of approximately 54,000 gallons. ERCs are factored into calculations for impact fees, user rates, and other analyses as required for design purposes.

6.3 Projected Demand

A number of future developments are anticipated to bring additional connections to the GWSSA secondary water system over the 20-year planning period. Based on GWSSA's growth projections and a

review of the future developments that are planned for construction it is anticipated that as many as 600 new secondary water ERCs could be added to the system by the end of the planning period. Planned projects should therefore be designed to accommodate up to 600 new ERCs.

6.4 Excess Capacity

The GWSSA secondary water system is sufficient to serve the current connections; however, the system is currently at capacity as the annual source requirement is equal to the available source. The system does not have additional excess capacity. GWSSA does not have secondary water sources with excess capacity that could be assessed to new connections.

6.5 New Near-term Projects

GWSSA plans to commission a secondary water project with an estimated cost of $864,000 to be completed within the next six years. This project includes drilling a new well to increase the source capacity of the system. To serve the anticipated growth during peak month demands, the target production capacity of this well should be about 750 gpm. An engineer's opinion of probable costs for this project is included in Appendix C.

The total of project costs that will occur within the next six years is $870,400 including costs for impact fee analysis. Table 6.7.1 outlines the impact fee eligible costs. This total is 100 percent allocable to new growth.

6.6 Allocable Costs

As stated in section 6.5 above, 100 percent of the proposed project will serve future growth. Because a portion of the cost of the project will be financed by a loan, the interest for the project is also impact fee eligible. Assuming a 20-year loan at 3.0 percent interest, the total anticipated cost for the new well is $1,215,839.

This yields a total of $1,222,239 eligible for impact fee assessment. The impact fee eligibility and cost per ERC per project calculations are shown in Table 6.7.1.

6.7 Impact Fee Calculation

The impact fee calculation, before considering any credits, is calculated simply by dividing the total allocable cost by the total number of ERCs served by the project.

Table 6.7.1 shows the planned projects, the percent allocable to future growth, the number of ERCs served by the project, the cost of the improvements, principal and interest totals for the

improvements, and the impact fee per ERC for each project. The total impact fee for planned projects is $2,037.07.

The maximum impact fee that GWSSA may reasonably assess to new ERCs, before considering credits, is the total of any past project eligible cost per ERC plus the total of the future project eligible cost per ERC. Because there are no eligible costs for past projects in this case, the maximum impact fee before considering credits is $2,037.07 per ERC for new connections to the secondary water system.

Table 6.7.1

RECOMMENDED IMPROVEMENTS - IMPACT FEE ELIGIBLE	Cost	Principal + Interest	% Allocable to New Growth	Eligible IF Cost	ERC's Served	$/ERC
New Irrigation Well	$864,000	$1,215,839.41	100%	$1,215,839.41	600	$2,026.40
Impact Fee Analysis	$6,400	$6,400	100%	$6,400	600	$10.67
TOTAL				$1,222,239.41		$2,037.07

6.8 Credits

Because a portion of future monthly usage rates may be used to service debt payments for proposed infrastructure, a reasonable impact fee may account for the portion paid by new users to debt service payments. To calculate the per-ERC credit requires a calculation of average contribution per ERC to the debt service payments over the course of the planning period.

For the planned project, GWSSA will pursue loans to fund the project. This analysis estimates that the project will not have any grant funding. The project will be financed through a new loan with projected annual debt service payments of $60,791.97 (not including debt reserve) over 20 years. As new ERCs are added to the system, the portion of user fees allocated to debt-service payments will decrease. On average, new ERCs will contribute to debt-service payments for 9.10 years.

To calculate a reasonable credit this analysis looks at the total impact fee eligible cost that may be offset by a credit for the portion of annual service payments used for the annual debt service of $60,791.97. This analysis then divides the impact fee eligible portion by the number of ERCs served for each year through 2040. The average portion of user fees being used for debt service on impact fee eligible projects over the life of the loan is $24.07 annually. The credit is then calculated by multiplying the average portion of annual user fees by the average years an ERC will pay user fees. Thus, $24.07 x 9.10 years = a credit of $219.07 per ERC. The calculation for this credit is detailed further in Appendix D.

6.9 Recommended Secondary water Impact Fee

The total impact fee allowable for secondary water is the sum of the allocable costs for excess system capacity and new projects less any credits. In this case, there are no allocable costs for excess capacity. The recommended secondary water impact fee is outlined in Tables 6.9.1. For the GWSSA service area, the total impact fee equals $2,037.07 less the credit of $219.07 for a recommended impact fee of $2,181.23

Table 6.9.1

Secondary Water Impact Fee Calculation	
Past Improvement Impact Fee	$0.00
Planned Projects Impact Fee	$2,037.07
Annual Service Payments Credit	-$219.07
Secondary Water Impact Fee	$1,818.00

7.0 Conclusion & Recommendations

Sunrise Engineering recommends the maximum reasonable impact fees for GWSSA's secondary water system be no more than $1,818 for new connections. Before enacting the actual impact fees, GWSSA should take into consideration the relationship between impact fees and future growth because an impact fee can influence the growth in a community.

The impact fee that is adopted based on this impact fee analysis should be charged to new connections until any of the following events occur:

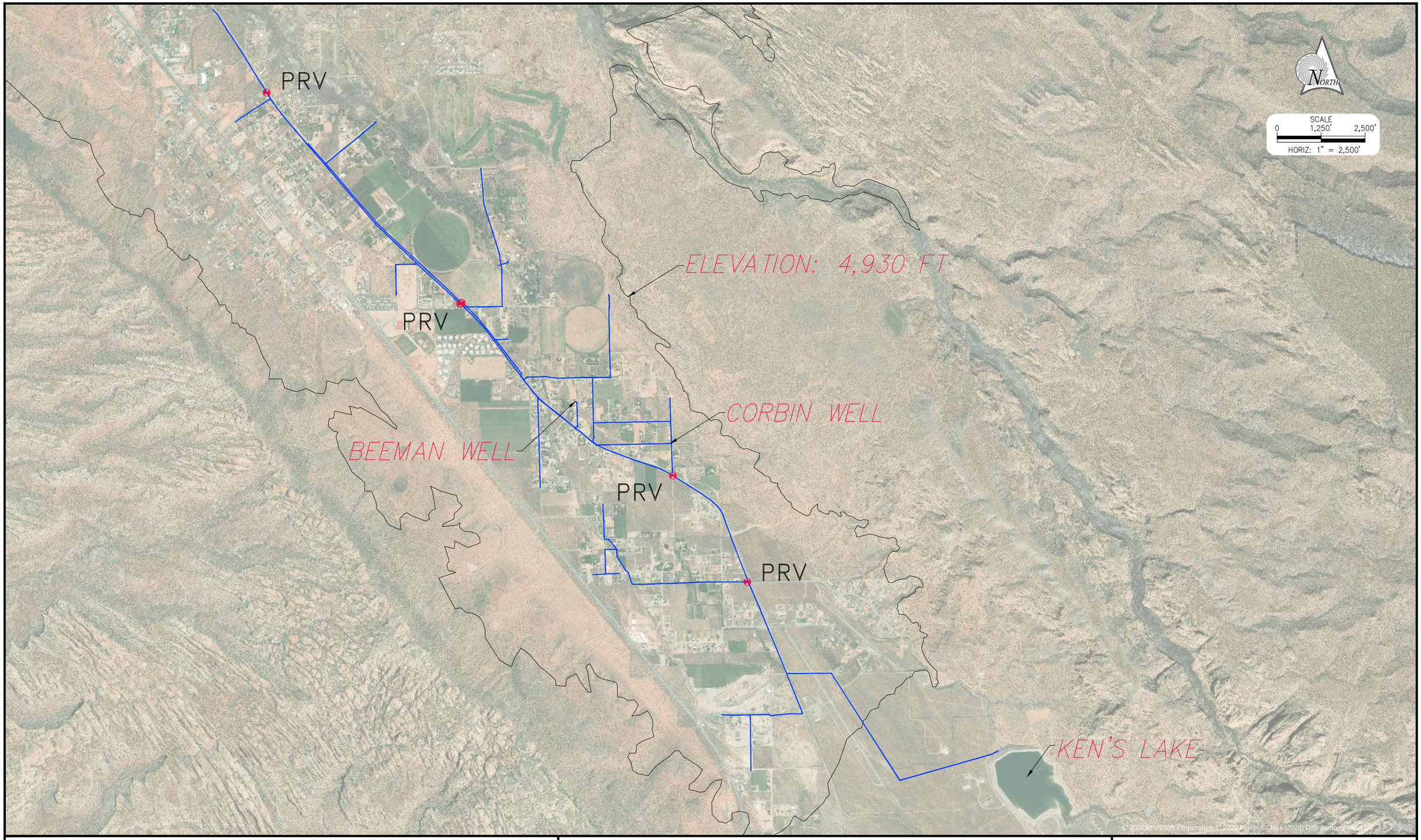
1. New system improvements (other than those included in this analysis) are anticipated within six years, therefore becoming eligible for inclusion in the impact fee calculation;
2. Any calculated excess capacity of the existing system facilities included in this analysis is expended, at which time they will no longer be eligible for inclusion in the impact fee calculation; or
3. The impact fee analysis is otherwise reviewed and updated. It is recommended that it be updated every five years at a minimum.

GWSSA has experienced steady growth over the past two decades and continual growth is expected. This impact fee analysis will help the Agency apportion the costs of system improvements and

expansion to the new growth that the improvements will serve. Additionally, as the population served by GWSSA grows, GWSSA should be aware that in the future it may be required to complete a facilities plan to accompany future impact fee analyses.

APPENDIX A:

EXHIBIT



GWSSA SECONDARY WATER

SYSTEM OVERVIEW

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APPENDIX B:

ANALYSIS OF BANBERRY FACTORS

Banberry Factors Analysis

Utah Code Ann. 11-36a-304(2) requires that the following factors, also known as the Banberry Factors be considered as applicable in order to verify that the proportionate share of the costs of public facilities are reasonably related to the new development activity.

a) *The cost of each existing public facility that has excess capacity to serve the anticipated development resulting from the new development activity:*
   The cost of each existing public facility that has excess capacity to serve the anticipated development resulting from new development activity is discussed in Section 6.5 for GWSSA's secondary water system.

b) *The cost of system improvements for each public facility:*
   The costs of projected system improvements for the GWSSA's secondary water system are discussed in the same section as the cost of facilities with excess capacity.

c) *Other than impact fees, the manner of financing for each public facility, such as user charges, special assessments, bonded indebtedness, general taxes, or federal grants:*
   Each public facility with excess capacity has been funded in part by loans, part by self-funding, and another portion by grant. This analysis only included debt for past projects and debt and self-funding for proposed projects in calculating the impact fees.

d) *The relative extent to which development activity will contribute to financing the excess capacity of and system improvements for each existing public facility, by such means as user charges, special assessments, or payment from the proceeds of general taxes:*
   Currently, only assessed impact fees are used to finance the excess capacity of system improvements. A credit is calculated for future projects based on an estimated funding plan. The credit analysis may be found in section 6.8 of this analysis and the funding plan assumes 10% grant and a 20-year loan at 3.0 percent interest. It is again noted that this impact fee analysis should be reviewed and updated regularly to ensure that the fees remain applicable and fair.

e) *The relative extent to which development activity will contribute to the cost of existing public facilities and system improvements in the future:*
   It is not currently anticipated that development activity will contribute to the cost of existing public facilities and future system improvements outside of the allocable costs of current excess capacity and future projects as discussed within this analysis.

f) *The extent to which the development activity is entitled to a credit against impact fees because the development activity will dedicate system improvements or public facilities that will offset the demand for system improvements, inside or outside the proposed development:*
New development activity should be allowed a credit against impact fees to the extent that the development activity dedicates system improvements or public facilities that offset the demand for system improvements. However, no such dedications have been proposed and none are currently planned. GWSSA must address this issue if and when a developer proposes to dedicate new system improvements to offset the demand for the agency to provide those improvements.

g) *Extraordinary costs, if any, in servicing the newly developed properties:*
This factor is not currently applicable to this impact fee analysis.

h) *The time-price differential inherent in fair comparisons of amounts paid at different times:*
The time-price differential of amounts paid at different times related to the impact fee is influenced not only by inflation, but also by the amount that is paid towards the system costs through user fees over time. For this purpose, a user fee credit is recommended in Sections 6.8 if any portion of user fees is used to service debt/bond payments. It is not considered feasible to update the impact fee on an annual basis to account for the time price differential of amounts paid at different times. In order to ensure that the time-price differential associated with impact fees paid at different times is limited, GWSSA should review and update this impact fee analysis at least once every five years.

APPENDIX C:

ENGINEER'S OPINION OF PROBABLE COSTS

SUNRISE ENGINEERING, INC.
CONSULTING ENGINEERS AND SURVEYORS

Opinion of Probable Costs

Project: GWSSA Secondary Water Improvements
New Irrigation Well Development

By: JH
Date: Oct-20

New Irrigation Well Development

ITEM NO.	ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
	WELL DRILLING				
1	Well Driller Mobilization	1	LS	$ 12,000.00	$ 12,000
2	Construct Well (24" Diameter, 300' Deep)	1	LS	$ 238,000.00	$ 238,000
	Subtotal Well Drilling				**$ 250,000**
	WELL BUILDING				
3	Mobilization	1	LS	$ 17,000.00	$ 17,000
4	Well House	1	LS	$ 40,000.00	$ 40,000
5	Earth Work for Well House	1	LS	$ 10,000.00	$ 10,000
6	Well House Electrical & HVAC	1	LS	$ 20,000.00	$ 20,000
7	Well House Instrumentation & Control	1	LS	$ 15,000.00	$ 15,000
8	Equip Well	1	LS	$ 80,000.00	$ 80,000
9	12" PVC Water Line - Transmission to System (Estimated Distance)	2,000	Ln. Ft.	$ 36.00	$ 72,000
10	Pipe Bedding	2,000	Ln. Ft.	$ 2.00	$ 4,000
11	12" Gate Valves	3	EA	$ 3,600.00	$ 10,800
12	Property Acquisition, Rights of Way/Easement Purchase	1	LS	$ 30,000.00	$ 30,000
13	New Power Service to Well (Estimated)	1	Est	$ 50,000.00	$ 50,000
	Subtotal Well Building				**$ 348,800**
	Construction Subtotal				**$ 598,800**
	Contingency		20%		$ 120,000
	Total Construction				**$ 718,800**
	INCIDENTALS & PROFESSIONAL SERVICES				
14	Incidentals & Professional Services		20%	(of Construction)	$ 145,200
	Incidentals & Professional Services Total				**$ 145,200**
	TOTAL PROJECT COST				**$ 864,000**

In providing opinions of probable construction cost, the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials., or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as to the accuracy of such opinions compared to bid or actual costs.

APPENDIX D:

ANNUAL USER FEE CREDIT CALCULATIONS

CALCULATION OF THE AVERAGE YEARS THAT NEW CONNECTIONS WILL PAY USER FEES WITHIN THE 20 YEAR PLANNING PERIOD				
Year	**Est. ERCs**	**New ERCs**	**Years Remaining in Planning Period**	**Total Years (Years Remaining x New ERCs)**
2020	**2234**	0	20	0
2021	2261	27	19	508
2022	2288	27	18	487
2023	2315	27	17	465
2024	2343	28	16	443
2025	2371	28	15	421
2026	2399	28	14	397
2027	2428	29	13	373
2028	2457	29	12	349
2029	2486	29	11	323
2030	2516	30	10	298
2031	2546	30	9	271
2032	2577	30	8	244
2033	2608	31	7	216
2034	2639	31	6	187
2035	2670	32	5	158
2036	2702	32	4	128
2037	2735	32	3	97
2038	2767	33	2	65
2039	2800	33	1	33
2040	2834	34	0	0
		600	**Total Years**	**5463**

	Average Years (Total Years/New ERCs)	**9.10**

CALCULATION OF THE AVERAGE ANNUAL PORTION OF THE USER FEE PAID TO PLANNED PROJECTS AND THE USER FEE CREDIT			
Year	**Est. ERCs**	**Annual Eligible Project Debt Service**	**Portion of User Fee to Planned Projects**
2020	**2234**	**$ 60,791.97**	**$ 27.21**
2021	2261	**$ 60,791.97**	**$ 26.89**
2022	2288	**$ 60,791.97**	**$ 26.57**
2023	2315	**$ 60,791.97**	**$ 26.26**
2024	2343	**$ 60,791.97**	**$ 25.95**
2025	2371	**$ 60,791.97**	**$ 25.64**
2026	2399	**$ 60,791.97**	**$ 25.34**
2027	2428	**$ 60,791.97**	**$ 25.04**
2028	2457	**$ 60,791.97**	**$ 24.74**
2029	2486	**$ 60,791.97**	**$ 24.45**
2030	2516	**$ 60,791.97**	**$ 24.16**
2031	2546	**$ 60,791.97**	**$ 23.87**
2032	2577	**$ 60,791.97**	**$ 23.59**
2033	2608	**$ 60,791.97**	**$ 23.31**
2034	2639	**$ 60,791.97**	**$ 23.04**
2035	2670	**$ 60,791.97**	**$ 22.77**
2036	2702	**$ 60,791.97**	**$ 22.50**
2037	2735	**$ 60,791.97**	**$ 22.23**
2038	2767	**$ 60,791.97**	**$ 21.97**
2039	2800	**$ 60,791.97**	**$ 21.71**
2040	2834	**$ 60,791.97**	**$ 21.45**
(A) Average Portion of Annual User Fee to Planned Projects			$24.07
	(B) Average Years of Payment		**9.10**

User Fee Credit	**$219.07**

APPENDIX C:

GWSSA SANITARY SEWER IMPACT FEE ANALYSIS

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GRAND WATER & SEWER SERVICE AGENCY (GWSSA)

SANITARY SEWER

IMPACT FEE ANALYSIS

MARCH 21, 2018

Prepared by:

SUNRISE ENGINEERING

25 EAST 500 NORTH
FILLMORE, UTAH 84631
800-560-6151

Project Team:

Devan Shields, P.E.

Robert Worley, P.E.

LICENSED PROFESSIONAL ENGINEER
No. 9763921
DEVAN J. SHIELDS
STATE OF UTAH

Devan Shields, P.E. 03/21/2018
Project Engineer

Table of Contents

CERTIFICATION OF IMPACT FEE ANALYSIS BY CONSULTANT

In accordance with Utah Code Annotated, § 11-36a-306, Devan Shields, P.E., on behalf of Sunrise Engineering, Inc., makes the following certification:

I certify that the attached impact fee analysis:

1. Includes only the costs of public facilities that are:
    a. Allowed under the Impact Fees Act; and
    b. Actually incurred; or
    c. Projected to be incurred or encumbered within six years after the day on which each impact fee is paid;

2. Does not include:
    a. Cost for operation and maintenance of public facilities;
    b. Costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents; or
    c. An expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement;

3. Offsets costs with grants or other alternate sources of payment; and

4. Complies in each and every relevant respect with the Impact Fees Act.

Dated: 3/21/2018

Sunrise Engineering, Inc.

By: _____

1.0 Executive Summary

The Grand Water & Sewer Service Agency (GWSSA) commissioned this Impact Fee analysis to properly allocate the cost of sanitary sewer system improvements to new development. An impact fee is a fee imposed on new development to allocate the cost of expanding public infrastructure to accommodate the new development.

GWSSA provides sanitary sewer collection service to the unincorporated area of Spanish Valley, south of the City of Moab in Grand County, Utah. The sanitary sewer system serves several commercial, municipal, and industrial connections, and provides sanitary sewer service to approximately 4,000 people. Since 2008, the number of GWSSA residential water connections has increased on average 1.58 percent per year; commercial connections have increased 1.18 percent per year on average over the same time period. Recent engineering studies have projected an average increase of 2 percent per year for the next 20 years based on planned developments which will spur more rapid growth.

Because new growth places an added burden on infrastructure and creates the need for new infrastructure, Utah law allows public sewer systems to charge an impact fee to new development.

Not all costs of system improvements are allocable to future growth. Some system improvements increase the level of service to existing customers. Only that portion of system improvements which is allocable to future growth may be considered in calculating a reasonable impact fee. Impact fees are assessed per Equivalent Residential Connection or ERC.

GWSSA plans to construct improvements to its sanitary sewer system. If a portion of these system improvements would increase the level of service for existing customers, only the balance is allocable to future growth. For the system improvements planned, no increase in the level of service for existing customers is anticipated, so 100 percent of the planned improvements will be allocable to future growth.

After analyzing the projects, the estimated population growth, and determining an equivalent residential connection, this analysis proposes a $2,039 impact fee per ERC for connections to the system in the GWSSA service area and a $1,755 impact fee per ERC for connections in San Juan Spanish Valley Special Service District service area. GWSSA may choose to assess a lower impact fee, but may not assess an impact fee higher than that justified by this analysis.

Additional impact fees are required by Moab City for all new connections served by GWSSA. New connections in the San Juan Spanish Valley Special Service District may also be required to pay impact fees assessed by SJSVSSD.

2.0 Introduction

Impact Fees Overview

An impact fee is a fee imposed on new development to "mitigate the impact of the new development on public infrastructure." Utah Code § 11-36a-102-8(a). Impact fees are subject to the restrictions within the Fifth Amendment of the U.S. Constitution prohibiting the taking of private property for public use without just compensation. To comply with the U.S. Constitution requires only that there be an "essential nexus" between the fee imposed and the protected interest and that the fee imposed be "roughly proportional" to the burden created by the new development. See *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987); and see *Dolan v. City of Tigard*, 512 U.S. 374 (1994).

The levy of impact fees in Utah is governed by the Utah Impact Fees Act codified as Utah Code § 11-36a and requires more specific analysis than that required by the U.S. Constitution. Before imposing an impact fee, a municipality or public service provider such as GWSSA must prepare a written analysis of each impact fee. An impact fee analysis is designed to proportionally allocate to new development that portion of the cost of new facilities that may be required or excess capacity of existing facilities. The impact fee analysis must:

(1) identify the anticipated impact on existing facilities by new development,

(2) identify the anticipated impact on system improvements by anticipated development,

(3) demonstrate how those impacts are reasonably related to the anticipated development,

(4) estimate the proportionate share of costs to be recouped by the impact fee, and

(5) identify how the impact fee was calculated. Id. at § 304.

Entities imposing impact fees must also prepare an impact fee facilities plan unless excepted by statute. An impact fee facilities plan is not required if the municipalities general plan under Utah Code 10-9a-401 contains the elements required by the Impact Fees Act. Id. at § 301. Municipalities serving less than 5,000 people and charging total impact fees of less than $250,000 annually are not required to prepare an impact fee facilities plan. However, they must ensure that the impact fees "are based upon a reasonable plan that otherwise complies with the common law and [the other sections of the Impact Fees Act]." Id. at § 301.

The Utah Supreme Court outlined a set of seven factors which may be considered in determining the reasonableness of an impact fee; these factors are now known as the "Banberry factors." Banberry Dev. Corp. v. S. Jordan City, 631 P.2d 899, 904 (Utah 1981). However, the Court has subsequently noted that these factors "were merely 'means to [an] end.' And the ultimate legal test is whether the impact

fees relate to the cost of the benefits conferred on those paying the fees." Tooele Assoc. LTD. V. Tooele City Corp., 247 P.3d 371 (Utah 2011)(quoting Home Builders Ass'n of Utah v. City of American Fork, 973 P.2d 425, at ¶ 20 (Utah 1999). Nonetheless, this impact fee study will review each of the Banberry factors for the system impact fee. A brief analysis of the Banberry factors for the system is attached to this analysis as Appendix B.

Although the municipality may enact a lower impact fee than that justified by the Impact Fee Analysis, the municipality may not impose a fee higher than that justified in the analysis.

3.0 Purpose of this Impact Fee Analysis

The purpose of this Impact Fee Analysis is to proportionally allocate to new development the cost of public facilities required to provide sanitary sewer service within the service area of GWSSA. Those system improvements include construction of new sewer lines. An outline of the proposed improvements with estimated cost is included in section 6.7 of this analysis.

This impact fee analysis calculates the highest proportionate share of the cost of these public facilities which may be reasonably allocated to new development. GWSSA is a public sanitary sewer service provider serving less than 5,000 people and charges impact fees averaging less than $250,000 annually; thus, it is exempt from the requirement to provide an impact fee facilities plan.

In conjunction with calculating the reasonable impact fee for the future projects, this analysis will review and update the current impact fees and determine a total maximum reasonable impact fee for GWSSA's sanitary sewer system.

4.0 Methodology

The impact fee for sanitary sewer facilities is derived primarily from a plan-based method for future planned development. However, this analysis also considers cost recovery for excess capacity of the current system. The portion of the impact fee analysis which focuses on planned development accounts for estimates of how the system projects will be financed. Should the actual financing of the project change from the estimated portion of grant versus debt, this analysis may require updating to ensure the impact fee assessed does not exceed the proportionate share of development's impact on the new facilities.

Impact fees may not be used for maintenance or repair of the existing system, or for system improvements that increase the level of service to existing system users, unless the improvement provides

additional system capacity that directly supports new development. Impact fees may not be used to recoup more than the actual public facility costs incurred or those projected to be incurred "within six years after the day on which each impact fee is paid." Id. at § 306. Also, impact fees must include an offset for grants or other alternative sources of payment and may not include expenses for operation and maintenance or for overhead unless such overhead expenses are calculated using a methodology consistent with generally accepted cost accounting practices and the standards accepted by the federal Office of Management and Budget for federal grant reimbursement. Id.

Accordingly, this analysis

(1) determines the actual cost incurred or to be incurred within six years of the date of this report,
(2) sets forth existing levels of service,
(3) does not include any general overhead expenditures or costs for operation of the facilities,
(4) offsets for potential grant for proposed projects,
(5) and includes an analysis of the prior completed projects which remain impact fee eligible.

To determine the proportionate share of the cost to new development, this analysis reviews current and past demographic trends and provides a projection for future growth within the GWSSA service area for the next twenty years. Capacity of the current system and excess capacity of each new system component that will be used in this analysis are based upon data provided by GWSSA, a model analysis of the existing and proposed sewer collection system, and estimates calculated by Sunrise Engineering, Inc. Costs of the proposed public facilities are calculated based upon an engineer's opinion of probable cost.

Because sanitary sewer loads of multi-family, industrial, and commercial connections vary widely, excess capacity of system components is expressed in terms of equivalent residential connections (ERCs), sometimes referred to as estimated residential units (ERUs). An ERC is equivalent to what would be collected from a typical single-family residence. ERCs are different for each type of public facility and are more particularly described section 6.2 of this analysis.

The determination of the existing Level of Service (LOS) of the current systems is based upon previous project design capacity as well as model analysis results.

5.0 Demographics and Projections of Future Demand

GWSSA provides sanitary sewer service to the unincorporated area of Spanish Valley, south of the City of Moab in Grand County, Utah. The system collects wastewater from approximately 4,000 people, in addition to several commercial, municipal, and industrial entities.

The most recent culinary water master plan and concurrent wastewater feasibility study project a population growth rate of 2 percent per year for the next 20 years. This impact fee analysis relies upon those growth projections to determine the number of future ERCs to be served by future sanitary sewer system improvements. Table 5.1 shows the population growth projection for the GWSSA service area through 2035.

Table 5.1

Year	Projected Population
2010	3,750
2015	4,140
2020	4,571
2025	5,047
2030	5,572
2035	6,152

GWSSA Population Growth through the Year 2035

6.0 Sanitary Sewer Impact Fee Analysis

GWSSA has completed sanitary sewer projects with remaining excess capacity that will be considered in this analysis. GWSSA also has planned future projects to account for projected growth. This impact fee analysis will first determine what amount, if any, of the cost of the future projects may be allocable to future growth. Future growth for the next 20 years is converted to growth in equivalent residential connections (ERCs). Then the amount allocated to future growth can be divided by the number of new ERCs served by the improvements to determine the maximum reasonable impact fee for those projects. This analysis will also review excess capacity related to prior sanitary sewer projects. The total maximum reasonable impact fee for sanitary sewer is a combination of the amount allocable for future projects and the amount of excess capacity of the current system allocable to new growth.

It is recommended that this impact fee analysis be reviewed and updated every five years at a minimum. Impact fee calculations may also include the proportionate costs of existing facilities and components that currently have excess capacity.

The existing capacity of the current system that will be used in this Impact Fee Analysis will be based on the data provided by GWSSA's record of previous projects and associated project financing, past impact fee analyses, and a model analysis conducted in conjunction with this Impact Fee Analysis. Excess capacity of system components will be expressed in terms of equivalent residential connections (ERCs). The determination of the existing Level of Service (LOS) of the current distribution system will be based on the design capacity the current system.

6.1 Current System

As of this year reporting, GWSSA's current sanitary sewer system serves or is committed to serve a total of 2,758 ERCs. The Agency completed projects from 1996 to 2000 which added capacity. The current collection system is sufficient to support the current population. Therefore, the projects that have been proposed will be 100 percent allocable to future growth.

GWSSA currently charges an impact fee of $1,952.67 per ERC for sanitary sewer.

6.2 Calculation of ERC

One ERC for the sanitary sewer system is defined as the amount of wastewater collected from an average residential connection. Because an ERC relates to the amount of wastewater collected from the average residential connection, use of this term allows commercial, institutional, or other large water users to be equated to a residential connection. ERCs are factored into calculations for impact fees, user rates, and other analyses as required for design purposes.

For this impact fee analysis, equating typical sanitary sewer loads from various types of sewer services to a number of residential connections is based on water use analysis from GWSSA's service area and other locations in the state. Results from these analyses are published in the Moab City Sewer Impact Fee Facilities Plan and Impact Fee Analysis (2017). Exhibit 1 in Appendix A is derived from data provided in that document. Although the table in Exhibit 1 covers most common kinds of developments, it is not intended to cover every instance that may arise. The table in Exhibit 1 will be used as a guideline by the GWSSA manager to determine the number of ERCs a proposed connection will be assigned.

6.3 Projected Demand

The number of sanitary sewer ERCs expected at the end of the planning period can be calculated using the compound interest formula and inserting the projected growth rate, the existing number of sanitary sewer ERCs, and the 20 year planning period for sanitary sewer improvements.

The projected number of ERCs for the 20 year planning period is calculated using the compound interest formula as follows: $F = ERCs \times (1 + rate)^{20\ years}$ where F is the projected number of ERCs and the rate of growth is 2 percent per year.

$$\text{Total ERCs:} \quad F = 2{,}758\ ERCs \times (1 + 0.02)^{20} = 4{,}098\ ERCs$$

At the end of the planning period, GWSSA is expected to have 4,098 ERCs; thus, new growth within the 20-year period is the difference between the 20-year projection and current ERCs, or 1,340 ERCs. Planned projects should therefore be designed to accommodate up to 1,340 new ERCs over the planning period.

6.4 Excess Capacity

Sanitary sewer projects completed from 1996 to 2000 had excess capacity allocable to future growth. These projects included the construction of new lines and upsizing of existing lines, along with construction of the three metering stations that record flows from the GWSSA collection system to the City of Moab system. These projects had excess capacity at the time of construction and continue to have excess capacity allocated to future growth.

At the time of construction, the GWSSA system had adequate capacity for existing sanitary sewer loads. Based on the analysis in the 2011 impact fee update, those improvements were designed to accommodate 2,941 ERCs, an increase of 911 ERCs over the 2011 estimate of 2,030 ERCs. As this exceeds the current number of ERCs the GWSSA system is committed to serving, a portion the cost of the improvements remains impact fee eligible. The cost allocation of these projects to ERCs is calculated in section 6.6 of this analysis.

6.5 New Near-term Projects

GWSSA plans to commission sanitary sewer projects at a total estimated cost of $2,086,300 to be completed within the next six years. Additional projects will be required to meet the projected sanitary sewer loads through the 20-year planning period. Table 6.7.1 outlines the projects to be completed within

the next six years. The total of the projects to be commissioned within the next six years is $2,086,300, which is 100 percent allocable to new growth.

The first proposed project centers on increasing system capacity primarily by further optimizing the flow distribution within the system. By connecting the lines west of the highway, capacity of the system is increased by diverting existing flows from the primary collection sub-basin to a sub-basin with more existing capacity. This will also provide for a more balanced increase in sewer loads between these sub-basins as development continues. The second proposed project extends the service area southward, allowing for new sanitary sewer connections in developments along Highway 191 as far south as San Juan County. A comprehensive list of proposed new projects, allocable costs, ERCs served, and cost per ERC is included in Table 6.7.1

6.6 Allocable Costs

Only costs allocable to future growth may be included in an impact fee. As stated in section 6.4, a portion of the prior completed projects remains impact fee eligible due to remaining capacity. The total impact fee eligible cost of these past improvements is $256,932.40. This cost is allocable to future growth. With the sub-basin changes considered, the remaining capacity of the improvements is 438 ERCs.

As stated in section 6.5 above, 100 percent of the proposed projects will serve future growth. Thus, the cost of the projects, along with anticipated financing costs, is 100 percent allocable to future growth.

The first two segments of sewer main extensions are system improvements that will benefit growth throughout the system. The projected cost of these projects is $980,017. Assuming 10 percent grant and a 20-year loan at 3.0 percent interest, total anticipated cost for the project is $1,185,706. Based on model analysis results, these proposed improvements will provide capacity for 896 additional ERCs.

The third segment of sewer main extensions, which will extend from Lemon Lane south along Highway 191 to the San Juan County line, has a projected cost of $1,106,283. The immediate need for this line is due to the connection of San Juan Spanish Valley Special Service District (SJSVSSD) to the GWSSA system. Although SJVSSSD anticipates that an 8-inch main would suit their needs, GWSSA is requiring installation of a 10-inch main so that additional growth west of Highway 191 may be served off this line. Because much of the proposed line's capacity will be used by SJSVSSD, only that portion of the line's capacity projected to be available for growth within GWSSA's service area is characterized as a system improvement and impact fee eligible.

Of 1,416 ERCs this line is projected to serve, 900 are projected to be within SJSVSSD's service area, leaving 516 ERCs of capacity for growth within GWSSA's service area. Because of this, 36.4% of the projected cost of this line is impact fee eligible, with the rest of the cost attributable to SJSVSSD.

This line will be constructed by SJSVSSD, with GWSSA paying 36.4% of the projected cost, or $403,137, from impact fees. As this cost will be paid up front, no grant or loan financing is anticipated for GWSSA's portion of this project. Because SJSVSSD will be paying for 63.6% of the projected cost of this line directly, the portion of the impact fees attributable to this segment will not be assessed to SJSVSSD connections.

This yields a total of $1,845,775 of the planned and prior projects eligible for impact fee assessment. The impact fee eligibility and cost per ERC per project calculations are shown in Table 6.7.2.

6.7 Impact Fee Calculation

The impact fee calculation, before considering any credits, is calculated simply by dividing the total allocable cost by the total number of ERCs served by the project.

For the past projects the total cost is $1,279,046. The number of future ERCs served by the projects is calculated as the difference in the design capacity of 2,941 ERCs and the current number of ERCs 2,758, or 183 ERCs (2,941 - 2,758 = 183) plus the 255 ERCs to be moved from sub-basin 1 to sub-basin 3, or 438 ERCs (183 + 255 = 438). The percentage allocable to new growth for the projects is calculated as the ratio of remaining capacity for new ERCs to the design capacity stated in the 2011 analysis (183 / 911 = 20.1%). Based on this analysis, the total allocable cost of these past improvements per ERC is $586.60, as shown in Table 6.7.1.

Table 6.7.1

Past Improvements with Excess Capacity	Cost	% Allocable to New Growth	$ Allocable to New Growth	Current Excess Capacity	Cost per ERC
1997 CIB Bond	$154,190	20.1%	$30,973.40	438	$70.72
1996 RD Bond	$830,856	20.1%	$166,900.82	438	$381.05
DWQ Bond	$294,000	20.1%	$59,058.18	438	134.84
TOTAL	$1,279,046				$586.60

For planned projects, the calculation is the same except that more of the project costs are allocable to new growth and are impact fee eligible.

Table 6.7.2 shows the planned projects, the percent allocable to future growth, the number of ERCs served by the project, the cost of the improvements, grant portion for the improvements, principal and interest totals for the improvements, and the impact fee per ERC for each project. The total impact fee for planned projects is $1,608. As stated in Section 6.6, the portion of the impact fee attributable to the extension to San Juan County will not be assessed to SJSVSSD connections.

The table also shows the anticipated breakdown of ERCs to be served by the improvements in the SJSVSSD service area and the GWSSA service area. As the first planned project impacts all areas of the system, the impact fee attributable to this project will be assessed to all new connections. For the second planned project, involving the extension south along Highway 191, only a portion of the projected costs are characterized as system improvements and impact fee eligible.

The maximum impact fee that GWSSA may reasonably assess to new ERCs, before considering credits, is the total of the past project eligible cost per ERC plus the total of the future project eligible cost per ERC which equals $2,195 per ERC for new connections in the GWSSA service area, or $1,910 for new connections in the SJSVSSD service area.

Table 6.7.2

RECOMMENDED IMPROVEMENTS - IMPACT FEE ELIGIBLE	Cost	Grant	Principal + Interest	% Allocable to New Growth SJSVSSD	% Allocable to New Growth GWSSA	Eligible IF Cost	ERC's Served	$/ERC
Sewer Improvements along HWY 191 - 1 and 2	$980,017	$98,002	$1,185,706	-	-	$1,185,705.65	896	$1,323.33
Sewer Improvements along HWY 191 - Extension to SJ County	$1,106,283	$0	$1,106,283	63.6%	36.4%	$403,137.03	1416	$284.70
TOTAL						$1,588,842.68		$1,608.03

6.8 Credits

Because a portion of future monthly usage rates may be used to service debt payments for proposed infrastructure, a reasonable impact fee may account for the portion paid by new users to debt service payments. To calculate the per-ERC credit requires a calculation of average contribution per ERC to the debt service payments over the course of the planning period.

For planned projects, GWSSA will pursue loans to fund a portion of the project. This analysis estimates that a portion of the project may be grant eligible. The remainder will be financed through a new loan with projected annual debt service payments of $59,285 (not including debt reserve) over 20

years. As new ERCs are added to the system, the portion of user fees allocated to debt-service payments will decrease. On average, new ERCs will contribute to debt-service payments for 8.84 years.

To calculate a reasonable credit we took the total impact fee eligible cost that may be offset by a credit for the portion of annual service payments used for the annual debt service of $59,285. We then divided the impact fee eligible portion by the number of ERCs served for each year through 2037. The average portion of user fees being used for debt service on impact fee eligible projects over the life of the loan is $17.57 annually. The credit is then calculated by multiplying the average portion of annual user fees by the average years an ERC will pay user fees. Thus, $17.57 x 8.84 years = a credit of $155.36 per ERC. The calculation for this credit is detailed further in Appendix C. This credit is applicable to new connections in both the GWSSA and SJSVSSD service areas.

6.9 Recommended Sanitary Sewer Impact Fee

The total impact fee allowable for sanitary sewer is the sum of the allocable costs for excess system capacity and new projects less any credits. In this case, the sum of the impact fees for sanitary sewer projects differs for new ERCs in the GWSSA service area compared with those in the SJSVSSD service area. The recommended sanitary sewer impact fee for each of these areas is outlined in Tables 6.9.1 and 6.9.2. For the GWSSA service area, the total impact fee equals $2,194.64 less the credit of $155.36 for a recommended impact fee of $2,039. For the SJSVSSD service area, the total impact fee equals $1,909.94 less the credit of $155.36 for a recommended impact fee of $1,755.

Table 6.9.1

Sanitary Sewer Impact Fee Calculation – GWSSA Service Area	
Past Improvement Impact Fee	$ 586.60
Planned Projects Impact Fee	$ 1,608.03
Annual Service Payments Credit	$ (155.36)
Total Sanitary Sewer Impact Fee	$ 2,039

Table 6.9.2

Sanitary Sewer Impact Fee Calculation – SJSVSSD Service Area	
Past Improvement Impact Fee	$ 586.60
Planned Projects Impact Fee	$ 1,323.33
Annual Service Payments Credit	$ (155.36)
Total Sanitary Sewer Impact Fee	$ 1,755

6.10 Moab City Impact Fee

In addition to impact fees assessed by GWSSA, new connections to the sanitary sewer system are also charged impact fees to account for impacts to the collection and treatment systems of Moab City. Based on Moab City's 2017 Sewer Impact Fee Facilities Plan and Impact Fee Analysis, this includes a fee of $542 for collection and $788 for treatment, a total of $1,329 per ERC. For some customer types, the Moab City ERC calculation varies for flow and treatment impacts. New sanitary sewer connections in the SJSVSSD service area may also be subject to impact fees assessed by SJSVSSD.

7.0 Conclusion & Recommendations

Sunrise Engineering recommends the maximum reasonable impact fees for GWSSA's sanitary sewer system be no more than $2,039 for GWSSA service area connections and $1,755 for SJSVSSD service area connections assessed per ERC. Moab City and SJSVSSD impact fees would be in addition to this as applicable.

Before enacting the actual impact fees, GWSSA should take into consideration the relationship between impact fees and future growth because an impact fee can influence the growth in a community.

The impact fee that is adopted based on this impact fee analysis should be charged to new connections until any of the following events occur:

1. New system improvements (other than those included in this analysis) are anticipated within six years, therefore becoming eligible for inclusion in the impact fee calculation;
2. The calculated excess capacity of the existing system facilities included in this analysis is expended, at which time they will no longer be eligible for inclusion in the impact fee calculation; or
3. The impact fee analysis is otherwise reviewed and updated. It is recommended that it be updated every five years at a minimum.

GWSSA has experienced steady growth over the past two decades and continual growth is expected. In addition to residential growth, GWSSA should also anticipate commercial and industrial growth which may place additional demands on the sanitary sewer system. This impact fee analysis will help the Agency apportion the costs of system improvements and expansion to the new growth that the

improvements will serve. Additionally, as the population served by GWSSA grows, GWSSA should be aware that in the future it may be required to complete a facilities plan to accompany future impact fee analyses.

APPENDIX A:

EXHIBITS

Exhibit 1 - ERC calculation factors*

Customer Type	Units	ERCs per Unit
Permanent Residential		
Single Family	Residence	1.00
Multifamily, 2 Bedrooms or Larger or ADU > 700 ft2	Unit	1.00
Multifamily, 1 Bedroom or Smaller or ADU < 700 ft2	Unit	0.56
Overnight Accomodations		
Rental Unit with Kitchen, 2 Bedrooms or Larger	Unit	1.20
Rental Unit with Kitchen, 1 Bedroom or Smaller	Unit	1.00
Hotel/Motel (No Kitchen)	Unit	0.78
Other		
Auto Repair	1,000 ft2	0.16
Bakery	1,000 ft2	0.53
Bank	1,000 ft2	0.50
Beauty/Barber Shop	Chair	0.25
Campground/RV Park	Site	0.79
Car Wash - Auto	Each	10.00
Car Wash - Wand	Wand	5.00
Commercial	1,000 ft2	0.15
Dry Cleaner	1,000 ft2	0.59
Fast Food	1,000 ft2	2.86
Gas Station/Convenience Store	1,000 ft2	0.28
Grocery Store	1,000 ft2	0.32
Laundromat	Washer	0.71
Office	1,000 ft2	0.25
Restaurant	Seat	0.09
Retail	1,000 ft2	0.15
Schools	Students	0.07
Theater	Seat	0.01
Warehouse	1,000 ft2	0.11

*ERC determination is made by the GWSSA manager. For instances which are not specifically covered here, this list will be used as a guideline to determine ERCs.

SCALE: 1"=2,000'

LEGEND

- EXISTING 12" SEWER
- EXISTING 8" SEWER
- PROPOSED 12" SEWER
- PROPOSED 10" SEWER

GWSSA SANITARY SEWER

EXHIBIT 2

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APPENDIX B:

ANALYSIS OF BANBERRY FACTORS

Banberry Factors Analysis

Utah Code Ann. 11-36a-304(2) requires that the following factors, also known as the Banberry Factors be considered as applicable in order to verify that the proportionate share of the costs of public facilities are reasonably related to the new development activity.

a) *The cost of each existing public facility that has excess capacity to serve the anticipated development resulting from the new development activity:*
   The cost of each existing public facility that has excess capacity to serve the anticipated development resulting from new development activity is discussed in Section 6.5 for GWSSA's sanitary sewer system.

b) *The cost of system improvements for each public facility:*
   The costs of projected system improvements for the GWSSA's sanitary sewer system are discussed in the same section as the cost of facilities with excess capacity.

c) *Other than impact fees, the manner of financing for each public facility, such as user charges, special assessments, bonded indebtedness, general taxes, or federal grants:*
   Each public facility with excess capacity has been funded in part by loans, part by self-funding, and another portion by grant. This analysis only included debt for past projects and debt and self-funding for proposed projects in calculating the impact fees.

d) *The relative extent to which development activity will contribute to financing the excess capacity of and system improvements for each existing public facility, by such means as user charges, special assessments, or payment from the proceeds of general taxes:*
   Currently, only assessed impact fees are used to finance the excess capacity of system improvements. A credit is calculated for future projects based on an estimated funding plan. The credit analysis may be found in section 6.8 of this analysis and the funding plan assumes 10% grant and a 20-year loan at 3.0 percent interest. It is again noted that this impact fee analysis should be reviewed and updated regularly to ensure that the fees remain applicable and fair.

e) *The relative extent to which development activity will contribute to the cost of existing public facilities and system improvements in the future:*
   It is not currently anticipated that development activity will contribute to the cost of existing public facilities and future system improvements outside of the allocable costs of current excess capacity and future projects as discussed within this analysis.

f) *The extent to which the development activity is entitled to a credit against impact fees because the development activity will dedicate system improvements or public facilities that will offset the demand for system improvements, inside or outside the proposed development:*
New development activity should be allowed a credit against impact fees to the extent that the development activity dedicates system improvements or public facilities that offset the demand for system improvements. However, no such dedications have been proposed and none are currently planned. GWSSA must address this issue if and when a developer proposes to dedicate new system improvements to offset the demand for the agency to provide those improvements.

g) *Extraordinary costs, if any, in servicing the newly developed properties:*
This factor is not currently applicable to this impact fee analysis.

h) *The time-price differential inherent in fair comparisons of amounts paid at different times:*
The time-price differential of amounts paid at different times related to the impact fee is influenced not only by inflation, but also by the amount that is paid towards the system costs through user fees over time. For this purpose, a user fee credit is recommended in Sections 6.8 if any portion of user fees is used to service debt/bond payments. It is not considered feasible to update the impact fee on an annual basis to account for the time price differential of amounts paid at different times. In order to ensure that the time-price differential associated with impact fees paid at different times is limited, GWSSA should review and update this impact fee analysis at least once every five years.

APPENDIX C:

ANNUAL USER FEE CREDIT CALCULATIONS

CALCULATION OF THE AVERAGE YEARS THAT NEW CONNECTIONS WILL PAY USER FEES WITHIN THE 20 YEAR PLANNIND PERIOD				
Year	ERC's	New ERC's	Years Remaining in Planning Period	Total Years (Years Remaining x New ERC's)
2017	2758	0	20	0
2018	2813	55	19	1048
2019	2869	56	18	1013
2020	2927	57	17	976
2021	2985	59	16	937
2022	3045	60	15	896
2023	3106	61	14	853
2024	3168	62	13	808
2025	3231	63	12	760
2026	3296	65	11	711
2027	3362	66	10	659
2028	3429	67	9	605
2029	3498	69	8	549
2030	3568	70	7	490
2031	3639	71	6	428
2032	3712	73	5	364
2033	3786	74	4	297
2034	3862	76	3	227
2035	3939	77	2	154
2036	4018	79	1	79
2037	4098	80	0	0
		1340	Total Years	11852

	Average Years (Total Years/New ERC's)	8.84

CALCULATION OF THE AVERAGE ANNUAL PORTION OF THE USER FEE PAID TO PLANNED PROJECTS AND THE USER FEE CREDIT			
Year	ERC's	Annual Eligible Project Debt Service	Portion of User Fee to Planned Projects
2017	2758	$ 59,285.30	$ 21.50
2018	2813	$ 59,285.30	$ 21.07
2019	2869	$ 59,285.30	$ 20.66
2020	2927	$ 59,285.30	$ 20.26
2021	2985	$ 59,285.30	$ 19.86
2022	3045	$ 59,285.30	$ 19.47
2023	3106	$ 59,285.30	$ 19.09
2024	3168	$ 59,285.30	$ 18.71
2025	3231	$ 59,285.30	$ 18.35
2026	3296	$ 59,285.30	$ 17.99
2027	3362	$ 59,285.30	$ 17.63
2028	3429	$ 59,285.30	$ 17.29
2029	3498	$ 59,285.30	$ 16.95
2030	3568	$ 59,285.30	$ 16.62
2031	3639	$ 59,285.30	$ 16.29
2032	3712	$ 59,285.30	$ 15.97
2033	3786	$ 59,285.30	$ 15.66
2034	3862	$ 59,285.30	$ 15.35
2035	3939	$ 59,285.30	$ 15.05
2036	4018	$ 59,285.30	$ 14.76
2037	4098	$ 59,285.30	$ 14.47
(A) Average Portion of Annual User Fee to Planned Projects			$17.57
	(B) Average Years of Payment		8.84

User Fee Credit	$155.36