SARATOGA SPRINGS

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DRINKING WATER IMPACT FEE ANALYSIS

(HAL Project No.: 360.07.500)

October 2022

HANSEN ALLEN & LUCE inc
ENGINEERS

CITY OF SARATOGA SPRINGS

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Kai Krieger, P.E.

Project Engineer

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IMPACT FEE CERTIFICATION

The Utah Impact Fee Act (Chapter 11-36a of the Utah Code) requires certifications for the Impact Fee Analysis (IFA). Hansen, Allen & Luce provides these certifications with the understanding that the recommendations in the IFA are followed by City Staff and elected officials. If all or a portion of the IFA is modified or amended, or if assumptions presented in this analysis change substantially, this certification is no longer valid. All information provided to Hansen, Allen & Luce is assumed to be correct, complete, and accurate.

IFA Certification

Hansen, Allen & Luce, Inc. certifies that the Impact Fee Analysis (IFA) prepared for the drinking water system:

1. includes only the costs of public facilities that are:
    a. allowed under the Impact Fees Act; and
    b. actually incurred; or
    c. projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. does not include:
    a. costs of operation and maintenance of public facilities;
    b. costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents;
    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;
    d. offsets costs with grants or other alternate sources of payment; and
3. complies in each and every relevant respect with the Impact Fees Act.

HANSEN, ALLEN & LUCE, INC.

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IMPACT FEE SUMMARY

The **purpose** of the Impact Fee Analysis (IFA) is to comply with the requirements of the Utah Impact Fees Act (Chapter 11-36a of the Utah Code) by identifying demands placed on the existing drinking water system by new development and by identifying the means by which the City will meet these new demands. This analysis is an update to the Drinking Water System IFA prepared in 2020 to address changes in conditions and assumptions that result in a reduction in the proposed drinking water impact fee. The Drinking Water System Master Plan and Capital Facility Plan have also been updated to support this analysis.

The most significant **change** in this update is increased project costs. The City has constructed projects costing over $40 million to increase the capacity of the drinking water system. These projects added capacity to the system which has almost entirely been used by the new growth that has come into the system since 2020. The actual project costs have come in higher than the projected cost for these improvements identified in the previous IFA. This has resulted in increased projected costs for future projects in this IFA.

Consistent with the last impact fee update, no remaining capacity of groundwater source is available for future growth. It is assumed all future source will be provided by Central Utah Water Conservancy District (CUWCD). The City could accept new groundwater rights after there is a change application approved by the State Engineer that meets drinking water standards. There are developers that have groundwater capacity credit with the City that have not paid impact fees. For this reason, there are two drinking water impact fees. One impact fee is for those with groundwater capacity credit which includes cost for available drinking water well capacity. The other drinking water impact fee does not include cost for drinking water well source capacity.

The impact fee **service area** is the drinking water system service area, which includes the current city boundary. The existing system served about 10,861 connections at the beginning of 2022. Projected **growth** adds 5,500 equivalent connections in the next 10 years for a total of 16,361 connections or equivalent.

There are two **components** to the drinking water impact fee. The first component is indoor water capacity which includes: well source capacity (for those who have drinking water groundwater credit), storage, and source conveyance. The second component is fire flow.

The resulting fee is $2,388 per typical single-family connection for those with well water credits. The fee is $1,928 per typical single-family connection for those acquiring wholesale contract source water from CUWCD.

The impact fee for a typical single-family residential connection requiring a ¾” water lateral, using well water, and requiring a 1,500 gpm fire flow would have an impact fee of **$2,709** (see the following table). This includes $2,388 for indoor water capacity and $321 for fire flow capacity. This is an increase from the current impact fee of $2,485.

TOTAL PROPOSED IMPACT FEE PER TYPICAL SINGLE-FAMILY CONNECTION WITH WELL WATER

Component	Per Typical Residential Connection
Indoor Water	$2,388
Fire Flow	$321
TOTAL (source capacity from well water)	**$2,709**

The typical single-family residential connection requiring a ¾" water lateral, purchasing source water capacity from CUWCD, and requiring a 1,500 gpm fire flow would have an impact fee of **$2,249** (see the following table). This includes $1,928 for indoor water capacity and $321 for fire flow capacity. This is an increase from the current impact fee of $2,048.

TOTAL PROPOSED IMPACT FEE PER TYPICAL SINGLE-FAMILY CONNECTION WITH WHOLESALE WATER

Component	Per Typical Residential Connection
Indoor Water	$1,928
Fire Flow	$321
TOTAL (source capacity from CUWCD)	**$2,249**

IMPACT FEE CALCULATION

1. General

This section relies on the data presented in the Impact Fee Facilities Plan to calculate a proposed impact fee based on the appropriate proportion of costs of projects planned in the next 10 years to increase capacity for new growth and an appropriate buy-in cost of available existing capacity previously purchased by the City.

The drinking water system facility projects planned in the next 10 years to increase capacity for new growth included within the impact fee are presented. Also included in this section are the possible revenue sources that the City may consider to fund the recommended projects. The two components of the impact fee are presented with the proposed fee. The drinking water system impact fee units include the indoor water capacity unit and the fire flow capacity unit.

2. Growth Projections

The development of impact fees requires growth projections over the next ten years. Growth projections for Saratoga Springs were developed by Zions Public Finance, Inc., and have been provided in a memorandum in Appendix C. Because the memorandum was developed in 2019, the existing value of ERCs differs from the value provided in the memo. In order to match the growth projections provided in the memo, the City has utilized the ERU growth for each year and applied them to the existing ERCs (Table 1).

Saratoga Springs experienced rapid growth at the beginning of 2000 followed by a cooling period from 2007 to 2010 with growth rebounding to a more moderately strong rate. The City projects stronger growth occurring in the near future due to the development of large property. Total growth projections for the City through 2035 are summarized in Table 1.

The existing system served about 10,861 connections at the beginning of 2022. As shown in Table 1, projected growth adds 5,500 ERCs in the next 10 years for a total of 16,361 ERCs.

TABLE 1
GROWTH PROJECTIONS

Year	Total Projected ERCs	Annual Growth
2022	10,861	5%
2023	11,411	5%
2024	11,961	5%
2025	12,511	4%
2026	13,061	4%
2027	13,611	4%
2028	14,161	4%
2029	14,711	4%
2030	15,261	4%
2031	15,811	4%
2032	16,361	3%
2033	16,911	3%
2034	17,461	3%
2035	18,011	3%

3. Cost of Existing and Future Facilities

The facilities and costs presented in Table 2 are existing facilities with remaining buy-in capacity. Included in the table are the actual construction costs of existing components of the City's drinking water system. These are not depreciated replacement costs, but the actual cost at the time of construction. Costs and figures depicting these projects are included in Appendix A. The facilities and costs presented in Table 3 are proposed projects essential to maintain the proposed level of service while accommodating future growth within the next 10 years. The facility sizing for the future proposed projects was based on the proposed level of service with growth projections provided by the City and hydraulic modeling. All future projects have a design life greater than 10 years, as required by the Impact Fee Act, and all the projects are 100% growth-related. Each project has a detailed cost for each component of the drinking water impact fee: Wells, Source Conveyance (transmission lines associated with source conveyance and pump stations), Storage (tanks and associated transmission lines), and Fire Suppression. See Appendix B for cost estimate details of future projects.

TABLE 2
COST OF EXISTING FACILITIES

Project	Wells	Source Conveyance	Storage	Fire	Water Rights[1]	TOTAL
Lake Mountain Mutual Purchase	$2,700,000	$10,216,000	$4,710,000	$2,240,000	$1,134,000	$21,000,000
Lake Mountain Development Purchase (2005 Bond)	$417,014	$1,262,621	$639,500	$755,047	$0	$3,074,182
Tank 5 (2006 Bond)	$0	$0	$2,645,796	$2,236,090	$0	$4,881,886
Zone 2 South SID (2009 Bond)	$0	$0	$1,579,763	$547,938	$0	$2,127,701
Water Right Purchases	$0	$0	$0	$0	$2,088,825	$2,088,825
400 North Pipeline (SAR.159)	$0	$186,278	$0	$310,809	$0	$497,087
Saratoga Rd Pipeline (SAR.163)	$0	$575,780	$0	$0	$0	$575,780
Booster Pump Station (SAR.140)	$0	$140,862	$0	$0	$0	$140,862
1200 North Pipeline (SAR.115)	$0	$26,659	$0	$65,022	$0	$91,681
Project - Fox Hollow Zone 3	$0	$1,189,127	$1,405,223	$191,621	$0	$2,785,971
Talus Ridge Pipeline Upsizes	$0	$65,294	$422,604	$106,690	$0	$594,588
Legacy Farms Pipeline Upsizes	$0	$29,388	$0	$167,612	$0	$197,000
Walmart SR-73 Pipeline	$0	$45,079	$0	$27,421	$0	$72,500
Fox Hollow N6 Pipeline Looping	$0	$43,990	$0	$45,451	$0	$89,441
Zone 2 North Source	$0	$738,383	$0	$339,974	$0	$1,078,357
CUWCD Connection	$0	$120,000	$0	$0	$0	$120,000
Redwood Road Transmission	$0	$806,894	$0	$820,849	$0	$1,627,743
Land Acquisition Cost for Well 4	$124,968	$0	$0	$0	$0	$124,968
Thrive Upsize	$0	$1,876	$0	$10,701	$0	$12,577
Harvest Hills Booster Upgrade	$0	$207,374	$0	$0	$0	$207,374
The Crossing Upsize	$0	$21,577	$0	$123,065	$0	$144,642
Beacon Point Waterline	$0	$516,223	$0	$474,179	$0	$990,402

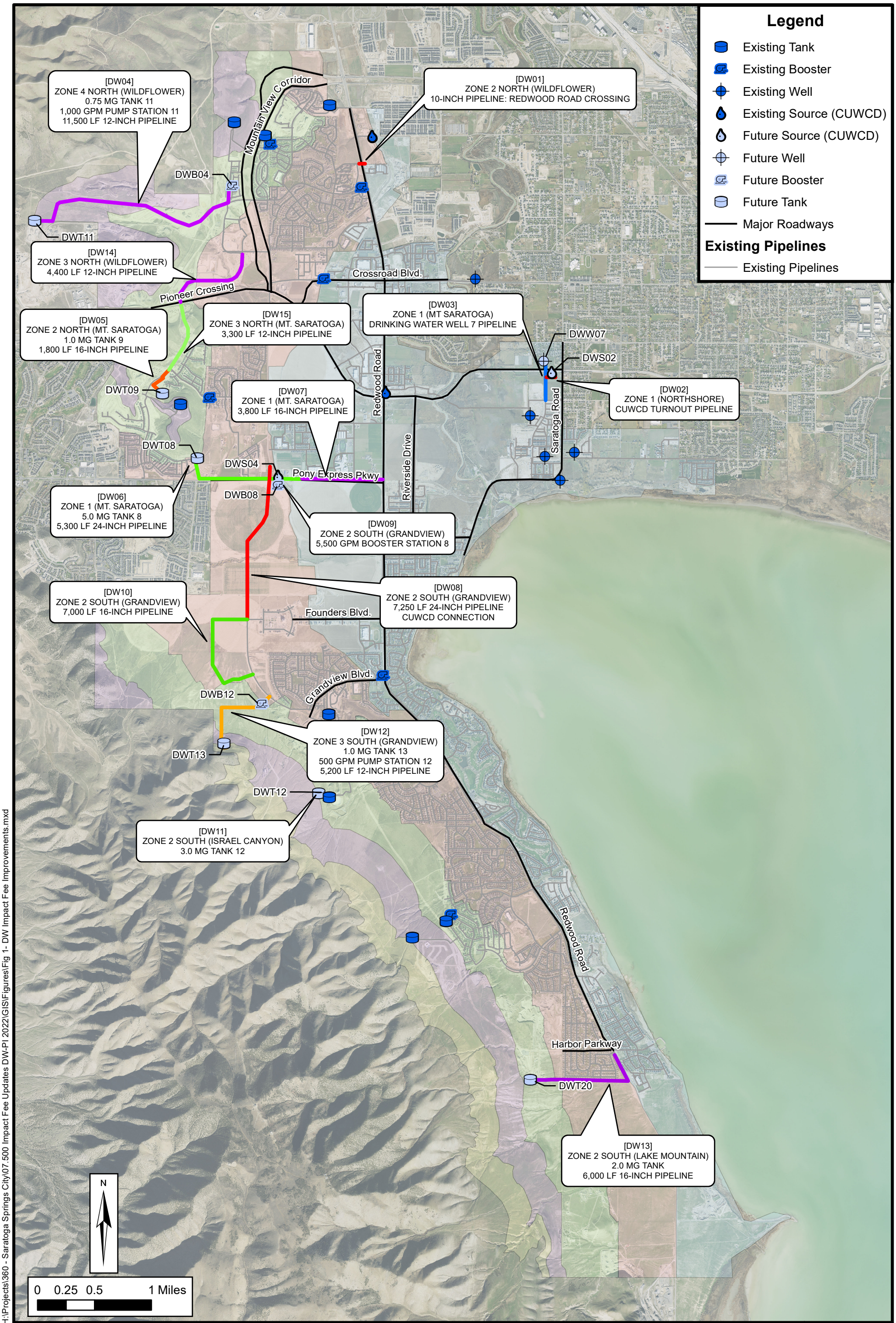
Project	Wells	Source Conveyance	Storage	Fire	Water Rights[1]	TOTAL
Gas Chlorination Study	$170,032	$0	$0	$0	$0	$170,032
Well #3 Purchase	$383,400	$0	$0	$0	$0	$383,400
Mt Saratoga Built Improvements	$0	$909,485	$909,485	$909,485	$0	$2,728,455
Mt Saratoga Tank and Booster Station SDC	$0	$12,050	$0	$0	$0	$12,050
New Water Meters and Radio Read	$0	$243,980	$0	$0	$0	$243,980
Source Protection Plans	$51,650	$0	$0	$0	$0	$51,650
VFD's for Grandview Booster	$0	$157,218	$0	$0	$0	$157,218
Loch Lomond PRV	$0	$92,425	$0	$0	$0	$92,425
Saratoga Hills Zone Change	$0	$122,375	$0	$0	$0	$122,375
FEMA Generator Grant	$316,507	$0	$0	$0	$0	$316,507
Northshore Drive Waterline	$0	$0	$0	$24,007	$0	$24,007
Quarterdeck Way Waterline	$0	$1,879	$0	$10,716	$0	$12,595
Northshore Phase 3 Improvements	$0	$73,730	$73,730	$73,729	$0	$221,189
Saratoga Springs Commercial Plat E	$0	$603	$0	$3,438	$0	$4,041
TOTAL	$4,163,571	$17,807,150	$12,386,101	$9,483,844	$3,222,825	$47,063,491

1. There are minimal historical water rights costs as many of the water rights have been transfers.

TABLE 3
COST OF FUTURE FACILITIES

Project	Map ID[1]	Wells	Source Conveyance	Storage	Fire	Water Rights	TOTAL[2]
Zone 2 North (Redwood Road Crossing)	DW01	$0	$345,700	$0	$115,300	$0	$461,000
Zone 1 (CUWCD Turnout Pipeline)	DW02	$0	$371,000	$0	$0	$0	$371,000
Zone 1 (Drinking Water Well 7 Pipeline)	DW03	$536,000	$0	$0	$0	$0	$536,000
Zone 4 North (Wildflower Zone 4 Tank)	DW04	$0	$3,522,300	1,976,000	$2,104,800	$0	$7,603,100
Zone 2 North (Mt Saratoga Zone 2 Tank)	DW05	$0	$766,300	$2,255,100	$653,100	$0	$3,674,500
Zone 1 (Mt Saratoga Zone 1 Tank)	DW06	$0	$3,029,300	$8,855,800	$2,930,100	$0	$14,845,200
Zone 1 (Mt Saratoga Zone 1 Pipeline)	DW07	$0	$1,337,500	$0	$445,700	$0	$1,783,200
Zone 2 South (Grandview CUWCD Connection)	DW08	$0	$2,709,700	$0	$656,900	$0	$3,366,600
Zone 2 South (Grandview Zone 2 Booster Station)	DW09	$0	$2,779,300	$0	$926,000	$0	$3,705,300
Zone 2 South (Grandview Zone 2 Pipeline)	DW10	$0	$1,844,800	$0	$814,800	$0	$2,659,600
Zone 2 South (Grandview Zone 2 Tank)	DW11	$0	$0	$5,277,800	$2,052,400	$0	$7,330,200
Zone 3 South (Grandview Zone 3 Tank)	DW12	$0	$3,020,900	$3,232,700	$2,028,400	$0	$8,282,000
Zone 2 South (Lake Mountain Zone 2 Tank)	DW13	$0	$1,899,000	$3,789,900	$1,301,300	$0	$6,990,200
Zone 3 North (Wildflower Zone 3 Pipeline)	DW14	$0	$1,542,600	$0	$514,600	$0	$2,057,200
Zone 3 North (Mt Saratoga Zone 3 Pipeline)	DW15	$0	$1,402,000	$0	$350,700	$0	$1,402,000
TOTAL[2]		**$536,000**	**$24,219,700**	**$25,417,300**	**$14,894,100**	**$0**	**$65,067,100**

1. See Figure 1 (Additional details on cost estimates are in Appendix B).
2. Total costs rounded up to the nearest $100.



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HANSEN ALLEN & LUCE INC ENGINEERS	**SARATOGA SPRINGS DRINKING WATER SYSTEM**	**IMPACT FEE IMPROVEMENTS**	**FIGURE 1**

Only those costs attributed to the new growth in the next 10 years can be included in the impact fee. Table 4 is a summary of the existing and future facility costs by drinking water system component and by time period. Existing costs are those costs attributed to capacity currently being used by existing connections. Costs attributed to the next 10 years are costs for the existing capacity or new capacity for the assumed growth in the next 10 years. Costs attributed to beyond 10 years are costs for the existing capacity or new capacity for the assumed growth beyond 10 years.

TABLE 4
FACILITY COST BY TIME PERIOD

	Existing	Next 10 Years	Beyond 10 Years	TOTAL
Wells	$3,373,199	$1,326,372	$0	**$4,699,571**
Source Conveyance	$12,393,323	$5,618,509	$24,015,018	**$42,026,850**
Storage	$6,510,504	$2,951,535	$28,341,362	**$37,803,401**
Fire	$3,551,178	$4,966,272	$15,860,493	**$24,377,944**
TOTAL COST	**$25,828,205**	**$14,862,688**	**$68,216,873**	**$108,907,766**

4. Revenue Options

Revenue options for the recommended projects include: general obligation bonds, revenue bonds, State/Federal grants and loans, user fees, and impact fees. Although this analysis focuses on impact fees, the City may need to consider a combination of these funding options. The following discussion describes each of these options.

General Obligation Bonds through Property Taxes

This form of debt enables the City to issue general obligation bonds for capital improvements and replacement. General Obligation (G.O.) Bonds would be used for items not typically financed through the Water Revenue Bonds (for example, the purchase of water source to ensure a sufficient water supply for the City in the future). G.O. bonds are debt instruments backed by the full faith and credit of the City which would be secured by an unconditional pledge of the City to levy assessments, charges or ad valorem taxes necessary to retire the bonds. G.O. bonds are the lowest-cost form of debt financing available to local governments and can be combined with other revenue sources such as specific fees, or special assessment charges to form a dual security through the City's revenue generating authority. These bonds are supported by the City as a whole, so the amount of debt issued for the water system is limited to a fixed percentage of the real market value for taxable property within the City. For growth related projects this type of

revenue places an unfair burden on existing residents as they had previously paid for their level of service.

Revenue Bonds

This form of debt financing is also available to the City for utility related capital improvements. Unlike G.O. bonds, revenue bonds are not backed by the City as a whole, but constitute a lien against the water service charge revenues of a Water Utility. Revenue bonds present a greater risk to the investor than do G.O. bonds, since repayment of debt depends on an adequate revenue stream, legally defensible rate structure /and sound fiscal management by the issuing jurisdiction. Due to this increased risk, revenue bonds generally require a higher interest rate than G.O. bonds, although currently interest rates are at historic lows. This type of debt also has very specific coverage requirements in the form of a reserve fund specifying an amount, usually expressed in terms of average or maximum debt service due in any future year. This debt service is required to be held as a cash reserve for annual debt service payment to the benefit of bondholders. Typically, voter approval is not required when issuing revenue bonds. For growth related projects this type of revenue places an unfair burden on existing residents as they had previously paid for their level of service.

State/Federal Grants and Loans

Historically, both local and county governments have experienced significant infrastructure funding support from state and federal government agencies in the form of block grants, direct grants in aid, interagency loans, and general revenue sharing. Federal expenditure pressures and virtual elimination of federal revenue sharing dollars are clear indicators that local government may be left to its own devices regarding infrastructure finance in general. However, state/federal grants and loans should be further investigated as a possible funding source for needed water system improvements.

It is also important to assess likely trends regarding federal/state assistance in infrastructure financing. Future trends indicate that grants will be replaced by loans through a public works revolving fund. Local governments can expect to access these revolving funds or public works trust funds by demonstrating both the need for and the ability to repay the borrowed monies, with interest. As with the revenue bonds discussed earlier, the ability of infrastructure programs to wisely manage their own finances will be a key element in evaluating whether many secondary funding sources, such as federal/state loans, will be available to the City.

User Fees

Similar to property taxes on existing residents, user fees to pay for improvements related to new growth-related projects places an unfair burden on existing residents as they had previously paid for their level of service.

Impact Fees

As discussed in Section 1, an impact fee is a one-time charge to a new development for the purpose of raising funds for the construction of improvements required by the new growth and to maintain the current level of service. Impact fees in Utah are regulated by the Impact Fee Statute and substantial case law. Impact fees are a form of a development exaction that requires a fee to offset the burdens created by the development on existing municipal services. Funding the future improvements required by growth through impact fees does not place the burden on existing residents to provide funding of these new improvements.

5. Impact Fee Unit Calculation

It is recommended that the City have two components to the impact fee for drinking water system facilities—indoor water use and fire flow capacity. Each component is discussed separately in the following sections.

Indoor Impact Fee Unit

The indoor impact fee has been calculated based on 1 ERC which would correspond to a standard ¾" lateral. Larger laterals are assumed to serve more than 1 ERC and will have a higher corresponding impact fee. Table 5 and 6 indicate the impact fee rate schedule based on water lateral size for the Well and CUWCD impact fees. The ERC factor is calculated based on American Water Works Association (AWWA) rated capacity for each lateral size.

TABLE 5
SARATOGA SPRINGS CITY DRINKING WATER
WELL IMPACT FEE BASED ON LATERAL SIZE

Water Lateral Size	ERC	Impact Fee Component
¾”	1.00	$2,388
1”	1.67	$3,987
1 ½”	3.33	$7,951
2”	5.33	$12,726
3”	10.00	$23,876
4”	16.67	$39,801
6”	33.33	$79,578
8”	53.33	$127,330

TABLE 6
SARATOGA SPRINGS CITY DRINKING WATER
WHOLESALE IMPACT FEE BASED ON LATERAL SIZE

Water Lateral Size	ERC	Impact Fee Component
¾”	1.00	$1,928
1”	1.67	$3,219
1 ½”	3.33	$6,419
2”	5.33	$10,274
3”	10.00	$19,276
4”	16.67	$32,133
6”	33.33	$64,246
8”	53.33	$102,798

The Indoor Water Impact Fee per unit is based on the documented cost of the excess capacity in the indoor water components of the drinking water system and the cost of future projects for the predicted development in the next 10 years. Table 7 is a summary of the capacity cost included in the impact fee calculation by indoor water component.

TABLE 7
INDOOR WATER CAPACITY COST

Indoor Water Component	Existing		Next 10 Years		Beyond 10 Years		TOTAL	
	ERC*	Cost	ERC	Cost	ERC	Cost	ERC*	Cost
Wells	7,333	$3,373,199	2,883	$1,326,372	0	$0	10,216	$4,699,571
Source Conveyance	9,807	$12,393,323	4,446	$5,618,509	19,003	$24,015,018	33,256	$42,026,850
Storage	9,807	$6,510,504	4,446	$2,951,535	42,692	$28,341,362	56,945	$37,803,401
TOTAL COST	**$22,277,027**		**$9,896,415**		**$52,356,380**		**$84,529,822**	

*Existing ERC does not include 1,054 units attributed to existing units at the time of the Lake Mountain Mutual Water Company purchase.

Currently, the drinking water system has excess capacity for both source and storage. Table 8 is a summary of the indoor water capacity cost per ERC using the totals of the column in “Next 10 Years” from Table 7. The unit costs calculated in Table 8 only include cost and capacity attributed to future connections anticipated in the next 10 years. The indoor water impact fee is calculated based on whether the new development has well water or if water will be purchased from CUWCD. This will allow for developments to pay their fair share of the facilities used for the source water available to the development. The cost per ERC for development with well water credit is $2,388 per ERC. The cost for developments that purchase CUWCD capacity is $1,928 per ERC, since this source is cheaper than the City’s wells. Note that the cost of purchasing source water capacity from CUWCD is not included in this impact fee. See Appendix D for details on the CUWCD wholesale water contract.

TABLE 8
INDOOR WATER CAPACITY COST PER ERC

Indoor Water Component	Cost Attributed to Component	Total ERC Capacity	Cost per ERC
Wells	$1,326,372	2,883	$460
Source Conveyance	$5,618,509	4,446	$1,264
Storage	$2,951,535	4,446	$664
TOTAL (Wells)			**$2,388**
TOTAL (CUWCD)			**$1,928**

Fire Flow Impact Fee Unit

Capacity attributed to fire flow is based on the fire suppression requirement specified by the International Fire Code (IFC), issued by the International Code Council. The level of service is equal to 0.18 million gallons (MG) (1,500 gpm for 2 hours) which is the IFC fire suppression requirement for most single-family homes and non-residential buildings with fire suppression systems. It is recommended that a building requiring greater than 0.18 MG of fire suppression be assigned an equitable cost of providing the additional capacity. Assigning an impact fee cost unit by ERC does not work in the case of fire flow capacity because everyday water use is not related to fire flow requirement. Assigning an impact fee cost unit based on the storage volume required for a typical single-family residence does not work because every home and building needs the minimum 0.18 MG for fire suppression. There is a greater distribution of the cost for the minimum storage. When a higher fire flow capacity is required, there are fewer buildings needing that higher volume to distribute the cost of supplying the greater capacity. A fire flow impact fee unit was therefore calculated to represent the equitable distribution of the fire flow capacity cost. The fee unit is based on an analysis of the existing capacity in the storage facilities versus the existing number of buildings within each fire flow requirement. It was assumed that the excess fire flow storage capacity will be distributed by the same ratio of buildings within each fire flow category. This cost distribution fee unit for each IFC fire flow requirement is shown in Table 9. See Appendix B for distribution fee calculations.

TABLE 9
FIRE FLOW CAPACITY IMPACT FEE COST DISTRIBUTION UNIT

Fire Flow Requirement (gpm)	Fire Flow Duration Requirement (hours)	Fire Volume Requirement (MG)	Cost Distribution Units	Fee per Connection
1,500	2	0.18	1	$321
1,750	2	0.21	3	$542
2,000	2	0.24	5	$1,095
2,250	2	0.27	9	$1,868
2,500	2	0.30	14	$3,006
2,750	2	0.33	25	$5,157
3,000	3	0.54	144	$32,056
3,250	3	0.59	174	$41,822
3,500	3	0.63	212	$56,473
3,750	3	0.68	263	$76,006
4,000	4	0.96	769	$261,575

Also shown in Table 9 is a Fire Flow Impact Fee per Connection based on the cost distribution units and a total cost of $24,377,944 attributed to fire flow capacity (see Table 4). The Fire Flow Impact Fee per unit is based on the actual municipal incurred cost of the available capacity in the fire flow components of the drinking water system and the cost of necessary future projects for the predicted growth in the next 10 years.

Water Right Impact Fee Unit

The proposed level of service for water rights is 267 gpd per ERC. An assessment of available water rights and physical groundwater capacity of drinking water quality is limited. There are not enough water rights or ground water available to meet future demands. Additional source and water right capacity will need to come from CUWCD. There are three existing connections to CUWCD with one more planned to meet future demands. There may be a small amount of additional groundwater rights available from private owners that may be used in lieu of paying for CUWCD water, but this is anticipated to be limited. It is recommended that the City not collect impact fees for water rights and require future connections to use credit, buy existing credit, or

buy on the market and transfer to the City (including CUWCD water). See Appendix D for details on CUWCD water cost.

The additional CUWCD water, in addition to existing excess capacity in the City water system (including credits held by developers) is sufficient to meet demands for the next ten years (see Tables 10 and 11). All water right volumes are annual diversions in acre-feet.

TABLE 10
WATER RIGHTS NEEDED BY 2032

	Acre-Feet
Predicted Demand in 2032 at the Proposed Level of Service	5,011
Existing Demand at the Proposed Level of Service	3,258
Additional Demand Expected by 2032	**1,753**

TABLE 11
WATER RIGHTS EXCESS CAPACITY

	Acre-Feet
Water Rights Owned	5,184
Existing Demand at the Proposed Level of Service	3,258
Excess Capacity	**1,926**

The City currently has enough water rights to meet the demand at the proposed level of service in 2032. The City is also projected to have at least 5,420 acre-feet of water available from CUWCD by the year 2032. It is recommended that the City accept water rights to maintain its level of service in one of three ways: Use of developer credit, deed the City an underground water right approved by the City Attorney, or provide CUWCD capacity sufficient to meet the level of service for the proposed development.

6. Total Impact Fee Calculation for a Typical Single-Family Residence

Adding the proposed drinking water system impact fee units together, the total proposed impact fee for a typical single family residential connection requiring a ¾" water lateral, using well water, and requiring a 1,500 gpm fire flow would have an impact fee of **$2,709** (see Table 12). This includes $2,388 for indoor water capacity and $321 for fire flow capacity.

TABLE 12
TOTAL PROPOSED IMPACT FEE PER
TYPICAL SINGLE-FAMILY CONNECTION
WITH WELL WATER

Component	Per Typical Residential Connection
Indoor Water	$2,388
Fire Flow	$321
TOTAL (source capacity from well water)	**$2,709**

The typical single-family residential connection requiring a ¾" water lateral, purchasing source water capacity from CUWCD, and requiring a 1,500 gpm fire flow would have an impact fee of **$2,249** (see the Table 13). This includes $1,928 for indoor water capacity and $321 for fire flow capacity.

TABLE 13
TOTAL PROPOSED IMPACT FEE PER
TYPICAL SINGLE-FAMILY CONNECTION
WITH WHOLESALE WATER

Component	Per Typical Residential Connection
Indoor Water	$1,928
Fire Flow	$321
TOTAL (source capacity from CUWCD)	**$2,249**

APPENDIX A

Existing Facilities Cost

DRINKING WATER SYSTEM COST

1 Lake Mountain Mutual Purchase

Wells	Wells 1,2,4,6 (7,8)	$2,700,000		Wells	$450,000
Source	2 Boosters, and pipelines	$10,216,000		Transmission for wells and boosters	$1,050,000
Storage	Tank 1,3,4 and pipelines	$4,710,000		Booster station	$500,000
Fire	Tank 1,3,4 and pipelines	$2,240,000		Storage per gallon	$1
Water Rights	378 acre-feet	$1,134,000		Water rights per ac-ft	$3,000
TOTAL		**$21,000,000**		Total	$21,000,000

2 Lake Mountain Development Purchase (2005 Bond)

Wells	Well 3, Booster and pipelines	$417,014		Well 3	$417,014
Source	Booster and pipelines	$1,262,621		Tank 2	$519,828
Storage	Tank 2 and Pipelines	$639,500		Booster 1	$180,966
Fire	Tank 2 and Pipelines	$755,047		Pipeline B & D	$132,294
TOTAL		**$3,074,183**		Pipeline C	$907,975
				2005 Bond Interest	$916,106
				Total	$3,074,183

3 Tank 5 and Waterline - 2006 Bond

Storage	Tank 5 and pipeline	$2,645,796		Tank 5 and Pipeline	$3,500,000
Fire	Tank 5 and pipeline	$2,236,090		2006 Bond Interest	$1,381,886
TOTAL		**$4,881,886**		Total	$4,881,886

4 Zone 2 South SID (2009 Bond)

Storage	Tank 6 and pipeline	$1,579,763		Tank 6	$1,588,650
Fire	Tank 6 and pipeline	$547,938		Pipeline	$539,051
TOTAL		**$2,127,701**		Total	$2,127,701

5 Water Right Purchases

Water Right	150 acre-feet from L&V Properties	**$450,000**
Water Right	75 acre-feet from L&V Properties	**$225,000**
Water Right	225 acre-feet from L&V Properties	**$675,000**
Water Right	225 acre-feet from Jeff Neilson	**$350,000**
Water Right	225 acre-feet from Jeff Neilson	**$275,000**
Water Right	225 acre-feet from Jeff Neilson	**$113,825**
TOTAL		**$2,088,825**

6 400 North Pipeline

Source	Pipeline	$186,278		400 North 14" Pipeline	$497,087
Fire	Pipeline	$310,809		Total	$497,087
TOTAL		**$497,087**			

7 Saratoga Road Pipeline

Source	Pipeline	$575,780		Saratoga Road Pipeline	$575,780
TOTAL		**$575,780**		Total	$575,780

8 Booster Pump Station 1 Upgrade

Source	Booster Upgrade	$140,862		Booster Pump Station 1 Upgrade	$140,862
TOTAL		**$140,862**		Total	$140,862

9 1200 North Pipeline

Source	Pipeline	$26,659		1200 North 12" Pipeline	$91,681
Fire	Pipeline	$65,022		Total	$91,681
TOTAL		**$91,681**			

10 Fox Hollow Zone 3

Source	Booster	$1,189,127		Tank 7	$1,596,844
Storage	Tank 7 and pipelines	$1,405,223		Fox Hollow Booster	$1,189,127
Fire	Tank 7 and pipelines	$191,621		Total	$2,785,971
TOTAL		**$2,785,971**			

11 Talus Ridge Pipeline Upsizes

Source	Pipeline Upsizes	$65,294		Plat A	$259,214
Storage	Pipeline Upsizes	$422,604		Plat B	$125,747
Fire	Pipeline Upsizes	$106,690		Plat D	$55,310
TOTAL		**$594,588**		Plat F	$45,578
				Plat G	$108,739
				Total	$594,588

12 Legacy Farms

Source	Pipeline Upsizes	$29,388		Legacy Farms Pipe Upsize VP2	$197,000
Fire	Pipeline Upsizes	$167,612		Total	$197,000
TOTAL		**$197,000**			

13 Walmart SR-73 Pipeline

Source	Pipeline	$45,079		SR-73 18-inch Pipeline	$72,500
Fire	Pipeline	$27,421		Total	$72,500
TOTAL		**$72,500**			

14 Fox Hollow N6 Pipeline Looping

Fire	Pipeline Looping	$45,451		Pipeline Looping	$89,441
Source	Pipeline Looping	$43,990		Total	$89,441
TOTAL		**$89,441**			

15 Zone 2 North Source

Source	Booster Station and Pipeline	$738,383		Booster Station	$738,383
Fire	18" U-73 Pipeline	$339,974		18" U-73 Pipeline	$339,974
TOTAL		**$1,078,357**		Total	$1,078,357

16 CUWCD Connection

CUWCD	Connection	$120,000		Transmission Lines	$120,000
TOTAL		**$120,000**		Total	$120,000

17 Redwood Rd Transmission Line

Source	Redwood Rd Transmission Line	$806,894		Redwood Rd Transmission Line	$806,894
Fire	Redwood Rd Transmission Line	$820,849		2014 Bond Interest	$820,849

	TOTAL		**$1,627,743**		Total	$1,627,743
18	**Additional Land Acquisition Cost for Well 4**					
	Wells	Land Acquisition	$124,968		Land Acquisition	$124,968
	TOTAL		**$124,968**		Total	$124,968
19	**Thrive Upsize**					
	Source	Transmission Line	$1,876		Transmission Line	$12,577
	Fire	Transmission Line	$10,701		Total	$12,577
	TOTAL		**$12,577**			
20	**Harvest Hills Booster #3 Upgrade**					
	Source	Booster Station and Pipeline	$207,374		Booster Station	$207,374
	TOTAL		**$207,374**		Total	$207,374
21	**The Crossing Upsize**					
	Source	Transmission Lines	$21,577		Transmission Lines	$144,642
	Fire	Transmission Lines	$123,065		Total	$144,642
	TOTAL		**$144,642**			
22	**Beacon Point Waterline**					
	Source	Pipeline	$516,223		16" Waterline	$990,402
	Fire	Pipeline	$474,179		Total	$990,402
	TOTAL		**$990,402**			
23	**Gas Chlorination Study**					
	Well	Chlorination Study	$170,032		Well Chlorination Study	$170,032
	TOTAL		**$170,032**		Total	$170,032
24	**Northshore 3- Phase 3 Improvements**					
	Storage	Phase 3 Improvements	$73,730		Phase 3 Improvements	$221,188
	Source	Phase 3 Improvements	$73,729		Total	$221,188
	Fire	Phase 3 Improvements	$73,729			
	TOTAL		**$221,188**			
25	**Well #3 Purchase**					
	Well	Purchase	$383,400		Well Purchase	$383,400
	TOTAL		**$383,400**		Total	$383,400
26	**Mt Saratoga Built Improvements**					
	Storage	Improvements	$909,485		Built Improvements	$2,728,455
	Source	Improvements	$909,485		Total	$2,728,455
	Fire	Improvements	$909,485			
	TOTAL		**$2,728,455**			
27	**Mt Saratoga Tank and Booster Station SDC**					
	Source	Source	$12,050		Master Planning, CFP, IFFP, IFFA	$12,050
	TOTAL		**$12,050**		Total	$12,050
28	**Source Protection Plans**					
	Wells	Updates	$15,000		Source Protection Plans	$38,880
	TOTAL		**$15,000**		Total	$38,880
29	**New Water Meters and Radio Read**					
	Source	Water Meters	$243,980		Master Planning, CFP, IFFP, IFFA	$243,980
	TOTAL		**$243,980**		Total	$243,980
30	**Source Protection Plans- Wells**					
	Wells	Source Protection	$36,650		Source Protection Plans	$36,650
	TOTAL		**$36,650**		Total	$36,650
31	**VFD's for Grandview Booster**					
	Source	VFD's	$157,218		Grandview Booster VFD's	$157,218
	TOTAL		**$157,218**		Total	$157,218
32	**Loch Lomond PRV**					
	Source	PRV	$92,425		Loch Lomond PRV	$92,425
	TOTAL		**$92,425**		Total	$92,425
33	**Saratoga Hills Zone Change**					
	Source	Zone Change	$122,375		Saratoga Hills Zone Change	$122,375
	TOTAL		**$122,375**		Total	$122,375
34	**FEMA Generator Grant**					
	Wells	Generator Grant	$316,507		Fema Generator Grant	$316,507
	TOTAL		**$316,507**		Total	$316,507
35	**Northshore Drive Waterline**					
	Fire	Waterline	$24,007		Northshore Drive Waterline	$24,007
	TOTAL		**$24,007**		Total	$24,007
36	**Quarterdeck Way Waterline**					
	Source	Transmission Line	$1,879		Quarterdeck Way Waterline	$12,595
	Fire	Transmission Line	$10,716		Total	$12,595
	TOTAL		**$12,595**			

37 **Saratoga Springs Commercial Plat E**

Source	Transmission Line	$603
Fire	Transmission Line	$3,438
TOTAL		**$4,041**

Saratoga Springs Commercial Plat E	$4,041
Total	$4,041

Note 12 – Long-term Debt - Continued

A. Special Assessment Bonds - Continued

Year Ending June 30	Principal	Interest	Total Debt Service
2017	124,000	78,396	202,396
2018	126,000	75,919	201,919
2019	127,000	72,997	199,997
2020	130,000	57,242	187,242
2021	133,000	55,037	363,321
2022-2026	724,000	230,321	830,882
2027-2029	473,000	106,882	1,149,794
	$1,837,000	$ 676,794	$3,135,551

B. Revenue Bonds

The government has issued bonds where the government pledged revenues derived from the operation of the utility system to pay the outstanding debt service. Revenue bonds are the obligations of the enterprise funds and the amounts outstanding at year end are as follows:

2014 Water Revenue Bonds

On October 22, 2014, the City issued $9,995,000 in Series 2014 Water Revenue Bonds with a maturity date of December 1, 2033 with an average coupon rate of 3.051%. The bonds were issued to (1) finance the costs associated with acquiring, constructing, and equipping portions of the City's culinary water system, (2) refund the Series 2005, 2006, and 2009 Water Revenue Bonds, and (3) finance the cost of issuance of the Series 2014 Bonds. Each principal payment is subject to prepayment and redemption at any time, in whole or in part, in inverse order, at the election of the City. The redemption price is equal to 100% of the principal amount to be prepaid or redeemed, plus accrued interest, if any, to the date of redemption. The City has pledged all water utility net revenues to pay the debt service costs through maturity in 2033. During the year the net revenue before depreciation was $2,146,220 and the debt service requirement was $692,425.

Year Ending June 30	Principal	Interest	Total Debt Service
2017	430,000	263,925	693,925
2018	435,000	255,275	690,275
2019	445,000	246,475	691,475
2020	455,000	237,475	692,475
2021	465,000	228,275	693,275
2022-2026	2,490,000	971,176	3,461,176
2027-2031	2,885,000	580,513	3,465,513
2032-2033	1,970,000	105,001	2,075,001
	$ 9,575,000	$ 2,888,115	$ 12,463,115

Note 12 – Long-term Debt - Continued

2011 Sales Tax Revenue Bonds

Sales tax revenue bonds are special limited obligations of the City backed by the portion of sales and use taxes levied by the City under the Local Sales and Use Tax Act. The bonds are obligations of the governmental funds.

On June 1, 2011, the city issued $4,000,000 in Series 2011 Sales Taxes Revenue Bonds at interest rates ranging from 3.0% to 4.125% with a maturity date of June 1, 2031. The bonds were issued to finance the costs associated with acquiring, constructing, renovating, equipping, and furnishing the City's facilities (including a public works facility, fire station, and city well improvements) and to exercise a purchase option under an outstanding financing lease for the City Hall building. Bond proceeds were also used to pay the cost of issuance of the Bonds. The Bonds maturing on or after June 1, 2021 are subject to redemption prior to maturity, in whole or in part, at the option of the City on December 31, 2020 or on any date thereafter, from such maturities or parts thereof as selected by the City. The redemption price will equal 100% of the principal amount to be repaid or redeemed, plus accrued interest, if any, to the date of redemption. The City has pledged all sales tax revenues to pay the debt service costs through maturity in 2031. During the year the sales tax revenue was $3,215,928 and the debt service requirement was $290,800 or 10% of the sales tax revenue. The City has pledges all of its sales tax revenues. Revenue bond debt service requirements to maturity are as follows:

Year Ending June 30	Principal	Interest	Total Debt Service
2017	165,000	125,587	290,587
2018	170,000	120,483	290,483
2019	175,000	113,667	288,667
2020	185,000	106,633	291,633
2021	190,000	99,217	289,217
2022-2026	1,065,000	386,366	1,451,366
2027-2031	1,300,000	158,710	1,458,710
Total	$3,250,000	$1,110,663	$ 4,360,663

C. Note Payable

Culinary Water System

Prior to the City being established in December 1997, a water company had built a water system in the area covered by the City. On February 2, 2005, the city entered into a settlement agreement to purchase the water system and the rights to the unused water capacity. The City's obligation of $21,000,000 is to be serviced by paying two-thirds, presently $2,000, of each connection or impact fee collected. By agreement, the obligation bears no interest. If the City has not paid the full obligation by February 2, 2025, then the remaining, unpaid balance becomes due at that date. The note is an obligation of the water enterprise fund. Based on the projection of 525 connections annually, the remaining obligation is expected to be retired as follows:

1. Purpose of the Bond Issue

The City's $9,710,000 Series 2016 Water Revenue Bonds are for the purpose of (i) financing the acquisition and construction of improvements to the System and (ii) paying costs of issuance of the Series 2016 Bonds.

2. Security for the Bond Issue

The Series 2016 Bonds are limited obligations of the City, payable solely from the Revenues of the System after Payment of Operation and Maintenance Expenses, as described herein. The lien of the Series 2016 Bonds on a portion of the connection fees that are part of Revenues is subordinate to the lien on such Revenues securing the hereinafter described Settlement Obligation. The Series 2016 Bonds are not general obligations of the City or the State or any agency, instrumentality, or political subdivision thereof. The issuance of the Series 2016 Bonds shall not directly, indirectly, or contingently obligate the City or the State or any agency, instrumentality, or political subdivision thereof to levy any form of taxation therefor or to make any appropriation for the payment of the Series 2016 Bonds. The City will not mortgage or grant a security interest in the System or any portion thereof to secure payment of the Series 2016 Bonds.

3. Sources and Uses of Funds

Sources:		
	Par Amount of Bonds	$9,710,000.00
	Reoffering Premium	581,450.35
	Total Sources	$10,291,450.35
Uses:		
	Deposit to Project Construction Fund	$10,000,000.00
	Total Underwriter's Discount (1.519%)	147,484.46
	Costs of Issuance	105,000.00
	Gross Bond Insurance Premium (27.0 bp)	36,436.80
	Rounding Amount	2,529.09
	Total Uses	$10,291,450.35

4. Structure of the Bond Issue

The Series 2016 Bonds are fixed-rate bonds structured to produce roughly level debt service payments. Principal payments are due each December 1 beginning December 1, 2017 and interest is due semi-annually on June 1 and December 1 of each year beginning June 1, 2017. The final maturity for the Series 2016 Bonds will be December 1, 2036.

Saratoga Springs, Utah
$9,710,000 Water Revenue Bonds
Series 2016
(Final Numbers)

Debt Service Schedule

Date	Principal	Coupon	Interest	Total P+I	Fiscal Total
11/22/2016	-	-	-	-	-
06/01/2017	-	-	166,110.00	166,110.00	166,110.00
12/01/2017	155,000.00	2.000%	158,200.00	313,200.00	-
06/01/2018	-	-	156,650.00	156,650.00	469,850.00
12/01/2018	240,000.00	2.000%	156,650.00	396,650.00	-
06/01/2019	-	-	154,250.00	154,250.00	550,900.00
12/01/2019	380,000.00	2.000%	154,250.00	534,250.00	-
06/01/2020	-	-	150,450.00	150,450.00	684,700.00
12/01/2020	385,000.00	2.000%	150,450.00	535,450.00	-
06/01/2021	-	-	146,600.00	146,600.00	682,050.00
12/01/2021	395,000.00	3.000%	146,600.00	541,600.00	-
06/01/2022	-	-	140,675.00	140,675.00	682,275.00
12/01/2022	410,000.00	3.000%	140,675.00	550,675.00	-
06/01/2023	-	-	134,525.00	134,525.00	685,200.00
12/01/2023	425,000.00	5.000%	134,525.00	559,525.00	-
06/01/2024	-	-	123,900.00	123,900.00	683,425.00
12/01/2024	445,000.00	5.000%	123,900.00	568,900.00	-
06/01/2025	-	-	112,775.00	112,775.00	681,675.00
12/01/2025	470,000.00	5.000%	112,775.00	582,775.00	-
06/01/2026	-	-	101,025.00	101,025.00	683,800.00
12/01/2026	495,000.00	5.000%	101,025.00	596,025.00	-
06/01/2027	-	-	88,650.00	88,650.00	684,675.00
12/01/2027	515,000.00	3.000%	88,650.00	603,650.00	-
06/01/2028	-	-	80,925.00	80,925.00	684,575.00
12/01/2028	530,000.00	3.000%	80,925.00	610,925.00	-
06/01/2029	-	-	72,975.00	72,975.00	683,900.00
12/01/2029	545,000.00	3.000%	72,975.00	617,975.00	-
06/01/2030	-	-	64,800.00	64,800.00	682,775.00
12/01/2030	565,000.00	3.000%	64,800.00	629,800.00	-
06/01/2031	-	-	56,325.00	56,325.00	686,125.00
12/01/2031	580,000.00	3.000%	56,325.00	636,325.00	-
06/01/2032	-	-	47,625.00	47,625.00	683,950.00
12/01/2032	595,000.00	3.000%	47,625.00	642,625.00	-
06/01/2033	-	-	38,700.00	38,700.00	681,325.00
12/01/2033	615,000.00	3.000%	38,700.00	653,700.00	-
06/01/2034	-	-	29,475.00	29,475.00	683,175.00
12/01/2034	635,000.00	3.000%	29,475.00	664,475.00	-
06/01/2035	-	-	19,950.00	19,950.00	684,425.00
12/01/2035	655,000.00	3.000%	19,950.00	674,950.00	-
06/01/2036	-	-	10,125.00	10,125.00	685,075.00
12/01/2036	675,000.00	3.000%	10,125.00	685,125.00	-
06/01/2037	-	-	-	-	685,125.00
Total	$9,710,000.00	-	$3,785,110.00	$13,495,110.00	-

Yield Statistics

Bond Year Dollars	$116,777.75
Average Life	12.027 Years
Average Coupon	3.241293896%
Net Interest Cost (NIC)	2.86987699%
True Interest Cost (TIC)	2.80369045%
Bond Yield for Arbitrage Purposes	2.67717346%
All Inclusive Cost (AIC)	2.949215796%
IRS Form 8038	
Net Interest Cost	2.64190928%
Weighted Average Maturity	11.783 Years

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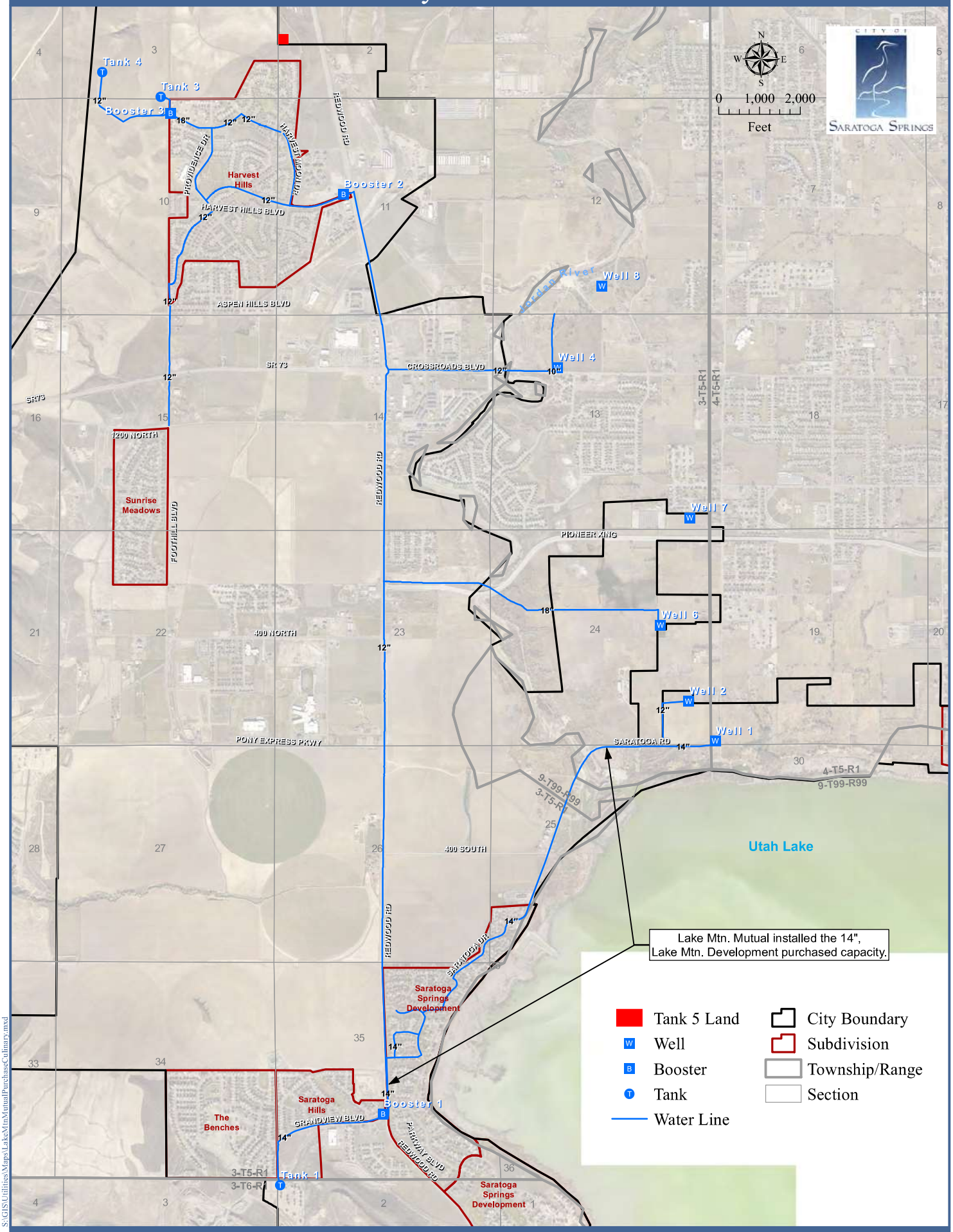
Lake Mountain Mutual Culinary Asset Phurchase



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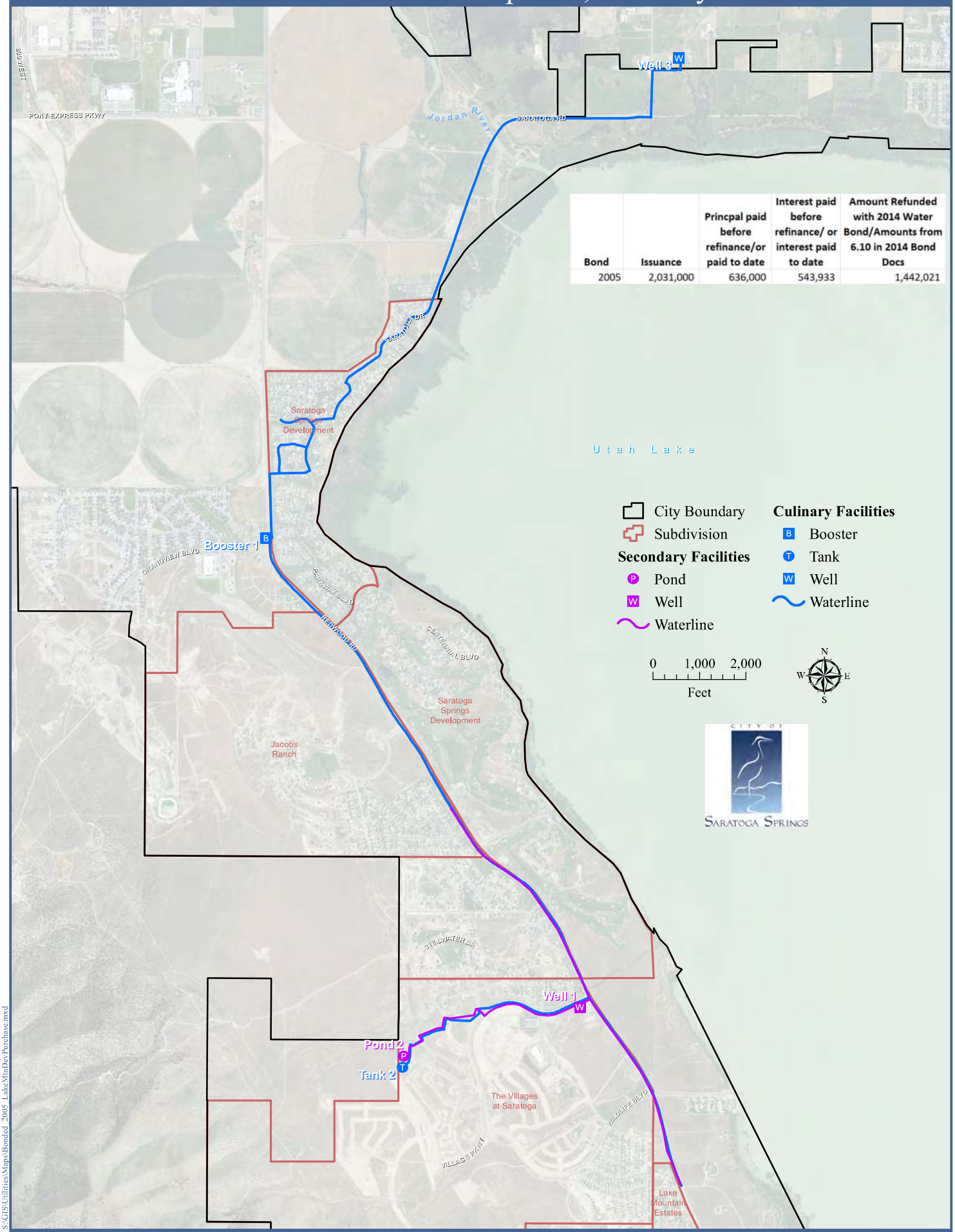
4 February 2014

2005 Bond Series - Lake Mtn. Development, Water System Purchase



Bond	Issuance	Princpal paid before refinance/or paid to date	Interest paid before refinance/ or interest paid to date	Amount Refunded with 2014 Water Bond/Amounts from 6.10 in 2014 Bond Docs
2005	2,031,000	636,000	543,933	1,442,021

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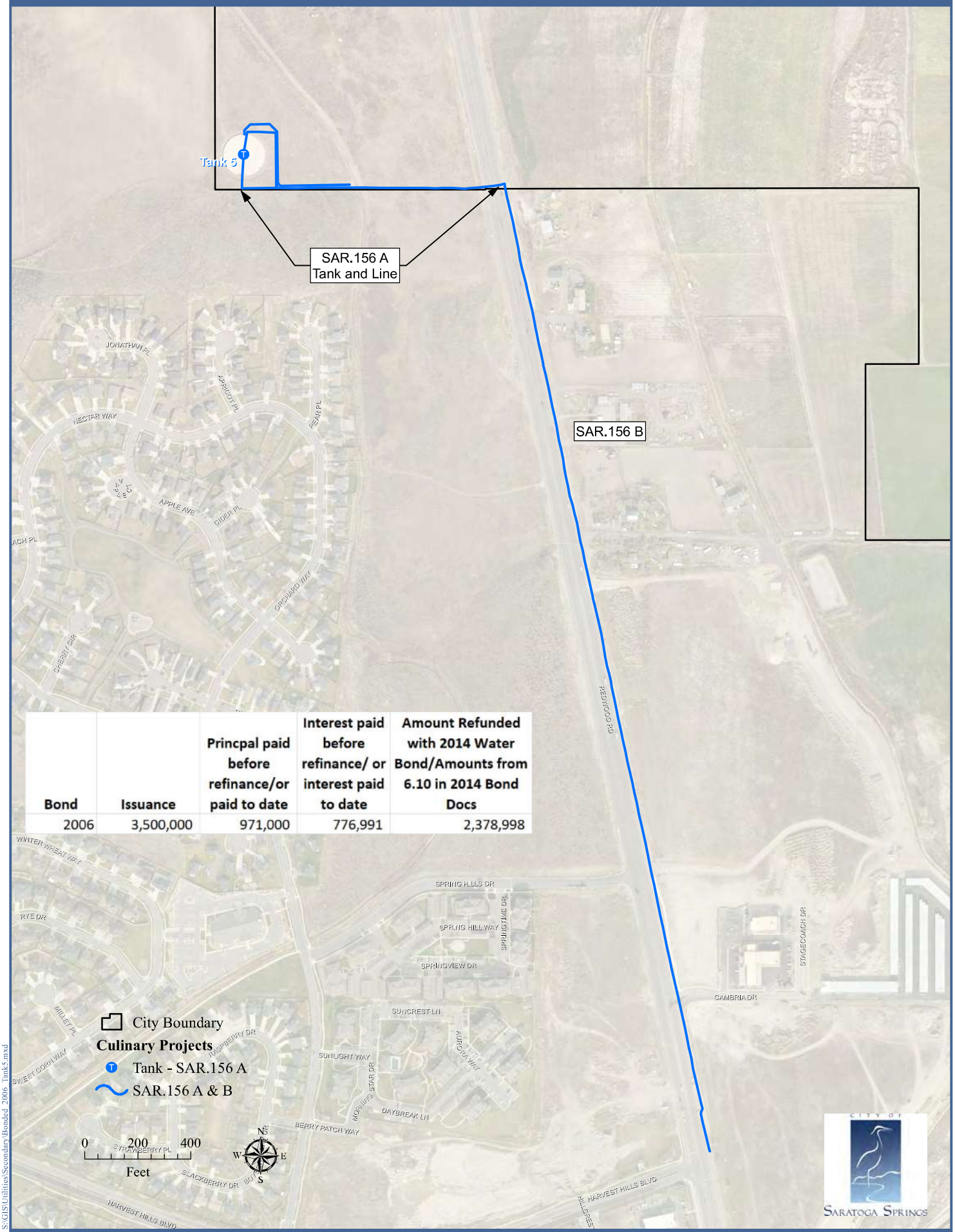
27 August 2012

2006 Bond Series - Zone 1: Tank 5 and Waterline Connections



Bond	Issuance	Princpal paid before refinance/or paid to date	Interest paid before refinance/ or interest paid to date	Amount Refunded with 2014 Water Bond/Amounts from 6.10 in 2014 Bond Docs
2006	3,500,000	971,000	776,991	2,378,998

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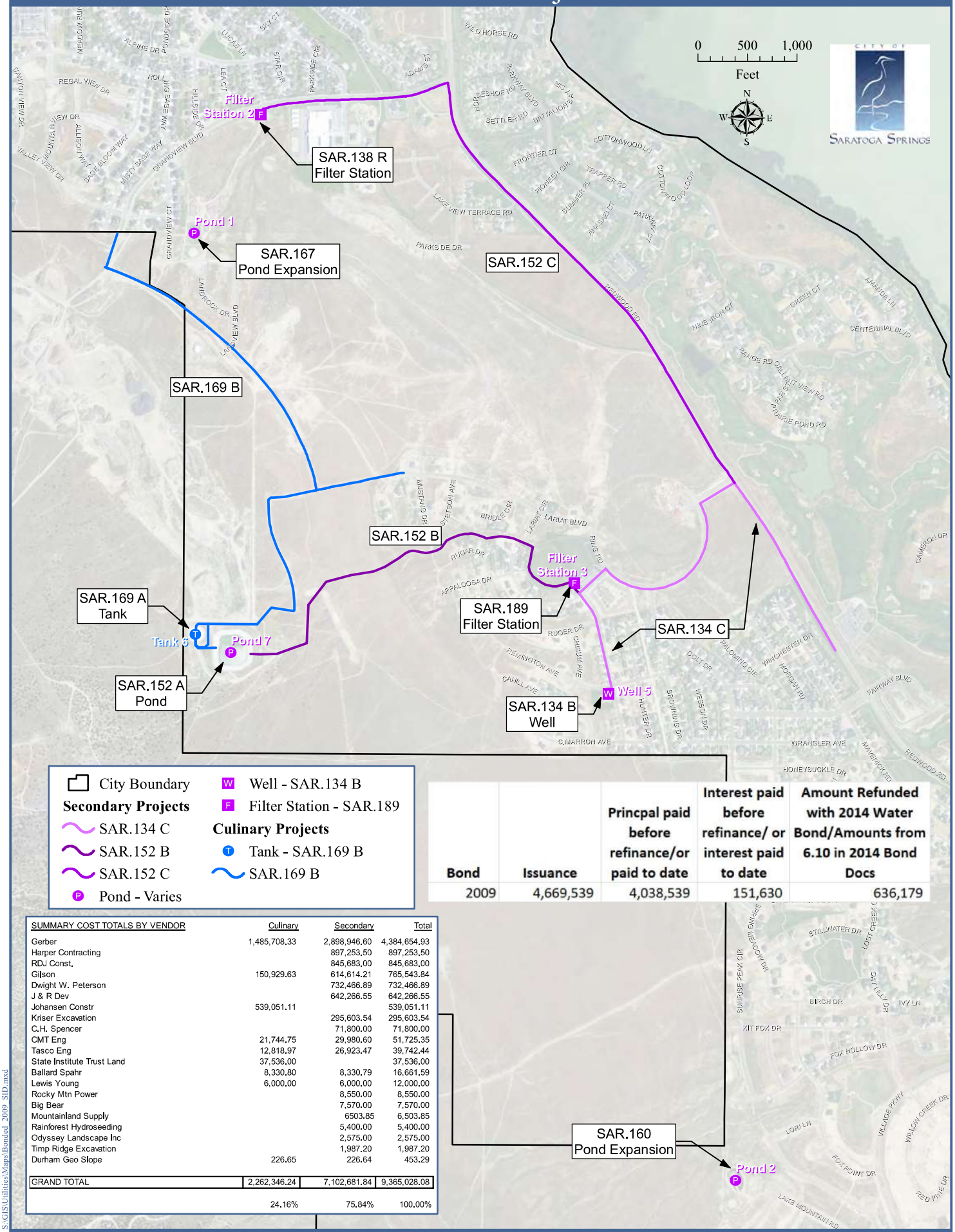
27 August 2012

2009 Bond Series - South Zone 2 SID Projects



City Boundary

Secondary Projects

- SAR.134 C
- SAR.152 B
- SAR.152 C
- Pond - Varies
- Well - SAR.134 B
- Filter Station - SAR.189

Culinary Projects

- Tank - SAR.169 B
- SAR.169 B

Bond	Issuance	Princpal paid before refinance/or paid to date	Interest paid before refinance/ or interest paid to date	Amount Refunded with 2014 Water Bond/Amounts from 6.10 in 2014 Bond Docs
2009	4,669,539	4,038,539	151,630	636,179

SUMMARY COST TOTALS BY VENDOR	Culinary	Secondary	Total
Gerber	1,485,708.33	2,898,946.60	4,384,654.93
Harper Contracting		897,253.50	897,253.50
RDJ Const.		845,683.00	845,683.00
Gilson	150,929.63	614,614.21	765,543.84
Dwight W. Peterson		732,466.89	732,466.89
J & R Dev		642,266.55	642,266.55
Johansen Constr	539,051.11		539,051.11
Kriser Excavation		295,603.54	295,603.54
C.H. Spencer		71,800.00	71,800.00
CMT Eng	21,744.75	29,980.60	51,725.35
Tasco Eng	12,818.97	26,923.47	39,742.44
State Institute Trust Land	37,536.00		37,536.00
Ballard Spahr	8,330.80	8,330.79	16,661.59
Lewis Young	6,000.00	6,000.00	12,000.00
Rocky Mtn Power		8,550.00	8,550.00
Big Bear		7,570.00	7,570.00
Mountainland Supply		6503.85	6,503.85
Rainforest Hydroseeding		5,400.00	5,400.00
Odyssey Landscape Inc		2,575.00	2,575.00
Timp Ridge Excavation		1,987.20	1,987.20
Durham Geo Slope	226.65	226.64	453.29
GRAND TOTAL	2,262,346.24	7,102,681.84	9,365,028.08
	24.16%	75.84%	100.00%

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22 October 2012

APPENDIX B

Cost Estimates

CITY OF SARATOGA SPRINGS
DRINKING WATER FACILITIES - COST OPINIONS
2022-2031

ID # DW01

ZONE 2 NORTH - WILDFLOWER
10-INCH PIPELINE: REDWOOD ROAD CROSSING
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	LS	10%	$ 350,000	$ 35,000
2	Construction Surveying	LS	2%	$ 350,000	$ 7,000
3	SWPPP	LS	3%	$ 350,000	$ 11,000
4	Relocate existing utilities	LS	1	$ 112,500	$ 112,500
5	30-inch Jack & Bore casing installation (50% of the cost in irrigation water project)	LF	140	$ 575	$ 80,500
6	10-inch HDPE Pipe installed in casing	LF	120	$ 175	$ 21,000
7	Connections to existing pipelines	EA	0	$ -	$ -
8	10-in PVC Irrigation Water Pipeline	LF	150	$ 425	$ 63,750
9	Fittings & valves	LS	1	$ 20,000	$ 20,000
10	Pipeline connections	EA	2	$ 20,000	$ 40,000
11	Flushing, disinfecting, pressure testing	LS	1	$ 10,000	$ 10,000
				Sub-Total Construction	$ 400,800
				Contingency and Unknowns:	$ -
				TOTAL CONSTRUCTION	$ 400,800
				Engineering Design and Construction Services 15%	$ 60,200
				Preliminary Opinion of Probable Cost	**$ 461,000**

ID # DW02

ZONE 1 - NORTHSHORE
CUWCD TURNOUT PIPELINE
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 250,000	$ 25,000
2	Construction Surveying	LS	2%	$ 250,000	$ 5,000
3	SWPPP	LS	3%	$ 250,000	$ 8,000
4	upsize from 8-in to 16-in PVC Pipeline	LF	0	$ 70	$ -
5	16-in PVC Pipeline	LF	600	$ 270	$ 163,000
6	Fittings & valves	LS	1	$ 50,000	$ 50,000
7	Pipeline connections	EA	2	$ 10,000	$ 20,000
8	Flushing, disinfecting, pressure testing	LS	1	$ 10,000	$ 10,000
				Sub-Total Construction	$ 281,000
				Contingency and Unknowns: 10%	$ 28,100
				TOTAL CONSTRUCTION	$ 309,100
				Engineering Design and Construction Services 20%	$ 61,900
				Preliminary Opinion of Probable Cost	**$ 371,000**

DW03

ZONE 1 - MT SARATOGA
DRINKING WATER WELL 7 PIPELINE
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 340,000	$ 34,000
2	Construction Surveying	LS	2%	$ 340,000	$ 7,000
3	SWPPP	LS	3%	$ 340,000	$ 11,000
4	10-inch Directional drilled HDPE pipeline	LF	170	$ 1,000	$ 170,000
5	10-inch Drinking Water Pipeline	LF	375	$ 234	$ 87,750
6	Fittings & valves	LS	1	$ 50,000	$ 50,000
7	Pipeline connections	EA	2	$ 10,000	$ 20,000
8	Flushing, disinfecting, pressure testing	LS	1	$ 10,000	$ 10,000
				Sub-Total Construction	$ 389,800
				Contingency and Unknowns: 10%	$ 39,000
				TOTAL CONSTRUCTION	$ 428,800
				Engineering Design and Construction Services 25%	$ 107,200
				Preliminary Opinion of Probable Cost	**$ 536,000**

DW04

ZONE 4 NORTH - WILDFLOWER
0.75 MG TANK #11, 1,000 GPM PUMP STATION #11, 11,500 LF 12-INCH PIPELINE
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 5,250,000	$ 525,000
2	Construction Surveying	LS	2%	$ 5,250,000	$ 105,000
3	SWPPP	LS	3%	$ 5,250,000	$ 158,000
4	Materials Testing	LS	1	$ 20,000	$ 20,000
5	12-inch PVC Pipeline	LF	11,500	$ 247	$ 2,842,909
6	12-inch valves and connections to existing	EA	1	$ 20,000	$ 20,000
7	Pressure Reducing Station	LS	1	$ 75,000	$ 75,000
8	Pump Station Structure	LS	1	$ 150,000	$ 150,000
9	Pumps, Valves, and Piping	LS	1	$ 225,000	$ 225,000
10	Yard Piping & Valving	LS	50%	$ 225,000	$ 113,000
11	Electrical Systems	LS	1	$ 200,000	$ 200,000
12	HVAC Systems	LS	1	$ 15,000	$ 15,000
13	Fencing	LF	500	$ 25	$ 12,500
14	Landscaping	SF	8,000	$ 5	$ 40,000
15	Pump Station Site Improvements	LS	1	$ 100,000	$ 100,000
16	Tank Construction (750,000 gallons)	Gallon	750,000	$ 1.62	$ 1,215,000
17	Yard Piping & Valving	LS	15%	$ 1,215,000	$ 182,000
18	Pipeline connections	EA	2	$ 10,000	$ 20,000
19	Flushing, disinfecting, pressure testing	LS	1	$ 15,000	$ 15,000
20	Land Acquisition	ACRES	1	$ 250,000	$ 250,000
				Sub-Total Construction	$ 6,283,500
				Contingency and Unknowns: 10%	$ 628,400
				TOTAL CONSTRUCTION	$ 6,911,900
				Engineering Design and Construction Services 10%	$ 691,200
				Preliminary Opinion of Probable Cost	**$ 7,603,100**

DW05

ZONE 2 NORTH - MT SARATOGA
1.0 MG TANK #9, 1,800 LF 16-INCH PIPELINE
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 2,380,000	$ 238,000
2	Construction Surveying	LS	2%	$ 2,380,000	$ 48,000
3	SWPPP	LS	3%	$ 2,380,000	$ 72,000
4	Tank Construction (1,000,000 gallons)	Gallon	1,000,000	$ 1.62	$ 1,620,000
5	Yard Piping & Valving	LS	15%	$ 1,620,000	$ 243,000
6	16-inch PVC Pipeline	LF	1,800	$ 270	$ 486,492
7	Pipeline connections	EA	1	$ 10,000	$ 10,000
8	Flushing, disinfecting, pressure testing	LS	1	$ 15,000	$ 15,000
9	Land Acquisition	ACRES	1.0	$ 250,000	$ 250,000
				Sub-Total Construction	$ 2,982,500
				Contingency and Unknowns: 10%	$ 298,300
				TOTAL CONSTRUCTION	$ 3,280,800
				Engineering Design and Construction Services 12%	$ 393,700
				Preliminary Opinion of Probable Cost	**$ 3,674,500**

DW06

ZONE 1 - MT SARATOGA
5.0 MG TANK #8, 5,300 LF 24-INCH PIPELINE,
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 10,340,000	$ 1,034,000
2	Construction Surveying	LS	2%	$ 10,340,000	$ 207,000
3	SWPPP	LS	3%	$ 10,340,000	$ 311,000
4	Tank Construction (5,000,000 gallons)	Gallon	5,000,000	$ 1.52	$ 7,600,000
5	Yard Piping & Valving	LS	10%	$ 7,600,000	$ 760,000
6	24" PVC Transmission Pipeline	LF	5,300	$ 365	$ 1,935,655
7	Pipeline connections	EA	2	$ 10,000	$ 20,000
8	Flushing, disinfecting, pressure testing	LS	1	$ 20,000	$ 20,000
9	Land Acquisition	ACRES	2.9	$ 250,000	$ 725,000
				Sub-Total Construction	$ 12,612,700
				Contingency and Unknowns: 10%	$ 1,261,300
				TOTAL CONSTRUCTION	$ 13,874,000
				Engineering Design and Construction Services 7%	$ 971,200
				Preliminary Opinion of Probable Cost	**$ 14,845,200**

DW07

ZONE 1 - MT SARATOGA
3,800 LF 16-INCH PIPELINE
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 1,130,000	$ 113,000
2	Construction Surveying	LS	2%	$ 1,130,000	$ 23,000
3	SWPPP	LS	3%	$ 1,130,000	$ 34,000
4	16" PVC Transmission Pipeline	LF	3,800	$ 270	$ 1,027,039
5	Fittings & valves	LS	1	$ 50,000	$ 50,000
6	Pipeline connections	EA	2	$ 15,000	$ 30,000
7	Flushing, disinfecting, pressure testing	LS	1	$ 15,000	$ 15,000
				Sub-Total Construction	$ 1,292,100
				Contingency and Unknowns: 20%	$ 258,500
				TOTAL CONSTRUCTION	$ 1,550,600
				Engineering Design and Construction Services 15%	$ 232,600
				Preliminary Opinion of Probable Cost	**$ 1,783,200**

DW08

ZONE 2 SOUTH- GRANDVIEW
7,250 LF 24-INCH PIPELINE, CUWCD CONNECTION
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 2,320,000	$ 232,000
2	Construction Surveying	LS	2%	$ 2,320,000	$ 47,000
3	SWPPP	LS	3%	$ 2,320,000	$ 70,000
4	CUWCD connection	LS	1	$ 10,000	$ 10,000
5	24" DIP Pipeline incl fittings and valves	LF	7,250	$ 365	$ 2,647,831
6	16" DIP Pipeline incl fittings & valves	LF	1,385	$ 270	$ 374,329
7	Pipeline connections	EA	2	$ 10,000	$ 20,000
8	Flushing, disinfecting, pressure testing	LS	1	$ 10,000	$ 10,000
9	Economy of scale in roadway project	LS	1	$ (750,000)	$ (750,000)
				Sub-Total Construction	$ 2,661,200
				Contingency and Unknowns: 10%	$ 266,200
				TOTAL CONSTRUCTION	$ 2,927,400
				Engineering Design and Construction Services 15%	$ 439,200
				Preliminary Opinion of Probable Cost	**$ 3,366,600**

DW09

ZONE 2 SOUTH- GRANDVIEW
5,500 GPM BOOSTER STATION #8
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 2,340,000	$ 234,000
2	Construction Surveying	LS	2%	$ 2,340,000	$ 47,000
3	SWPPP	LS	3%	$ 2,340,000	$ 71,000
4	Materials Testing	LS	1	$ 15,000	$ 15,000
5	Pump Station Structure	LS	1	$ 400,000	$ 400,000
6	Pumps, Valves, and Piping	LS	1	$ 500,000	$ 500,000
7	Yard Piping & Valving	LS	50%	$ 500,000	$ 250,000
8	Electrical Systems	LS	1	$ 400,000	$ 400,000
9	HVAC Systems	LS	1	$ 100,000	$ 100,000
10	Fencing	LF	1,400	$ 35	$ 49,000
11	Landscaping	SF	14,000	$ 6	$ 84,000
12	Pump Station Site Improvements	LS	1	$ 100,000	$ 100,000
13	24" valves and connections to existing	EA	3	$ 20,000	$ 60,000
14	Land Acquisition	ACRES	1.5	$ 250,000	$ 375,000
				Sub-Total Construction	$ 2,685,000
				Contingency and Unknowns: 20%	$ 537,000
				TOTAL CONSTRUCTION	$ 3,222,000
				Engineering Design and Construction Services 15%	$ 483,300
				Preliminary Opinion of Probable Cost	**$ 3,705,300**

DW10

ZONE 2 SOUTH- GRANDVIEW
7,000 LF 16-INCH PIPELINE
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 1,910,000	$ 191,000
2	Construction Surveying	LS	2%	$ 1,910,000	$ 39,000
3	SWPPP	LS	3%	$ 1,910,000	$ 58,000
4	16-inch PVC Pipeline	LF	7,000	$ 270	$ 1,890,000
5	Connections to existing pipelines	EA	2	$ 10,000	$ 20,000
				Sub-Total Construction	$ 2,198,000
				Contingency and Unknowns: 10%	$ 219,800
				TOTAL CONSTRUCTION	$ 2,417,800
				Engineering Design and Construction Services 10%	$ 241,800
				Preliminary Opinion of Probable Cost	**$ 2,659,600**

DW11

ZONE 2 SOUTH- ISRAEL CANYON
3.0 MG TANK #12
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 5,270,000	$ 527,000
2	Construction Surveying	LS	2%	$ 5,270,000	$ 106,000
3	SWPPP	LS	3%	$ 5,270,000	$ 159,000
4	Tank Construction (3,000,000 gallons)	Gallon	3,000,000	$ 1.52	$ 4,560,000
5	Yard Piping & Valving	LS	10%	$ 4,560,000	$ 456,000
6	Land Acquisition	ACRES	1.0	$ 250,000	$ 250,000
				Sub-Total Construction	$ 6,058,000
				Contingency and Unknowns: 10%	$ 605,800
				TOTAL CONSTRUCTION	$ 6,663,800
				Engineering Design and Construction Services 10%	$ 666,400
				Preliminary Opinion of Probable Cost	**$ 7,330,200**

DW12

ZONE 3 SOUTH- GRANDVIEW
1.0 MG TANK #13, 500 GPM PUMP STATION #12, 5,200 LF 12-INCH PIPELINE
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	LS	10%	$ 5,590,000	$ 559,000
2	Construction Surveying	LS	2%	$ 5,590,000	$ 112,000
3	SWPPP	LS	3%	$ 5,590,000	$ 168,000
4	Tank construction	Gallon	1,000,000	$ 1.62	$ 1,620,000
5	Tank Land Acquisition	AC	3.2	$ 250,000	$ 800,000
6	Yard Piping & Valving	LS	10%	$ 1,620,000	$ 162,000
7	12-inch pipeline	LF	5,200	$ 247	$ 1,286,000
8	Connections to existing pipelines	EA	2	$ 10,000	$ 20,000
9	Materials Testing	LS	1	$ 15,000	$ 15,000
10	Pump Station Structure	LS	1	$ 250,000	$ 250,000
11	Pumps, Valves, and Piping	LS	1	$ 500,000	$ 500,000
12	Yard Piping & Valving	LS	50%	$ 500,000	$ 250,000
13	Electrical Systems	LS	1	$ 400,000	$ 400,000
14	HVAC Systems	LS	1	$ 50,000	$ 50,000
15	Fencing	LF	1,200	$ 35	$ 42,000
16	Landscaping	SF	28,000	$ 6	$ 168,000
17	Pump Station Site Improvements	LS	1	$ 20,000	$ 20,000
18	Pump Station Land Acquisition	ACRES	0.5	$ 250,000	$ 125,000
				Sub-Total Construction	$ 6,547,000
				Contingency and Unknowns: 10%	$ 654,700
				TOTAL CONSTRUCTION	$ 7,201,700
				Engineering Design and Construction Services 15%	$ 1,080,300
				Preliminary Opinion of Probable Cost	**$ 8,282,000**

DW13

ZONE 2 SOUTH- LAKE MOUNTAIN
2.0 MG TANK, 6,000 LF 16-INCH PIPELINE
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	LS	10%	$ 5,220,000	$ 522,000
2	Construction Surveying	LS	2%	$ 5,220,000	$ 105,000
3	SWPPP	LS	3%	$ 5,220,000	$ 157,000
4	Tank construction (2,000,000 gallons)	Gallon	2,000,000	$ 1.52	$ 3,040,000
5	Yard Piping & Valving	LS	10%	$ 3,040,000	$ 304,000
6	16-inch pipeline	LF	6,000	$ 270	$ 1,622,000
7	Connections to existing pipelines	EA	2	$ 10,000	$ 20,000
8	Land Acquisition	AC	0.9	$ 250,000	$ 225,000
				Sub-Total Construction	$ 5,995,000
				Contingency and Unknowns: 10%	$ 599,500
				TOTAL CONSTRUCTION	$ 6,594,500
				Engineering Design and Construction Services 6%	$ 395,700
				Preliminary Opinion of Probable Cost	**$ 6,990,200**

DW 14

ZONE 3 NORTH- WILDFLOWER
4,400 LF 12-INCH PIPELINE
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Mobilization/Demobilization	%	10%	$ 1,230,000	$ 123,000
2	Construction Surveying	LS	2%	$ 1,230,000	$ 25,000
3	SWPPP	LS	3%	$ 1,230,000	$ 37,000
4	12-in PVC Pipeline	LF	4,400	$ 247	$ 1,087,722
5	Connections to existing pipelines	LS	2	$ 10,000	$ 20,000
6	Pressure Reducing Station	LS	1	$ 120,000	$ 120,000
				Sub-Total Construction	$ 1,412,800
				Contingency and Unknowns: 30%	$ 423,900
				TOTAL CONSTRUCTION	$ 1,836,700
				Engineering Design and Construction Services 12%	$ 220,500
				Preliminary Opinion of Probable Cost	**$ 2,057,200**

DW 15

ZONE 3 NORTH - MT SARATOGA
3,300 LF 12-INCH PIPELINE
Preliminary Opinion of Probable Cost

ITEM	DESCRIPTION	UNIT	QUANTITY		UNIT COST		TOTAL COST
1	Mobilization/Demobilization	%	10%	$	840,000	$	84,000
2	Construction Surveying	LS	2%	$	840,000	$	17,000
3	SWPPP	LS	3%	$	840,000	$	26,000
4	12-in PVC Pipeline	LF	3,300	$	247	$	815,791
5	Connections to existing pipelines	LS	2	$	10,000	$	20,000
					Sub-Total Construction	$	962,800
					Contingency and Unknowns: 30%	$	288,900
					TOTAL CONSTRUCTION	$	1,251,700
					Engineering Design and Construction Services 12%	$	150,300
					Preliminary Opinion of Probable Cost	**$**	**1,402,000**

SARATOGA SPRINGS FIRE FLOW UNITS CALCULATION

Fire Flow Requirement (gpm)	Fire Flow Duration (hours)	Fire Flow Volume (gallons)	Fire Flow Volume (MG)	Additional Fire Flow Volume per Requirement (gallons)	Existing Connections per Fire Flow	Total Existing Connections per Fire Flow	Total Storage Capacity per Fire Flow (ERC)	Total Storage Capacity per Fire Flow (Connections)	Difference after rounding number of connections	Additional cappacity added back	Fire Flow Volume per Connection per Fire Flow (gallons)	Total Fire Flow Volume per Connection (gallons)	Fire Flow Impact Fee Units per Connection	Storage Capacity (Connections)	Total Fire Flow Impact Fee Units	Total Fee Distribution	Fee per Connection	Existing Cost
1500	2	180000	0.18	0	9222	9397	56946.000	56946		69.44	41.1	41.1	1.0	55885.0	55885.0	$17,942,806.12	$321.07	$2,960,876
1750	2	210000	0.21	30000	18	175	1060.503	1061	-0.50	-14.04	28.3	69.4	1.7	637.0	1075.3	$345,249.77	$541.99	$9,756
2000	2	240000	0.24	30000	14	70	424.201	424	0.20	14.25	70.8	140.1	3.4	121.0	412.6	$132,474.59	$1,094.83	$15,328
2250	2	270000	0.27	30000	11	50	303.001	303	0.00	0.09	99.0	239.1	5.8	97.0	564.5	$181,238.64	$1,868.44	$20,553
2500	2	300000	0.3	30000	8	34	206.041	206	0.04	5.92	145.6	384.8	9.4	97.0	908.3	$291,613.01	$3,006.32	$24,051
2750	2	330000	0.33	30000	4	18	109.080	109	0.08	22.11	275.2	660.0	16.1	48.0	771.0	$247,526.82	$5,156.81	$20,627
3000	3	540000	0.54	210000	2	10	60.600	61	-0.40	-1376.39	3442.6	4102.6	99.8	25.0	2496.0	$801,388.72	$32,055.55	$64,111
3250	3	585000	0.585	45000	1	6	36.360	36	0.36	450.14	1250.0	5352.6	130.3	12.0	1563.1	$501,868.24	$41,822.35	$41,822
3500	3	630000	0.63	45000	1	4	24.240	24	0.24	450.14	1875.0	7227.6	175.9	6.0	1055.3	$338,835.36	$56,472.56	$56,473
3750	3	675000	0.675	45000	1	3	18.180	18	0.18	450.14	2500.0	9727.6	236.7	6.0	1420.4	$456,037.01	$76,006.17	$76,006
4000	4	960000	0.96	285000	1	2	12.120	12	0.12	2850.91	23750.0	33477.6	814.7	12.0	9776.5	$3,138,905.41	$261,575.45	$261,575
						9572		58007		2853				56946.0	75928.0	$24,377,943.69		$3,551,178

Fire Flow Requirement (gpm)	Storage Capacity (Connections)	Total Fire Flow Impact Fee Units	Total Fee Distribution	Fee per Connection	Existing Units	Existing Cost	Next 10 Years Connections	Next 10 Years Units	Next 10 Years Cost	Beyond 10 Years Connections	Beyond 10 Years Units	Beyond 10 Years Cost
1500	55885.0	55885.0	$17,942,806	$321.07	9,222.0	$2,960,876	13,397	13,397.0	$4,301,329	33,266	33,266.0	$10,680,601
1750	637.0	1075.3	$345,250	$541.99	30.4	$9,756	26	43.9	$14,092	593	1,001.0	$321,402
2000	121.0	412.6	$132,475	$1,094.83	47.7	$15,328	20	68.2	$21,897	87	296.7	$95,250
2250	97.0	564.5	$181,239	$1,868.44	64.0	$20,553	16	93.1	$29,895	70	407.4	$130,791
2500	97.0	908.3	$291,613	$3,006.32	74.9	$24,051	12	112.4	$36,076	77	721.0	$231,487
2750	48.0	771.0	$247,527	$5,156.81	64.2	$20,627	6	96.4	$30,941	38	610.3	$195,959
3000	25.0	2496.0	$801,389	$32,055.55	199.7	$64,111	3	299.5	$96,167	20	1,996.8	$641,111
3250	12.0	1563.1	$501,868	$41,822.35	130.3	$41,822	1	130.3	$41,822	10	1,302.6	$418,224
3500	6.0	1055.3	$338,835	$56,472.56	175.9	$56,473	1	175.9	$56,473	4	703.6	$225,890
3750	6.0	1420.4	$456,037	$76,006.17	236.7	$76,006	1	236.7	$76,006	4	946.9	$304,025
4000	12.0	9776.5	$3,138,905	$261,575.45	814.7	$261,575	1	814.7	$261,575	10	8,147.1	$2,615,755
	56946.0	75928.0	$24,377,944		11,060.6	$3,551,178	13,484	15,468.0	$4,966,272	34,179	49,399.4	$15,860,493

APPENDIX C

Growth Projections Memo

ZIONS PUBLIC FINANCE, INC.

GROWTH PROJECTIONS MEMORANDUM

Historic Growth

Saratoga Springs has been experiencing extremely rapid growth over the past 20 years, growing by an average of 429 Equivalent Residential Units (ERUs) per year since 2000. Growth has been even more rapid in recent years, with an average increase of 551 ERUs since 2015. In 2019, the City increased by 642 ERUs; and in the first half of 2020 alone the City has seen 550 ERUs. Interestingly, there has been no discernible slowdown yet from COVID-19.

TABLE 1: HISTORIC GROWTH IN ERUS

Year	Historic ERUs	AAGR*	ERU Increase per Year
7/1/2000	235		
7/1/2001	582	148%	347
7/1/2002	896	54%	315
7/1/2003	1,223	36%	326
7/1/2004	1,655	35%	432
7/1/2005	2,109	27%	454
7/1/2006	2,656	26%	548
7/1/2007	3,167	19%	511
7/1/2008	3,938	24%	771
7/1/2009	4,238	8%	301
7/1/2010	4,399	4%	160
7/1/2011	4,569	4%	170
7/1/2012	4,771	4%	202
7/1/2013	5,097	7%	325
7/1/2014	5,630	10%	534
7/1/2015	6,097	8%	467
7/1/2016	6,603	8%	506
7/1/2017	7,150	8%	547
7/1/2018	7,743	8%	593
7/1/2019	8,385	8%	642

*AAGR = average annual growth rate

Projected Growth

Based on trends over the past two years, a sensitivity analysis of future growth has been projected first based on an average of 550 and then 600 ERUs per year. The recommended approach then uses a blend of these two assumptions, plus actual anticipated growth of 650 ERUs in 2020 (based on the record number of permits pulled halfway through 2020). Even though the City has seen increasing numbers of ERUs over the past few years, this model conservatively assumes somewhat smaller growth in 2021 and

2022 (600 ERUs per year) followed by growth of 550 ERUs per year through 2035. While the effects of the COVID-19 pandemic event are not known at this time, the growth projections included in this document reflect our best current estimate of the impact COVID-19 will have on system growth to reflect the expected slowdown in the economy associated with current conditions.

TABLE 2: PROJECTED GROWTH IN ERUS

Projected Growth	550 ERU Growth	600 ERU Growth	Recommended Growth Projections	AAGR, Recommended Growth Projections
7/1/2019	8,385	8,385	8,385	
7/1/2020	8,935	8,985	9,035	8%
7/1/2021	9,485	9,585	9,635	7%
7/1/2022	10,035	10,185	10,235	6%
7/1/2023	10,585	10,785	10,785	5%
7/1/2024	11,135	11,385	11,335	5%
7/1/2025	11,685	11,985	11,885	5%
7/1/2026	12,235	12,585	12,435	5%
7/1/2027	12,785	13,185	12,985	4%
7/1/2028	13,335	13,785	13,535	4%
7/1/2029	13,885	14,385	14,085	4%
7/1/2030	14,435	14,985	14,635	4%
7/1/2031	14,985	15,585	15,185	4%
7/1/2032	15,535	16,185	15,735	4%
7/1/2033	16,085	16,785	16,285	3%
7/1/2034	16,635	17,385	16,835	3%
7/1/2035	17,185	17,985	17,385	3%

Other Considerations

As part of this analysis, we have reviewed the availability of vacant land in Saratoga Springs and have found that there is sufficient land available that there are no constraints to development taking place or that would slow the historic growth experienced in the City.

APPENDIX D

CUWCD Water Costs

Revision Date:
31-May-22

Saratoga Springs CWP FY2010A Amended Exhibit A Summary

CWP Amended FY2010A Agreement---Amended Feb 2017, with Prepayment #1

Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009)	Estimated One Time Development Take Down Fee Set By CUWCD Board of Trustees* ($/AF)	Capital Recovery Component of Annual Fee *Actual* and Estimated for Volume of Water in Column D As Determined By CUWCD* ($/AF)	OM&R Component of Annual Fee *Actual* and Estimated for Deliverable Water in Column E As Determined By CUWCD* ($/AF)	Annual Fee *Actual* and Estimated Future As set annually by CUWCD* (Columns G+I) ($/AF)	Capital Prepayment Amount Actual and Estimated Future (One-Time Development Fee + NPV of Future Capital Components of Annual Fee)	Cost per Typical Single Family = 0.3 AF
2008-09	*$5,850*			*$300*		
2009-10	*$6,200*			*$314*		
2010-11	*$7,000*			*$328*		
2011-12	*$7,800*			*$343*		
2012-13	*$8,400*			*$358*		
2013-14	*$8,500*			*$374*		
2014-15	*$9,100*	*$222*	*$169*	*$391*		
2015-16	*$9,370*	*$140*	*$268*	*$408*		
2016-17	*$9,600*	*$219*	*$208*	*$427*		
2017-18	*$9,840*	*$280*	*$166*	*$446*		
2018-19	*$10,090*	*$310*	*$156*	*$466*		
2019-20	*$10,340*	*$346*	*$141*	*$487*		
2020-21	*$10,600*	*$364*	*$145*	*$509*	*$16,935*	*$5,081*
2021-22	*$10,870*	*$344*	*$188*	*$532*	*$17,008*	*$5,102*
2022-23	**$11,140**	**$362**	**$194**	**$556**	**$18,112**	**$5,434**
2023-24	$11,420	$381	$200	$581	$18,195	$5,459
2024-25	$11,720	$395	$209	$604	$18,274	$5,482
2025-26	$11,990	$410	$218	$628	$18,303	$5,491
2026-27	$12,290	$425	$228	$653	$18,340	$5,502
2027-28	$12,600	$441	$238	$679	$18,366	$5,510
2028-29	$12,920	$458	$249	$707	$18,378	$5,513
2029-30	$13,240	$470	$260	$730	$18,365	$5,510
2030-31	$13,570	$481	$272	$753	$18,341	$5,502
2031-32	$13,910	$493	$285	$778	$18,308	$5,492
2032-33	$14,260	$504	$299	$803	$18,262	$5,479
2033-34	$14,610	$516	$313	$829	$18,196	$5,459
2034-35	$14,980	$528	$328	$856	$18,126	$5,438
2035-36	$15,350	$540	$344	$884	$18,034	$5,410
2036-37	$15,740	$552	$361	$913	$17,937	$5,381
2037-38	$16,130	$564	$378	$942	$17,817	$5,345
2038-39	$16,530	$576	$397	$973	$17,681	$5,304
2039-40	$16,950	$589	$416	$1,005	$17,539	$5,262
Totals						

Actual previous fee amounts are in Italics and Blue as set annually by CUWCD Board of Trustees

FY2022-23 Fee Amounts to be adopted by CUWCD Board of Trustees

*Future Fee amounts are estimated amounts and are subject to change before being adopted annually by CUWCD Board of Trustees