**ORDINANCE NO. 17-33 (11-14-17)**

**ORDINANCE AND ENACTMENT AMENDING THE CITY'S DRINKING WATER IMPACT FEE FACILITIES PLAN, DRINKING WATER IMPACT FEE ANALYSIS, AND DRINKING WATER IMPACT FEES IN THE CITY OF SARATOGA SPRINGS; AND OTHER RELATED MATTERS**

**WHEREAS,** on May 17th, 2017 the City properly noticed its intent to amend its Impact Fee Facilities Plan, Impact Fee Analysis, and Impact Fees for Drinking Water facilities on the Utah Public Notice Website; and

**WHEREAS,** the City held open houses on August 9, 2017 and November 1, 2017 to receive comments from the public, stakeholders, and development community regarding the City's amended Drinking Water impact fees; and

**WHEREAS**, Hansen Allen & Luce has re-assessed the level of Drinking Water facility service that is currently provided to existing residents, the excess capacity in the existing Drinking Water facilities infrastructure that is available to accommodate new growth without diminishing the current level of service provided to existing residents and the elements and cost of additional Drinking Water facilities that will be required to maintain the current level of service as projected grown occurs in the impact fee expenditure period; a copy of the 2017 Amended Drinking Water Impact Fee Facilities Plan, dated October 2017 is attached hereto as Exhibit "A"; and

**WHEREAS**, Hansen Allen & Luce certified its work as compliant with Utah Code § 11-36a-306; and

**WHEREAS**, the City has caused a Drinking Water Facilities Impact Fee Analysis to be prepared by Hansen Allen & Luce; and

**WHEREAS**, Hansen Allen & Luce has identified a maximum Drinking Water Facilities Impact Fee based on the Drinking Water Impact Fee Facilities Plan; a copy of the Drinking Water Impact Fee Facilities Analysis prepared by Hansen Allen & Luce, dated October 2017, is attached hereto as Exhibit "A"; and

**WHEREAS**, the City properly noticed its intent to amend the Drinking Water Impact Fee Facilities Plan and Analysis as well as its intent to hold a public hearing and possibly adopt this Ordinance; and

**WHEREAS**, the City of Saratoga Springs is a fourth class city of the State of Utah, authorized and organized under the provisions of Utah law and is authorized pursuant to the Impact Fee Act, Utah Code § 11-36a-101 *et seq.* to adopt Drinking Water facilities impact fees; and

**WHEREAS**, on November 2, 2017, a full copy of the proposed amended Drinking Water Impact Fee Facilities Plan, the amended Drinking Water Impact Fee Analysis, this Drinking Water Impact Fee Enactment or Ordinance, along with an executive summary of the amended Drinking Water Impact Facilities Plan and Analysis that was prepared in a manner to be understood by a lay person, were made available to the public at the Saratoga Springs public Library, posted on the City's website, and the Utah Public Notice Website; and

**WHEREAS**, on or before November 3, 2017, the Daily Herald published notice of the date, time, and place of a public hearing to consider the Drinking Water Impact Fee Facilities Plan, Analysis, and Enactment; and

**WHEREAS**, on November 14, 2017, the City Council held a public hearing regarding the proposed and certified Drinking Water Impact Fee Facilities Plan, Drinking Water Impact Fee Analysis, and a draft of this Drinking Water Facilities Impact Fee Ordinance; and

**WHEREAS**, after careful consideration and review of the comments at the public hearing and the comments of the participants, the Council has determined that it is in the best interest of the health, safety, and welfare of the inhabitants of Saratoga Springs to adopt the amended Drinking Water Impact Fee Facilities Plan and Analysis as proposed, and in a manner that is consistent with the Impact Fees Act, enact this Ordinance to amend its current Drinking Water impact fees, provide for the calculation and collection of such fees, authorize a means to consider and accept an independent fee calculation for atypical development requests, provide for an appeal process consistent with the Impact Fees Act, and update its accounting and reporting method.

**NOW THEREFORE, BE IT ORDAINED**, by the City Council of the City of Saratoga Springs, Utah as follows.

## SECTION I – IMPACT FEE FACILITIES PLAN AND ANALYSIS: DRINKING WATER

The Drinking Water Impact Fee Facilities Plan and Impact Fee Analysis attached hereto as Exhibit A is hereby adopted.

## SECTION II – ENACTMENT

The following amendments, which are shown as underlines and strikethroughs, to Chapter 7.01 of the City Code are hereby made:

**Chapter 7.01. ~~Culinary~~Drinking Water Impact Fee.**

**Sections:**

**7.01.01. Definitions.**
**7.01.02 Adoption of Impact Fee Facilities Plan and Impact Fee Analysis**
**7.01.~~02~~03. Findings and Purpose.**
**7.01.~~03~~04. Establishment of ~~Culinary~~Drinking Water Service Area.**

**7.01.~~04~~05. Adoption and Imposition of ~~Culinary~~Drinking Water Impact Fees.**
**7.01.~~05~~06. Use of ~~Culinary~~Drinking Water Impact Fees.**
**7.01.~~06~~07. Adjustments.**
**7.01.~~07~~08. Accounting, Expenditure, and Refunds.**
**7.01.~~08~~09. Impact Fee Challenges and Appeals.**
**7.01.~~09~~10. Severability.**

**7.01.01. Definitions.**

As used in this Chapter the following terms shall have the meanings herein set out:

1. **"City"** means the City of Saratoga Springs and its incorporated boundaries.
2. **"CUWCD"** means the Central Utah Water Conservancy District.
~~2.~~3. **"~~Culinary~~Drinking Water Impact Fees"** means the ~~Culinary~~Drinking Water Impact Fees adopted and imposed by this Chapter on Development Activity within the City.
~~3.~~4. **"~~Culinary~~Drinking Water Public Facilities"** means the following capital facilities that have a life expectancy of ten or more years and are owned or operated by or on behalf of the City as well as water rights for ~~culinary~~drinking water owned by or on behalf of the City.
~~4.~~5. **"Development Activity"** or **"new development"** means any construction or expansion of a building, structure, or use, any change in use of a building or structure, or any changes in the use of land that creates additional demand and need for Public Facilities.
~~5.~~6. **"Equivalent Residential Connection" or "ERC"** means that measure of impact on public facilities equal to the impacts of one typical single-family detached dwelling unit in full time occupancy. One ERC is equivalent to 40 WSFU's (as defined below) and a fire flow of 1,500 gpm for a duration of 2 hours.
~~6.~~7. **"Utah Impact Fees Act"** means Utah Code 11-36a.
~~7.~~8. **"Water Supply Fixture Unit" or "WSFU"** means the International Plumbing Code ("IPC") fixture count method developed to predict water use for various fixture types. Each fixture type is assigned a load value in water supply fixture units (WSFU).

(Ord. 14-6; Ord. 11-9; Ord. 05-21)

**7.03.02. Adoption of Impact Fee Facilities Plan.**

The City Council hereby adopts the Impact Fee Facilities Plan and Impact Fee Analysis prepared and certified by Hansen Allen & Luce dated October 2017.

**7.01.~~02~~03. Findings and Purpose.**

1. The City Council hereby finds and determines: There is a need to establish a ~~culinary~~Drinking water facilities impact fee for a single service area to maintain the level of service for ~~culinary~~Drinking water proposed in the ~~Culinary~~Drinking Water Impact Fee Facilities Plan and Analysis.
2. The ~~2014~~ 2017 ~~Culinary~~Drinking Water Facilities Impact Fee Plan and Analysis identify the:

a. projected development activity in the City through ~~2020~~2026;
b. level of service for ~~culinary~~Drinking water facilities that serve existing residents;
c. excess ~~culinary~~Drinking water facilities capacity that is available to serve new growth in the existing infrastructure;
d. proposed level of service for the City, which does not raise the existing level of service for current residents;
e. additional capital facilities that are required to maintain the proposed ~~culinary~~Drinking water level of service without burdening existing residents with costs of new development activity; and
f. the maximum fee justified by the study.

(Ord. 14-6; Ord. 11-9; Ord. 05-21)

**7.01.~~03~~04. Establishment of ~~Culinary~~Drinking Water Service Area.**

The City Council hereby approves and establishes the City Wide ~~Culinary~~Drinking Water Service Area for which the ~~Culinary~~Drinking Water Impact Fee herein provided will be imposed.(Ord. 14-6; Ord. 11-9; Ord. 05-21)

**7.01.~~04~~05. Adoption and Imposition of ~~Culinary~~Drinking Water Impact Fees.**

1. A ~~Culinary~~Drinking Water Impact Fee for all new development activity shall be calculated in ~~three~~ two separate components, as follows:
   a. Indoor Water Use Component:
      ~~i.~~

| ~~Type~~ | ~~Per WSFU~~ | ~~w/Offset[1]~~ |
|---|---|---|
| ~~Source~~ | ~~$35.56~~41.85 | ~~-$33.34~~35.568.51 |
| ~~Storage~~ | ~~$13.70~~82 | ~~$13.82~~0 |
| ~~Pipe~~ | ~~$4.90~~ | ~~0~~ |
| ~~Planning~~ | ~~$0.60~~47 | ~~$0.47~~0 |
| ~~Total~~ | ~~$54.76~~56.14 | ~~$19.20~~47.63 |

~~[1] Properties designated on Appendix C of the Culinary Water Impact Fee and Analysis have incurred separate financial responsibility for a separately-supplied culinary Water source and are entitled to an offset for WSFU costs associated with the Citywide source cost component for Indoor Water Use.~~

| Indoor Water Component | Cost Attributed to Component | Total WSFU Capacity | Cost per wsfu |
|---|---|---|---|
| Wells | $1,459,048 | 162,880 | $8.96 |
| CUWCD | $59,958 | 133,240 | $0.45 |
| Source Conveyance | $9,740,497 | 296,120 | $32.89 |
| Storage | $4,093,020 | 296,120 | $13.82 |
| Planning | $140,000 | 296,120 | $0.47 |
| **TOTAL (WELLS)** | | | **$56.14** |
| **TOTAL (CUWCD)** | | | **$47.63** |

~~ii.~~i. The typical residential connection equals 40 WSFU ~~The minimum multiple for a primary home, single family detached structure is 40 WSFU~~ (1 ERC). Therefore, the indoor water use component of the impact fee for a typical residential connection is $2,246 for development using water right credits in City wells or underground water rights approved by the City Attorney and $1,905 using CUWCD water;

b. Fire Flow Capacity:

| Fire Flow Requirement (gpm) | Fire Flow Duration Requirement* (hours) | Fire Volume ~~(MG)~~ Requirement (MG) | ~~Unit~~ Cost Distribution Units | Fee per Connection |
|---|---|---|---|---|
| 1,500 | 2 | 0.18 | 1 | $~~207~~285 |
| 1,750 | 2 | 0.21 | 2 | $5~~16~~99 |
| 2,000 | 2 | 0.24 | ~~5~~4 | $~~953~~1,044 |
| 2,250 | 2 | 0.27 | ~~8~~6 | $1,~~603~~704 |
| 2,500 | 2 | 0.30 | ~~13~~10 | $2,~~649~~768 |
| 2,750 | 2 | 0.33 | ~~22~~16 | $4,~~531~~674 |
| 3,000 | 3 | 0.54 | ~~128~~94 | $26,~~497~~777 |
| 3,250 | 3 | 0.59 | ~~162~~119 | $33,~~557~~994 |
| 3,500 | 3 | 0.63 | ~~208~~153 | $~~42~~43,~~971~~467 |
| 3,750 | 3 | 0.68 | ~~276~~201 | $57,~~091~~245 |
| 4,000 | 4 | 0.96 | ~~1,140~~875 | $~~235,952~~249,224 |

~~c. Water Rights[2]:~~

~~i. $33.88 per WSFU;~~

~~ii. Equivalent pre-paid water right credit; or~~

~~iii. Equivalent City-approved leased or deeded water right.~~

2. The total drinking impact fee per typical residential connection with existing City Well Water Rights or underground water rights approved by the City Attorney is as follows:

| Component | Per WSFU | Per Typical Residential Connection |
|---|---|---|
| Indoor Water | $56.14 | $2,246 |
| Fire Flow | $7.13 | $285 |
| **Total** (source capacity from well water rights) | **$63.27** | **$2,531** |

3. The total drinking impact fee per typical residential connection with CUWCD Water Rights is as follows:

| Component | Per WSFU | Per Typical Residential Connection |
|---|---|---|
| Indoor Water | $47.63 | $1,905 |
| Fire Flow | $7.13 | $285 |
| **Total** (source capacity from CUWCD) | **$54.76** | **$2,190** |

(Ord. 14-6; Ord. 11-9; Ord. 05-21)

**7.01.~~05~~06. Use of ~~Culinary~~Drinking Water Impact Fees.**

The ~~Culinary~~Drinking Water Impact Fees collected by the City shall be used as provided in the ~~Culinary~~Drinking Water Impact Fee Facilities Plan and Analysis.

(Ord. 14-6; Ord. 11-9; Ord. 05-21)

**7.01.~~06~~07. Adjustments.**

1. The City shall adjust the calculation of all, or any component, of the ~~Culinary~~Drinking Water I~~i~~mpact F~~f~~ees imposed by this Chapter as necessary to:

   a. respond to unusual circumstances in specific cases;
   b. ensure that the impact fees are imposed fairly; and

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~~[2] Properties designated on Appendix C of the Culinary Water Impact Fee and Analysis have incurred separate financial responsibility for dedicated water rights and are entitled to an offset of citywide costs associated with acquiring culinary water rights.~~

c. adjust the amount of the Impact Fees to be imposed on a particular development based upon studies and data submitted by the developer that are approved by the City Council.

2. The City Council shall allow proportionate credit against, or proportionate reimbursement from, impact fees for the:
   a. dedication of land for; or
   b. full or partial construction of a:
      i. System Improvement identified in the Impact Fee Facilities Plan; or
      ii. Publicly accepted and dedicated capital improvement that will offset the need for a System Improvement.

(Ord. 14-6; Ord. 11-9; Ord. 05-21)

**7.01.~~07~~08. Accounting, Expenditure, and Refunds.**

The City shall account for, expend, and refund ~~Culinary~~Drinking Water Impact Fees in accordance with this Chapter and the Utah Impact Fee Act.

(Ord. 14-6; Ord. 11-9; Ord. 05-21)

**7.01.~~08~~09. Impact Fee Challenges and Appeals.**

1. Any person required to pay an Impact Fee who believes the fee does not meet the requirements of the Impact Fees Act or this Chapter may file a written request for information with the City.

2. The City shall provide the person with a copy of the Impact Fee Facilities Plan and Analysis for ~~Culinary~~Drinking Water, the specific calculation staff used to calculate the ~~Culinary~~Drinking Water Impact Fee for the person, if applicable, and any other relevant information relating to the Impact Fees. The City may charge for all copies provided for in response to such a request in an amount set out in the City's Consolidated Fee Schedule.

3. At any time prior to thirty days after paying an Impact Fee, the person required to pay an Impact Fee and wishes to challenge the fee may request a third party advisory opinion in accordance with UCA §13-43-205.

4. Within thirty days after paying an Impact Fee, any person who has paid the fee and wishes to challenge the fee shall file:
   a. a written appeal with the City Hearing Examiner,
   b. a request for arbitration; or
   c. an action in district court.

5. The written appeal shall be delivered to the City Manager and shall set forth in detail all grounds for the appeal and all facts relied upon by the appealing party with respect to the fee being appealed.

a. Upon receipt of an appeal, the City Hearing Examiner shall schedule a hearing and shall consider all evidence presented by the appellant, as well as all evidence presented by staff. The City Hearing Examiner shall schedule the appeal hearing and thereafter render its written findings of fact, conclusions of law, and decision no later than thirty days after the challenge to the impact fee is filed.
b. Within ninety days of a decision upholding an Impact Fee by the City Hearing Examiner or within 120 days after the date the challenge to the impact fee was filed, whichever is earlier, the person who filed the appeal may petition the Fourth Judicial District Court for Utah County for review of the Hearing Examiner's decision. In the event of a petition to the Fourth Judicial District Court, the City shall transmit to the reviewing court the record of its proceedings including its minutes, findings, orders and, if available, a true and correct transcript of its proceedings.
    i. If the proceeding was tape recorded, a transcript of that tape recording is a true and correct transcript for purposes of this Subsection.
    ii. If there is an adequate record, the:
        1. court's review is limited to the record provided by the City; and
        2. court may not accept or consider any evidence outside the City's record unless that evidence was offered to the City Hearing Examiner and the court determines that it was improperly excluded by the City Hearing Examiner.
    iii. If there is an inadequate record, the court may call witnesses and take evidence.
    iv. The court shall affirm the decision of the City Hearing Examiner if the decision is supported by substantial evidence.

6. If the request is for arbitration, both the City and the person requesting arbitration shall comply with UCA §11-36a-705.

7. Within thirty days after paying an Impact Fee, the state, a school district or a charter school may alternatively submit a written request for mediation to the City Manager.
    a. Both the City and the specified public agency shall comply with UCA §11-36a-704.

(Ord. 14-6; Ord. 11-9; Ord. 05-21)

**7.03.~~09~~10. Severability.**

If any section, subsection, sentence, clause, or portion of this Chapter is, for any reason, held invalid or unconstitutional by a court of competent jurisdiction, the remainder of this Chapter shall not be affected thereby and shall remain in effect and be enforced to the extent permitted by law.

(Ord. 14-6; Ord. 11-9; Ord. 05-22)

## SECTION III – AMENDMENT OF CONFLICTING ORDINANCES

If any ordinance, resolution, policy or map of the City heretofore adopted is inconsistent herewith it is hereby amended to comply with the provisions hereof. If it cannot be amended to comply with the provisions hereof, the inconsistent provision is hereby repealed.

## SECTION IV – EFFECTIVE DATE

This ordinance shall take effect upon publication and 90 days after its passage by a majority vote of the Saratoga Springs City Council.

## SECTION V – SEVERABILITY

If any section, subsection, sentence, clause, phrase, or portion of this ordinance is, for any reason, held invalid or unconstitutional by any court of competent jurisdiction, such provision shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of this ordinance.

## SECTION VI – PUBLIC NOTICE

The Saratoga Springs City Recorder is hereby ordered, in accordance with the requirements of Utah Code §§ 10-3-710—711, to:

a. deposit a copy of this ordinance in the office of the City Recorder; and
b. publish notice as follows:
   i. publish a short summary of this ordinance for at least one publication in a newspaper of general circulation in the City; or
   ii. post a complete copy of this ordinance in three public places within the City.

**ADOPTED AND PASSED** by the City Council of the City of Saratoga Springs, Utah, this 14th day of November 2017.

Signed: _____
Jim Miller, Mayor

Attest: _____
Cindy LoPiccolo, City Recorder

City Of Saratoga Springs Corporate Seal State Of Utah

**VOTE**

| | |
|---|---|
| Shellie Baertsch | aye |
| Chris Porter | aye |
| Michael McOmber | aye |
| Ryan Poduska | aye |
| Stephen Willden | aye |

# EXHIBIT A
## Impact Fee Facilities Plan and Impact Fee Analysis

AFFP
17159-PUBLIC NOTICE Notice

# Affidavit of Publication

STATE OF UTAH }
COUNTY OF UTAH } SS

Miranda Hubert, being duly sworn, says:

That she is Legal Billing Clerk of the Daily Herald, a newspaper of general circulation, printed and published in Provo, Utah County, Utah; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

November 17, 2017

PUBLIC NOTICE
Notice is hereby given that the City Council of the City of Saratoga Springs, Utah, at their meeting of November 14th 2017, passed and adopted the following Ordinances:
Ordinance no. 17-33 (11-14-17) an ordinance and enactment amending the city's drinking water impact fee facilities plan, drinking water impact fee analysis, and drinking water impact fees in the city of Saratoga Springs; and other related matters
Ordinance no. 17-34 (11-14-17) an ordinance and enactment amending the city's secondary water impact fee facilities plan, secondary water impact fee analysis, and secondary water impact fees in the city of Saratoga Springs; and other related matters
Ordinance no. 17-35 (11-14-17) an ordinance granting Level 3 Communications, LLC, a Delaware limited liability company, a nonexclusive franchise to operate an internet services network in the city of Saratoga Springs.
Copies of these Ordinances are on file in the office of the City of Saratoga Springs City Recorder and are available for review during City business hours.
/s/ Cindy LoPiccolo, City Recorder
Legal Notice 17159 Published in The Daily Herald November 17, 2017.

That said newspaper was regularly issued and circulated on those dates. Same was also published online at utahlegals.com, according to Section 45-1-101 - Utah Code Annotated, beginning on the first date of publication, for at least 30 days thereafter and a minimum of 30 days prior to the date of scheduled sale.
SIGNED: Miranda Hubert
Legal Billing Clerk

Subscribed to and sworn to me this 17th day of November 2017.

Willy Shaw
Willy Shaw, Notary Public, Utah County, Utah

My commission expires: September 24, 2021

WILLY SHAW
NOTARY PUBLIC · STATE OF UTAH
COMMISSION# 697006
COMM. EXP. 09-24-2021

00001102 00017159

City of Saratoga Springs - leg
City of Saratoga Springs - legal
1307 N. Commerce Dr.
Saratoga Springs, UT 84045

CITY OF

SARATOGA SPRINGS

# DRINKING WATER IMPACT FEE FACILITY PLAN AND IMPACT FEE ANALYSIS

**(HAL Project No.: 360.07.300)**

**OCTOBER 2017**

# CITY OF SARATOGA SPRINGS

# DRINKING WATER

# IMPACT FEE FACILITY PLAN AND IMPACT FEE ANALYSIS

**(HAL Project No.:360.07.300)**

**Steven C. Jones, P.E.**

**Project Engineer**

**OCTOBER 2017**

# IMPACT FEE CERTIFICATION

The Utah Impact Fee Act requires certifications for the Impact Fee Facilities Plan (IFFP) and the Impact Fee Analysis (IFA). Hansen, Allen & Luce provides these certifications with the understanding that the recommendations in the IFFP and IFA are followed by City Staff and elected officials. If all or a portion of the IFFP or IFA are 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, Inc. is assumed to be correct, complete, and accurate.

**IFFP Certification**

Hansen, Allen & Luce, Inc. certifies that the Impact Fee Facilities Plan (IFFP) 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; and
3. complies in each and every relevant respect with the Impact Fees Act.

HANSEN, ALLEN & LUCE, INC.

**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 Facilities Plan (IFFP) and the Impact Fee Analysis (IFA) is to comply with the requirements of the Utah Impact Fees Act 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 Culinary Water System IFFP and IFA prepared in 2014 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 significant **change** in this update is 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). As a result, it is recommended that the water right component of the impact fee be removed and the cost for source be reduced for those using CUWCD water because the City's wholesale connection capacity is less expensive than well capacity. The wholesale water has a much higher upfront cost and long term cost. However, the City has not paid and do not plan to pay the upfront costs of the wholesale water and the long term costs are not impact fee eligible.

The impact fee **service area** is the drinking water system service area, which includes the current city boundary and future areas anticipated to be annexed into the city.

There are two **components** to the drinking water impact fee. The first component is indoor water which includes: well source capacity, CUWCD source capacity, storage conveyance, associated pipelines and planning. The second component is fire flow.

The impact **fee unit** for indoor water use is based on the International Plumbing Code (IPC), issued by the International Code Council as a method to size the water meter and piping by the number of water fixtures and the type of water fixtures a building has. Each fixture type is assigned a load value in water supply fixture units (wsfu). The impact fee unit for fire flow is based on fire suppression requirements specified by the International Fire Code (IFC), issued by the International Code Council. A fire flow impact fee distribution unit was calculated to represent the equitable distribution of the fire flow capacity cost for each fire flow requirement.

The **level of service** for indoor drinking water supply is 10 gallons per day (gpd) per wsfu or 400 gpd per typical single family residential connection and maintaining a pressure of 40 pounds per square inch (psi). The level of service for fire flow is 1,500 gpm for 2 hours for a typical single family residential connection while maintaining a pressure of 20 psi.

The existing system served about 6,494 connections at the beginning of 2017. Projected **growth** adds 7,403 equivalent connections (296,120 wfsu) in the next 10 years for a total of 13,897 connections or equivalent.

The existing drinking water system has no existing deficiencies. The costs calculated for the capacity required for growth in the next 10 years comes from the proportional historical buy-in costs of **excess capacity** and new projects required entirely to provide capacity for the new development. The following table is a summary of the costs associated with providing capacity for growth in the next 10 years.

## INDOOR WATER IMPACT FEE COSTS

| COMPONENT | COST |
|---|---|
| **WELLS** | $1,459,048 |
| **CUWCD** | $59,958 |
| **SOURCE CONVEYANCE** | $9,740,497 |
| **STORAGE** | $4,093,020 |
| **WATER RIGHTS** | $0 |
| **PLANNING** | $140,000 |
| **TOTAL COST** | **$15,492,523** |

The **indoor water impact fee** is calculated based on whether the new development has well water rights or if source water capacity will be purchased from CUWCD. This will allow for development to pay their fair share of the facilities used for the source water available to the development. The projected growth in the next 10 years is 296,120 wfsu or 7,403 equivalent residential connections. The wells have 162,880 wsfu of remaining capacity. Therefore the 133,240 wsfu of remaining source capacity needed is assumed to come from CUWCD over the next ten year window. The fee is $2,246 per typical single family connection or **$56.14 per wsfu** for those with well water rights. The fee is $1,905 per typical single family connection or **$47.63 per wsfu** for those acquiring source water from CUWCD.

**Fire flow impact fee** costs attributed to growth in the next 10 years is $3,056,881. A fire flow impact fee distribution unit was calculated to represent the equitable distribution of the fire flow capacity cost for each fire flow requirement. The following table is the per connection fire flow impact fee for each fire flow requirement.

## FIRE FLOW IMPACT FEE

| Fire Flow Requirement (gpm) | Fire Flow Duration Requirement (hours) | Fee per Connection |
|---|---|---|
| 1,500 | 2 | $285 |
| 1,750 | 2 | $599 |
| 2,000 | 2 | $1,044 |
| 2,250 | 2 | $1,704 |
| 2,500 | 2 | $2,768 |
| 2,750 | 2 | $4,674 |
| 3,000 | 3 | $26,777 |
| 3,250 | 3 | $33,994 |
| 3,500 | 3 | $43,467 |
| 3,750 | 3 | $57,245 |
| 4,000 | 4 | $249,224 |

The impact fee for a typical single family residential connection requiring 40 wsfu, using well water rights, and requiring a 1,500 gpm fire flow would have an impact fee of **$2,531** (see the following table).

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

| Component | Per WSFU | Per Typical Residential Connection |
|---|---|---|
| Indoor Water | $56 | $2,246 |
| Fire Flow | $7 | $285 |
| **Total** (source capacity from well water rights) | **$63** | **$2,531** |

Note: 40 wsfu = 1 Typical residential connection

The typical single family residential connection requiring 40 wsfu, purchasing source water capacity from CUWCD, and requiring a 1,500 gpm fire flow would have an impact fee of **$2,190** (see the following table). This includes $1,905 for indoor water capacity and $285 for fire flow capacity.

**TOTAL PROPOSED IMPACT FEE PER TYPICAL SINGLE FAMILY CONNECTION WITH CUWCD WATER**

| Component | Per WSFU | Per Typical Residential Connection |
|---|---|---|
| Indoor Water | $48 | $1,905 |
| Fire Flow | $7 | $285 |
| **Total** (source capacity from CUWCD) | **$55** | **$2,190** |

Note: 40 wsfu = 1 Typical residential connection

# SECTION 1
# INTRODUCTION

## 1.1 Background

The City of Saratoga Springs has experienced tremendous growth since the early 2000's that has transformed the once largely agricultural community into an urbanized region of northern Utah County. Residential and commercial developments are being established at a rapid pace with additional open space available for future growth. As this growth continues additional drinking water facilities will be required to provide an adequate water system that meets the City's current level of service for indoor water use.

The City has recognized the importance to plan for increased demands on its drinking water system from new development as a result of the rapid growth. A Drinking Water Impact Fee Facilities Plan (IFFP) and Impact Fee Analysis (IFA) update was required 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.

## 1.2 Purpose

The purpose of the IFFP and IFA is to comply with the requirements of the Utah Impact Fees Act 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 Culinary Water System IFFP and IFA prepared in 2014 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 significant change in these updates is no remaining capacity of groundwater source is available for future growth.

This report identifies those items that the Utah Impact Fees Act specifically requires including demands placed upon existing facilities by new development activity and the proposed means by which the municipality will meet those demands. In preparing this report a systematic approach was utilized to evaluate the existing and planned drinking water facilities identified in the City's master planning efforts. Each facility's capacity was evaluated in accordance with the selected level of service to determine the appropriate share between existing demand and future demands. This approach was taken in order to determine the "proportional share" of improvement costs between existing users and future development users. The basis for this report was to provide proposed project costs and the fractional cost associated with future development. The following analyses were performed to meet the study's objectives:

1) Identify the existing and proposed City drinking water facilities;
2) Identify the existing level of service for the system;
3) Identify a proposed level of service for the system;

4) Identify if any deficiencies are present in the existing system utilizing the proposed level of service;
5) Identify any excess capacity in the existing system facilities using the proposed level of service;
6) Identify the phasing of new development and the appropriate facilities needed to support the development;
7) Project growth in water demands attributable to new development within the existing system;
8) Determine projects required by the new water demands to provide the proposed level of service to future development without compromising the level of service provided to existing residents;
9) Establish construction phasing of proposed capital facilities;
10) Prepare detailed cost estimates for each proposed project;
11) Determine if proposed projects will provide capacity for growth beyond the IFFP planning period
12) Separate and identify infrastructure costs to maintain the proposed level of service for existing residents versus infrastructure costs to provide capacity at the proposed level of service for future development, and then identify and subtract the proportionate cost of any excess capacity for growth that is projected to occur beyond the 10 year planning window for the IFFP;

## 1.3 Impact Fee Collection

Impact fees enable local governments to finance public facility improvements necessary to service new developments without burdening existing development with capital facilities construction costs that are exclusively attributable to growth.

An impact fee is a one-time charge on new development to pay for that portion of a public facility that is required to support that new development.

In order to determine the appropriate impact fee, the cost of the facilities associated with future development must be proportionately distributed. As a guideline in determining the "proportionate share", the fee must be found to be roughly proportionate and reasonably related to the impact caused by the new development.

## 1.4 Master Planning

The Drinking Water System Master Plan and Capital Facility Plan have also been updated to support this analysis. The master plan for the City's drinking water system is more comprehensive than the IFFP and IFA. It provides the basis for the IFFP and IFA as well as identifies all Capital Facilities required of the Drinking Water System for the 20-year planning range including maintenance, repair, replacement, as well as growth related project recommendations. The recommendations made within the master plan are in compliance with current City policies and standard engineering practices.

A hydraulic model of the Drinking Water System was prepared to aid in the analyses performed to complete the Drinking Water System Master Plan. The model was used to assess existing performance, level of service, to establish a proposed level of service and to confirm the effectiveness of the proposed capital facility projects to maintain the proposed level of service over the next 10 years.

# SECTION 2
# EXISTING DRINKING WATER SYSTEM

## 2.1 General

The purpose of this section is to provide information regarding the existing Drinking Water System, identify the current level of service, and analyze the remaining capacity of the existing system's facilities.

Saratoga Springs' existing drinking water system is comprised of a pipe network, water storage facilities, and water sources. These facilities are found within three separate pressure zones. Figure 2-1 illustrates the existing water system that services the entire City.

## 2.2 Pressure Zones

Currently, the drinking water distribution system serving Saratoga Springs has three pressure zones. Zone 2 and 3 are split north and south as they are not interconnected. The pressure zones were designed to provide pressures between 40-120 psi.

## 2.3 Existing City Secondary Water System

To preserve drinking water sources, the City has a Secondary Water System that provides outdoor irrigation. The secondary system is master planned to be an independent system, but currently the Secondary Water System can be supplemented by excess capacity in the Drinking Water System. Separate drinking water and secondary water pipelines exist in all developments. However, a few isolated developments currently rely on the Drinking Water System to provide storage and source water to the secondary water pipelines. As the excess capacity in the Drinking Water System is needed for future growth, Secondary Water System facilities will be constructed to increase the capacity of the Secondary Water System. A Secondary Water System Master Plan was prepared in conjunction with the Drinking Water System Master Plan. For both the Drinking Water System Master Plan and the Secondary Water System Master Plan each system was analyzed with no sharing of capacity for future projections. It was assumed for all calculations that no Secondary Water System facilities are being supplemented by Drinking Water System capacity. Additional information regarding the Secondary Water System may be found in Secondary Water System Master Plan, IFFP, and IFA.

## 2.4 Existing Equivalent Residential Connections

Water demands from non-residential water users, such as commercial, industrial, or civic water users have been converted to an Equivalent Residential Unit (ERC) for analytical purposes. The use of ERCs is a common engineering practice to describe the entire system's usage based upon a common unit of measurement. An ERC is equal to the average demand of one

residential connection. The method of using ERCs for analysis is a way for allocating existing and future demands over non-residential land uses. An ERC quantifies the ratio of non-residential water demands relative to an equivalent residential level of service demand. For this analysis all residential connections, including townhouses and apartments were equated to one ERC for indoor water demands.

The City assigns non-residential development an ERC value based on a fixture count that is performed at the issuance of the Building Permit. The fixture count is based on the International Plumbing Code (IPC), issued by the International Code Council. The IPC fixture count method was developed to predict water use for various fixture types. Each fixture type is assigned a load value in water supply fixture units (wsfu). For example, a kitchen sink has a load factor of 1.4 wsfu based on how much water is used at a kitchen sink. A typical residential toilet has a load factor of 2.2 wsfu because a toilet uses more water than a kitchen sink. Once all the fixtures are identified, all the fixture units are added together for a total fixture unit count. One ERC is equivalent to 40 wsfu.

At the end of 2016, the City's database had a total of 6,494 ERCs. For a validation of the City's ERC calculation, past water meter information was used to calculate an ERC for each non-residential connection based on actual drinking water use. For example, a non-residential connection with an average usage 20 times more than the average day residential usage was assigned an ERC of 20.

Even though ERC's were used to quantify existing demand and to predict future demand for the Master Plan, it is recommended that the City continue to use the IPC fixture count method to calculate predicted demand of new development.

The level of service provided by the Drinking Water System has been established by the City to provide a reasonable supply of indoor water, fire suppression capacity, and water rights to assure that the system does not run out of water. This level of service establishes the sizing criteria for the City's distribution (pipelines), source, storage facilities, and water rights for the Drinking Water System. The level of service standards are provided below:

**Indoor Water Supply**

- Well Source Capacity: 10 gpd per wsfu plus 10 gpd per wsfu for redundancy
- Pump Station Source Capacity: 10 gpd per wsfu plus 10 gpd per wsfu for redundancy
- Wholesale Indoor Water Source Capacity: 10 gpd per wsfu
- Indoor Water Storage Capacity: 10 gpd per wsfu
- Pipe Capacity: 40 psi minimum during peak day demand conditions and 30 psi minimum during peak instantaneous conditions

Well and pump station sources require more capacity than source supplied by a wholesale connection because it cannot be assumed that pumps run 100% of the time. Also, redundant

pumps are required to provide source when primary pumps fail. Wholesale connections rely on the redundancy provided by the wholesaler and do not rely on mechanical facilities maintained by the City.

**Fire Suppression**

- Minimum Fire Flow: 1,500 gpm for 2 hours (180,000 gallons) as directed by the Fire Marshall from the International Fire Code (IFC), issued by the International Code Council.
- Maximum Fire Flow: 4,000 gpm for 4 hours (960,000 gallons) as directed by the Fire Marshall from the IFC.
- Fire Suppression Storage Capacity: as required by the Fire Marshall (see Table 2-4 for a summary of fire suppression storage by pressure zone)
- Minimum Pressure: 20 psi residual during peak day + fire flow event

**Water Rights**

- Yearly Volume: 10 gpd per wsfu (0.011 ac-ft per wsfu)

## 2.5 Methodology Used to Determine Existing System Capacity

The method for determining the remaining capacity in the system for indoor water supply was based on the defined level of service in terms of wsfu. Each component of the Drinking Water System was assessed a capacity in terms of wsfu. The components include: Source (wells, wholesale connections, and pump stations), Storage (tanks and associated transmission lines), Fire Suppression (storage and main transmission line capacity associated with providing fire suppression capacity), and water rights. Each component was also assigned a number of existing wsfu currently using each component. The difference between the wsfu capacity and wsfu existing demand for each component is the remaining capacity. For example, to calculate the remaining capacity for source in wsfu, the required source for existing users in wsfu is subtracted from the capacity of the wells in wsfu. For storage, the required storage for existing users in wsfu is subtracted from the capacity of the tanks in wsfu to calculate the remaining capacity for storage in wsfu.

A hydraulic model was developed for the purpose of assessing system operation and capacity. For pipelines, the model was used to calculate a capacity in terms of wsfu for each pipeline and to assign capacity for indoor water use and fire suppression. The capacity for each pipeline in wsfu is estimated by the flow capacity of the pipe at a velocity of 5 feet per second subtracted by the minimum fire flow requirement of 1,500 gpm and dividing the remainder by 10 gpd per wsfu. The transmission pipelines out of Tanks 4, 5, 6 and 7 down to the first intersection include a fire flow capacity of 2,000 gpm and larger based on the fire flow assumed from these tanks. Capacity, demand and remaining capacity is presented in the following paragraphs for each component of the Drinking Water System.

## 2.6 Water Source & Remaining Capacity

Drinking water source primarily comes from groundwater wells. However, the City has also begun using Central Utah Water Conservancy District (CUWCD) to provide drinking water source. There is additional physical groundwater and water right capacity remaining, but this is mostly in the form of water right credit owned by developers. An assessment of available water rights and physical groundwater capacity of drinking water quality is limited. Once the capacity is gone, all future drinking water source and water rights will be from CUWCD.

All current wells, located on the eastern border of the City, are actively used throughout the year on a rotating basis. The active wells are equipped with either submersible or vertical turbine pumps. These wells provide the well source capacity level of service of 10 gpd/wsfu for indoor water use and 10 gpd/wsfu for redundancy. For the summer of 2016 and 2017, several of the drinking water wells are producing half capacity due to groundwater and well conditions. Because of the lack of excess redundancy capacity available to supplement the secondary water system, CUWCD water needed to be purchased earlier than planned. Table 2-1 summarizes the information of each well and all sources total. A wsfu count was not allocated to specific wells as all sources are in the same zone. Currently the City has chlorination stations at Wells 2 and 6.

**Table 2-1**
**Existing Water Sources**

| Name | Capacity (gpm) | Capacity (wsfu) | Existing Demand (gpm) | Existing Demand (wsfu) | Remaining Capacity (gpm) | Remaining Capacity (wsfu) |
|---|---|---|---|---|---|---|
| Well No. 1 | 1,000 | 72,000 | - | - | - | - |
| Well No. 2 | 1,020 | 73,440 | - | - | - | - |
| Well No. 3 | 1,750 | 126,000 | - | - | - | - |
| Well No. 4 | 1,000 | 72,000 | - | - | - | - |
| Well No. 6 | 1,100 | 79,200 | - | - | - | - |
| **TOTAL** | **5,870** | **422,640** | **3,608** | **259,760** | **2,262** | **162,880** |

The City operates pump stations to move water from a lower zone to a higher zone. These pump stations provide the water source to the upper zones and therefore must meet the pump station source capacity level of service of 10 gpd/ wsfu for indoor use and 10 gpd/ wsfu for redundancy. Table 2-2 is a summary of the pump station information for drinking water demands in units of wsfu. Table 2-3 is a summary of the pump station information for drinking water demands in GPM.

**Table 2-2**
**Existing Pump Station Summary by wsfu**

| Zone | Name | Capacity (wsfu) | Existing Demand (wsfu) | Remaining Capacity (wsfu) |
|---|---|---|---|---|
| 2 South | PS 1 (Grandview) | 180,000 | 82,160 | 97,840 |
| 2 North | PS 2 (Harvest Hills) | 72,000 | 54,576 | 17,424 |
| 2 North | Crossroads Blvd | 144,000 | 24,048 | 119,952 |
| 3 North | PS 3 (Harvest Moon) | 36,000 | 9,504 | 26,496 |
| 3 South | PS 4 (Fox Hollow) | 313,200 | 2,952 | 310,248 |

**Table 2-3**
**Existing Pump Station Summary by GPM**

| Zone | Name | Capacity (gpm) | Existing Demand (gpm) | Remaining Capacity (gpm) |
|---|---|---|---|---|
| 2 South | PS 1 (Grandview) | 2,500 | 1,141 | 1,359 |
| 2 North | PS 2 (Harvest Hills) | 1,000 | 758 | 42 |
| 2 North | Crossroads Blvd | 2,000 | 334 | 1,666 |
| 3 North | PS 3 (Harvest Moon) | 500 | 132 | 368 |
| 3 South | PS 4 (Fox Hollow) | 4,350 | 41 | 4,309 |

## 2.7 Storage Facilities & Remaining Capacity

Saratoga Springs currently operates seven buried concrete water storage tanks serving the City. Each pressure zone has at least one tank to provide storage. Storage requirements are determined on a per zone basis. Some fire flow is shared between zones through PRV's in the system to transfer water from a higher zone to a lower zone during fire events or high peak demands. The total storage capacity is 12.95 million gallons. All tanks were constructed in the last 15 years and are in good condition.

The storage level of service is 10 gallons of storage per wsfu plus fire flow storage. The fire flow storage requirements were provided by the Fire Marshall as per IFC. The amount of fire suppression storage was assigned to each tank based on available capacity for fire storage in the tank, the amount of fire flow in the pressure zone or zones the tank can serve, and the

capacity of the transmission lines from the tank to where the largest fire flows are required. The required fire storage capacity and existing capacity for each pressure zone is found in Table 2-4. The capacity of each tank was analyzed in respect to the zone it serves. It was assumed that storage in upper pressure zones could assist in providing a portion of the required fire flow demand to a lower zone. Table 2-5 is a summary of the storage facility information. Capacity calculations are shown in Table 2-5 for each tank and account for fire suppression storage volumes.

**Table 2-4**
**Existing Fire Suppression Storage by Zone**

| Zone | Fire Flow (GPM) | Fire Duration (HOURS) | Fire Storage (MG) | Existing Fire Storage in Zone (MG) | Existing Fire Storage From Upper Zones (MG) |
|---|---|---|---|---|---|
| 1 | 4,000 | 4 | 0.96 | 0.72 | 0.24 |
| 2 North | 3,000 | 3 | 0.54 | 0.30 | 0.24 |
| 2 South | 4,000 | 4 | 0.96 | 0.68 | 0.28 |
| 3 North | 2,000 | 2 | 0.24 | 0.24 | - |
| 3 South | 2,000 | 2 | 0.24 | 0.24 | - |
| **Total** | **-** | **-** | **2.94** | **2.18** | **0.76** |

The following are assumptions for fire flow storage at each tank:

- Tank 1-The recommended fire flow for Zone 1 is 4,000 gpm for 4 hours, or 0.96 MG. Tank 1 supplies about 1,000 gpm, or 0.24 MG. The remainder was assigned to Tanks 5 and 3.
- Tank 5-The recommended fire flow for Zone 1 is 4,000 gpm for 4 hours, or 0.96 MG. Tank 5 supplies about 2,000 gpm, or 0.48 MG. The remainder was assigned to Tanks 1 and 3.
- Tank 3-The recommended fire flow for Zone 2 North is 3,000 gpm for 3 hours, or 0.54 MG. Tank 3 supplies 0.30 MG. The remainder was assigned to Tank 4. Tank 3 may also supply fire flow to Zone 1.
- Tank 2-The recommended fire flow for Zone 2 South is 4,000 gpm for 4 hours, or 0.96 MG. Tank 2 supplies about 850 gpm, or 0.20 MG. The remainder was assigned to Tanks 6, 4, and 7.

- Tank 6-The recommended fire flow for Zone 2 South is 4,000 gpm for 4 hours, or 0.96 MG. Tank 6 supplies about 2,000 gpm, or 0.48 MG. The remainder was assigned to Tanks 2, 4, and 7.
- Tank 4-The recommended fire flow for Zone 3 North is 2,000 gpm for 2 hours, or 0.48 MG. Half of the requirement (1,000 gpm or 0.24 MG) was assigned to Tank 4. Tank 4 may also supply fire flow to Zone 2 North or Zone 2 South.
- Tank 7- The recommended fire flow for Zone 3 North is 2,000 gpm for 2 hours, or 0.48 MG. Half of the requirement (1,000 gpm or 0.24 MG) was assigned to Tank 7. Tank 7 may also supply fire flow to Zone 2 North.

**Table 2-5**
**Existing Storage Tank Summary**

| Tank | Zone | Total Capacity (MG) | Fire Storage (MG) | Demand Storage (MG) | Emergency Storage (MG) | Remain. Capacity (MG) | Total Capacity (wsfu) | Remain. Capacity (wsfu) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.75 | 0.24 | 0.36 | 0.15 | 0.00 | 36,000 | 0 |
| 5 | 1 | 3.0 | 0.48 | 0.51 | 0.15 | 1.86 | 237,000 | 186,000 |
| 3 | 2 N | 2.0 | 0.30 | 0.79 | 0.15 | 0.76 | 155,000 | 76,000 |
| 2 | 2 S | 1.0 | 0.20 | 0.27 | 0.15 | 0.38 | 65,000 | 38,000 |
| 6 | 2 S | 3.0 | 0.48 | 0.55 | 0.15 | 1.82 | 237,000 | 182,000 |
| 4 | 3 N | 1.2 | 0.24 | 0.10 | 0.15 | 0.71 | 81,000 | 71,000 |
| 7 | 3 S | 2.0 | 0.24 | 0.03 | 0.15 | 1.58 | 161,000 | 158,000 |
| **Total** | | **12.95** | **2.18** | **2.61** | **1.05** | **7.11** | **972,000** | **711,000** |

## 2.8 Water Rights & Remaining Capacity

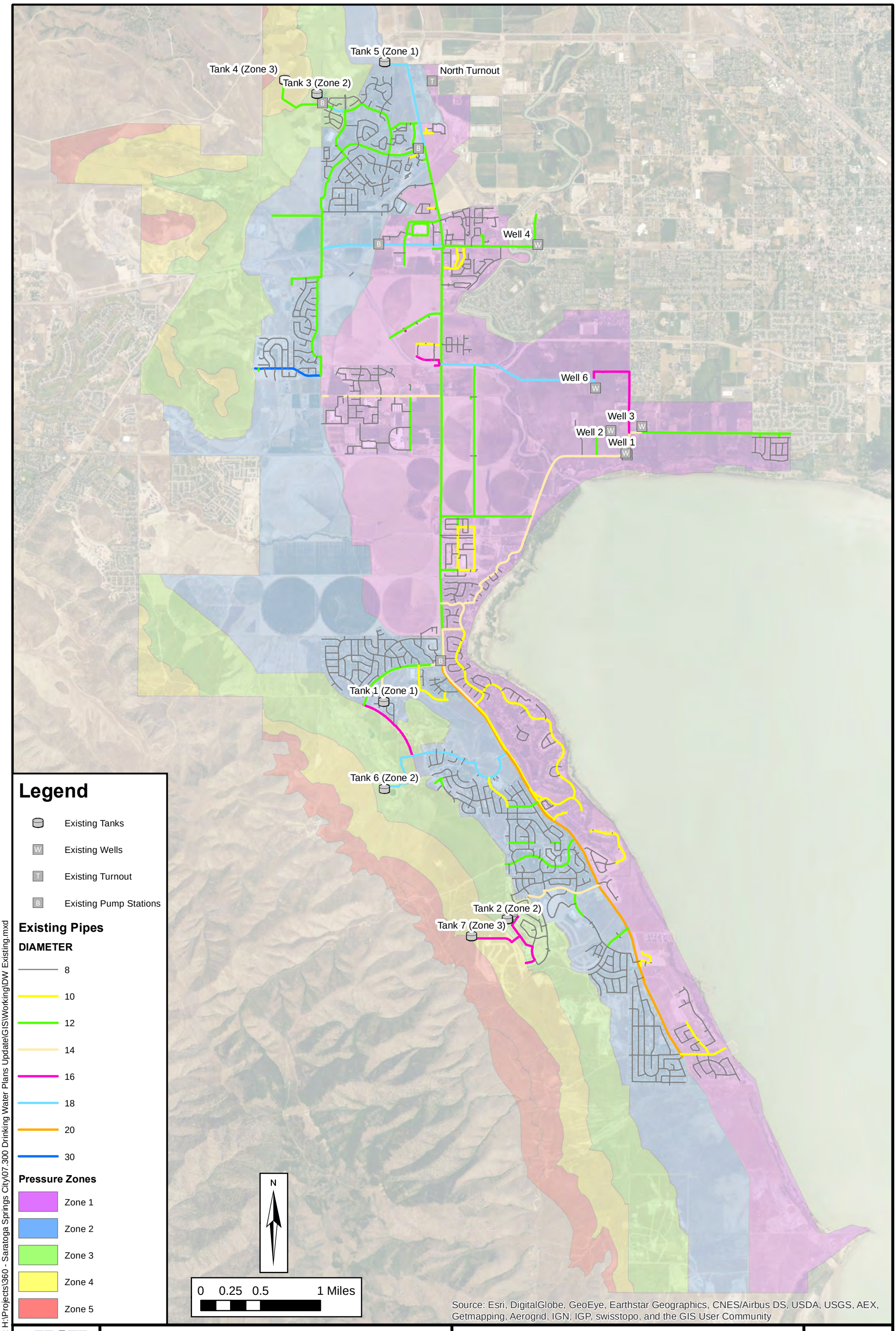
The City owns a total of 10,391 acre-feet of water rights that can be used between their drinking and secondary water systems. The existing drinking water right demand at the proposed level of service of 10 gpd per wsfu is 2,922 acre-feet. The existing supply of water rights attributed to the drinking water system are 4,758 acre-feet. The existing remaining capacity in the drinking water system is 1,836 acre-feet. This excess capacity is water right credits owned by various developers within the City that previously deeded the water rights to the City in exchange for the credits. It is recommended that the City not collect impact fees for water rights in the drinking water system for the next ten years. Rather than paying impact fees to the City for new drinking water rights, new developments can utilize the credit they own, or if they do not have a credit, they can purchase a water right credit held by others or work with the City to contract CUWCD water. All water right volumes are annual diversions in acre-feet.

## 2.9 Distribution System

Pipe diameters range from 6 inches to 20 inches, with the majority being 8 inches within subdivisions. The larger pipes in the system were provided as transmission lines to deliver water from sources and storage tanks and fire flow scenarios. All pipes are in good condition as they have been constructed within the last 15 years. The City's current standard allows for Ductile Iron Pipe (DIP) for pipe diameters of 24 inches and larger and Polyvinyl Chloride (PVC) pipe is allowed for pipes up to 24 inches. Figure 2-1 illustrates the existing distribution pipelines. The capacity of the distribution system is assumed to be accounted for in the source, storage and fire flow capacities since the pipeline sizes include a component of each.

## 2.10 Capital Facilities to Meet System Deficiencies

The existing drinking water system meets the current level of service.

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HANSEN ALLEN & LUCE inc ENGINEERS

**SARATOGA SPRINGS DRINKING WATER SYSTEM**

**EXISTING SYSTEM**

**FIGURE 2-1**

# SECTION 3
# IMPACT FEE CALCULATION

## 3.1 General

This section relies on the data presented in the previous sections to calculate a proposed impact fee based on the appropriate proportion of cost of projects planned in the next 10 years to increase capacity for new growth and an appropriate buy-in cost of available existing excess 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 three components of the impact fee are presented with the proposed fee. The Drinking Water System impact fee units include the indoor water capacity unit, fire flow capacity unit and the water right unit.

## 3.2 Growth Projections

The development of impact fees requires growth projections over the next ten years. Growth projections for Saratoga Springs were made by evaluating the history of building permit issuance over the last decade as summarized in Table 2-4. 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 growth. The City has conservatively projected growth for the near future with stronger growth occurring in the near future due to projected development of large property owners. Total growth projections for the City through 2026 are summarized in Table 2-5. Growth projections were not changed from the 2014 impact fee analysis because growth projects over the last few years have been accurate.

The existing system served about 6,494 connections at the beginning of 2017. Projected growth adds 7,403 ERCs (296,120 wfsu) in the next 10 years for a total of 13,897 ERCs (555,890 wfsu).

**TABLE 3-1**
**RESIDENTIAL BUILDING PERMIT HISTORY**

| Year | Annual Residential Permits | Annual Growth |
|---|---|---|
| 2000 | 169 | 63.1% |
| 2001 | 483 | 110.5% |
| 2002 | 369 | 40.1% |
| 2003 | 437 | 33.9% |
| 2004 | 383 | 22.2% |
| 2005 | 656 | 31.1% |
| 2006 | 658 | 23.8% |
| 2007 | 489 | 14.3% |
| 2008 | 193 | 4.9% |
| 2009 | 186 | 4.5% |
| 2010 | 232 | 5.4% |
| 2011 | 464 | 10.3% |
| 2012 | 376 | 7.8% |
| 2013 | 438 | 8.4% |
| 2014 | 320 | 5.7% |
| 2015 | 382 | 6.4% |
| 2016 | 812 | 12.8% |

**TABLE 3-2**
**GROWTH PROJECTIONS**

| Year | Total Projected ERCs | Total Projected wsfu | Annual Growth |
|---|---|---|---|
| 2016 | 6,494 | 259,760 | 6.2% |
| 2017 | 6,897 | 275,870 | 12.2% |
| 2018 | 7,738 | 309,530 | 8.3% |
| 2019 | 8,380 | 335,220 | 8.6% |
| 2020 | 9,101 | 364,040 | 10.0% |
| 2021 | 10,011 | 400,450 | 7.0% |
| 2022 | 10,712 | 428,480 | 6.6% |
| 2023 | 11,419 | 456,760 | 6.8% |
| 2024 | 12,195 | 487,820 | 6.8% |
| 2025 | 13,025 | 520,990 | 6.7% |
| 2026 | 13,897 | 555,890 | 6.7% |
| 2027 | 14,828 | 593,140 | 6.7% |
| 2028 | 15,822 | 632,880 | 6.7% |
| 2029 | 16,882 | 675,280 | 6.7% |
| 2030 | 18,013 | 720,530 | 6.6% |
| 2031 | 19,202 | 768,080 | 3.0% |
| 2032 | 19,778 | 791,120 | 3.0% |
| 2033 | 20,371 | 814,860 | 3.0% |
| 2034 | 20,982 | 839,300 | 3.1% |
| 2035 | 21,633 | 865,320 | 3.1% |
| 2036 | 22,304 | 892,140 | 3.1% |

### 3.3 Cost of Existing and Future Facilities

The facilities and costs presented in Table 3-3 are existing facilities with remaining buy-in capacity. The historical costs for the existing facilities come from City records. Costs and figures depicting these projects are included in Appendix A. The facilities and costs presented in Table 3-4 are proposed projects essential to maintain the current level of service while accommodating future growth within the next 10 years. The facility sizing for the future proposed projects was based on using 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 of the projects are 100% growth-related. Each project has a detailed cost for each component of the drinking water impact fee: Wells, CUWCD (wholesale connections), Source Conveyance (transmission lines associated with source conveyance and pump stations), Storage (tanks and associated transmission lines), Fire (storage and main transmission lines associated with providing fire suppression capacity), Planning (costs related to preparing master plans, CFPs, IFFPs, IFFAs), and Water Rights. See Appendix B for cost estimate details of future projects.

## TABLE 3-3
## COST OF EXISTING FACILITIES

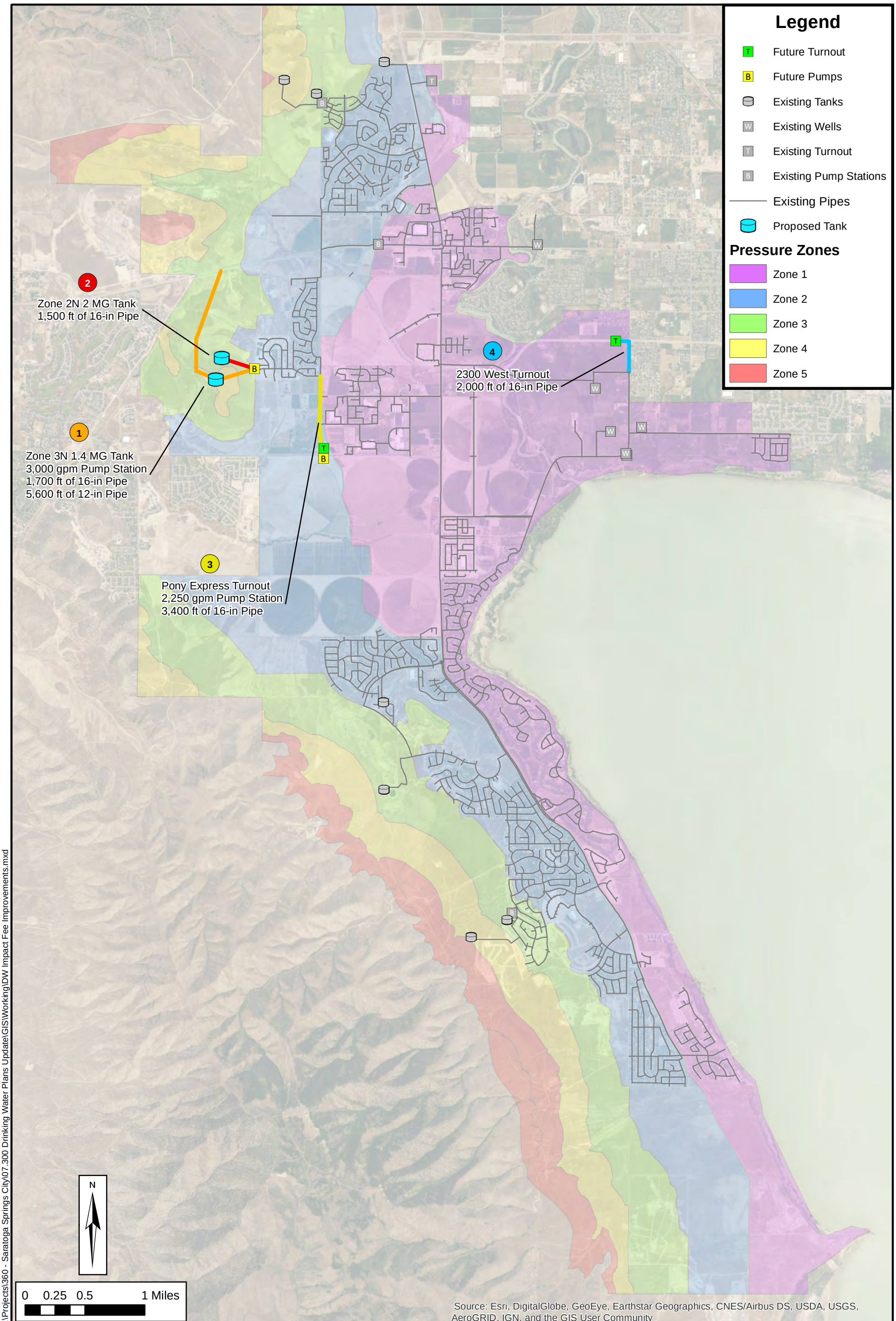
| PROJECT | MAP ID* | WELLS | CUWCD | SOURCE CONVEYANCE | STORAGE | FIRE | WATER RIGHTS | TOTAL |
|---|---|---|---|---|---|---|---|---|
| **Lake Mountain Mutual Purchase** | N/A | $2,700,000 | $0 | $10,216,000 | $4,710,000 | $2,240,000 | $1,134,000 | **$21,000,000** |
| **Lake Mountain Development Purchase (2005 Bond)** | N/A | $417,014 | $0 | $1,262,621 | $639,500 | $755,047 | $0 | **$3,074,183** |
| **Tank 5 (2006 Bond)** | N/A | $0 | $0 | $0 | $2,645,796 | $2,236,090 | $0 | **$4,881,886** |
| **Zone 2 South SID (2009 Bond)** | SAR. 156 | $0 | $0 | $0 | $1,579,763 | $547,938 | $0 | **$2,127,701** |
| **Water Right Purchases** | N/A | $0 | $0 | $0 | $0 | $0 | $2,088,825 | **$2,088,825** |
| **400 North Pipeline (SAR.159)** | SAR. 159 | $0 | $0 | $186,278 | $0 | $310,809 | $0 | **$497,087** |
| **Saratoga Rd Pipeline (SAR.163)** | SAR.163 | $0 | $0 | $575,780 | $0 | $0 | $0 | **$575,780** |
| **Booster Pump Station (SAR.140)** | SAR.140 | $0 | $0 | $99,995 | $0 | $0 | $0 | **$99,995** |
| **1200 North Pipeline (SAR.115)** | SAR. 115 | $0 | $0 | $0 | $26,659 | $65,022 | $0 | **$91,681** |
| **Project - Fox Hollow Zone 3** | 1 | $0 | $0 | $1,189,127 | $1,405,223 | $191,621 | $0 | **$2,785,971** |
| **Talus Ridge Pipeline Upsizes** | 2 | $0 | $0 | $65,294 | $422,634 | $106,690 | $0 | **$594,618** |
| **Legacy Farms Pipeline Upsizes** | 3 | $0 | $0 | $234,669 | $0 | $352,004 | $0 | **$586,673** |
| **Harvest Point Com. Pipeline Upsize** | 4 | $0 | $0 | $0 | $0 | $16,023 | $0 | **$16,023** |
| **Fox Hollow N6 Pipeline Looping** | 5 | $0 | $0 | $44,720 | $0 | $44,721 | $0 | **$89,441** |
| **Zone 2 North Source** | 6 | $0 | $0 | $729,324 | $0 | $339,980 | $0 | **$1,069,304** |
| **Redwood Road Transmission** | 7 | $0 | $0 | $402,640 | $0 | $409,603 | $0 | **$812,243** |
| **Project – CWP Turnouts Transmission** | 8 | $0 | $275,869 | $0 | $0 | $0 | $0 | **$275,869** |
| **Land Acquisition Cost for Well 4** | N/A | $124,968 | $0 | $0 | $0 | $0 | $0 | **$124,968** |
| **TOTAL** | | **$3,241,982** | **$275,869** | **$15,006,448** | **$11,429,575** | **$7,615,548** | **$3,222,825** | **$40,792,247** |

* See Figures in Appendix A

**TABLE 3-4**
**COST OF FUTURE FACILITIES**

| PROJECT | MAP ID* | WELLS | CUWCD | SOURCE CONVEYANCE | STORAGE | FIRE | PLANNING | WATER RIGHTS | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| **2017 IFFP Project- Mt. Saratoga Zone3 Source/Storage** | 1 | $0 | $0 | $1,111,680 | $1,970,200 | $581,120 | $0 | $0 | **$3,663,000** |
| **2017 IFFP Project- Mt. Saratoga Zone2 Storage** | 2 | $0 | $0 | $147,000 | $2,700,000 | $98,000 | $0 | $0 | **$2,945,000** |
| **2025 IFFP Project- Pony Express CWP Turnout & Pump Station** | 3 | $0 | $350,000 | $685,000 | $0 | $170,000 | $0 | $0 | **$1,205,000** |
| **2025 IFFP Project- 2300 West CWP Turnout** | 4 | $0 | $346,000 | $0 | $0 | $0 | $0 | $0 | **$346,000** |
| **Planning** | N/A | $0 | $0 | $0 | $0 | $0 | $140,000 | $0 | **$140,000** |
| **TOTAL** | | **$0** | **$696,000** | **$1,943,680** | **$4,670,200** | **$849,120** | **$140,000** | **$0** | **$8,299,000** |

* See Figure 3-1 (Additional details on cost estimates are in Appendix B)




Date: 7/19/2017
Document Path: H:\Projects\360 - Saratoga Springs City\07.300 Drinking Water Plans Update\GIS\Working\DW Impact Fee Improvements.mxd

HANSEN ALLEN & LUCE INC ENGINEERS

**SARATOGA SPRINGS DRINKING WATER SYSTEM**

**IMPACT FEE IMPROVEMENTS**

**FIGURE 3-1**

Only those costs attributed to the new growth in the next 10 years can be included in the impact fee. Table 3-5 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 3-5**
**FACILITY COST BY TIME PERIOD**

| | EXISTING | NEXT 10 YEARS | BEYOND 10 YEARS | TOTAL |
|---|---|---|---|---|
| **WELLS** | $1,782,934 | $1,459,048 | $0 | **$3,241,982** |
| **CUWCD** | $0 | $59,958 | $911,911 | **$971,869** |
| **SOURCE CONVEYANCE** | $5,520,489 | $9,740,497 | $1,689,142 | **$16,950,128** |
| **STORAGE** | $3,769,440 | $4,093,020 | $8,237,316 | **$16,099,776** |
| **FIRE** | $2,018,236 | $3,056,881 | $3,389,551 | **$8,464,668** |
| **WATER RIGHTS** | $3,222,825 | $0 | $0 | **$3,222,825** |
| **PLANNING** | $0 | $140,000 | $0 | **$140,000** |
| **TOTAL COST** | **$16,313,924** | **$18,549,404** | **$14,227,920** | **$49,091,248** |

## 3.4 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.

## 3.5 Impact Fee Unit Calculation

Currently, the City assigns non-residential development an ERC value based on a fixture count that is performed at the issuance of the Building Permit. The fixture count is based on the International Plumbing Code (IPC), issued by the International Code Council as a method to size the water meter and piping by the number of water fixtures and the type of water fixtures a building has. Each fixture type is assigned a load value in water supply fixture units (wsfu). For example, a kitchen sink has a load factor of 1.4 wsfu based on how much water is used at a kitchen sink. A typical residential toilet has a load factor of 2.2 wsfu because a toilet uses more water than a kitchen sink. Once the total fixtures are identified, all the fixture units are added together for a total fixture unit count. The City also uses the IPC as the plumbing standards for plan reviews and building inspections.

It is recommended that the City have three components to the impact fee for drinking water system facilities-- indoor water use, fire flow capacity, and water rights. Each component is discussed separately in the following paragraphs.

**Indoor Water Use Impact Fee Unit**

It is recommended that the City continue to use the IPC fixture unit (wsfu) count method to calculate an Indoor Water Impact Fee Unit. It is recommended that one impact fee unit be equal to a fixture count of 40, which is the recommended maximum fixture count for a ¾ inch meter. A fixture count of 40 and a ¾ inch meter size matches the existing and proposed level of service. It is recommended that the City continue the requirement of a ¾ inch meter being the minimum meter size allowed and a fixture count of 40 being the minimum indoor water impact

fee unit for a connection. A fixture count greater than 40 would require a larger meter and an impact fee unit larger than 1. For example, a building with a fixture unit count of 87 would have an impact fee unit of 2.2 because 87 divided by 40 is 2.2.

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 3-6 is a summary of the capacity cost included in the impact fee calculation by indoor water component.

**TABLE 3-6**
**INDOOR WATER CAPACITY COST**

| Indoor Water Component | EXISTING | | NEXT 10 YEARS | | BEYOND 10 YEARS | | TOTAL | |
|---|---|---|---|---|---|---|---|---|
| | wsfu* | Cost | wsfu | Cost | wsfu | Cost | wsfu* | Cost |
| **WELLS** | 217,600 | $1,782,934 | 162,880 | $1,459,048 | 0 | $0 | **380,480** | **$3,241,982** |
| **CUWCD** | 0 | $0 | 133,240 | $59,958 | 2,020,120 | $911,911 | **2,153,360** | **$971,869** |
| **SOURCE CONVEYANCE** | 217,600 | $5,520,489 | 296,120 | $9,740,497 | 74,517 | $1,689,142 | **588,237** | **$16,950,128** |
| **STORAGE** | 217,600 | $3,769,440 | 296,120 | $4,093,020 | 702,120 | $8,237,316 | **1,215,840** | **$16,099,776** |
| **PLANNING** | 0 | $0 | 296,120 | $140,000 | 0 | $0 | 296,120 | **$140,000** |
| **TOTAL COST** | **$11,072,863** | | **$15,492,523** | | **$10,838,369** | | **$37,403,755** | |

*Existing wsfu does not include 42,160 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. The costs in the “existing” column were not included in the calculation of the new unit cost because it represents the money that has already been collected as existing customers connected to the system. Table 3-7 is a summary of the indoor water capacity cost per wsfu using the totals of the column in “Next 10 Years” from Table 3-6. The unit costs calculated in Table 3-7 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 rights or if water will be purchased from CUWCD. This will allow for development to pay their fair share of the facilities used for the source water available to the development. The Cost per wsfu for development with well water right credit is $56.14 per wsfu. The cost for development that purchase CUWCD capacity, the cost will be $47.63. Note that the cost of purchasing source water capacity from CUWCD is not included in this impact fee. See Appendix C for details on CUWCD water cost.

**TABLE 3-7**
**INDOOR WATER CAPACITY COST PER WSFU**

| Indoor Water Component | Cost Attributed to Component | Total wsfu* Capacity | Cost per wsfu |
|---|---|---|---|
| Wells | $1,459,048 | 162,880 | $8.96 |
| CUWCD | $59,958 | 133,240 | $0.45 |
| Source Conveyance | $9,740,497 | 296,120 | $32.89 |
| Storage | $4,093,020 | 296,120 | $13.82 |
| Planning | $140,000 | 296,120 | $0.47 |
| **TOTAL (WELLS)** | | | **$56.14** |
| **TOTAL (CUWCD)** | | | **$47.63** |

**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 (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 Million Gallons (MG) of fire suppression be assigned an equitable cost of providing the additional capacity. Assigning an impact fee cost unit by wsfu 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 3-8.

**TABLE 3-8**
**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 | $285 |
| 1,750 | 2 | 0.21 | 2 | $599 |
| 2,000 | 2 | 0.24 | 4 | $1,044 |
| 2,250 | 2 | 0.27 | 6 | $1,704 |
| 2,500 | 2 | 0.30 | 10 | $2,768 |
| 2,750 | 2 | 0.33 | 16 | $4,674 |
| 3,000 | 3 | 0.54 | 94 | $26,777 |
| 3,250 | 3 | 0.59 | 119 | $33,994 |
| 3,500 | 3 | 0.63 | 153 | $43,467 |
| 3,750 | 3 | 0.68 | 201 | $57,245 |
| 4,000 | 4 | 0.96 | 875 | $249,224 |

Also shown in Table 3-8 is a Fire Flow Impact Fee per Connection based on the cost distribution units and a total cost of $8,484,668 attributed to fire flow capacity (see Table 3-5). An estimated increase of 5,750 Fire Flow Units are projected to be added to the system at a cost of approximately $1.6 million since the previous Impact Fee study through the next ten years. 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 10 gpd per wsfu. 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. Existing well capacity is about equal to the existing demand and drinking water right credit. Additional source and water right capacity will need to come from CUWCD. There are already 2 existing connections to CUWCD with 2 more planned to meet future demands. The CUWCD water has a much higher upfront cost and long term cost. However, the City has not paid and do not plan to pay the upfront costs of the wholesale water and the long term costs are not impact fee eligible. 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 very limited. It is recommended that the City not collect impact fees for water rights moving forward 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 C 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 3-9, 3-10 and 3-11). All water right volumes are annual diversions in acre-feet.

**TABLE 3-9**
**WATER RIGHTS NEEDED BY 2026**

| | **Acre-Feet** |
|---|---|
| Predicted Demand in 2026 at the Proposed Level of Service | 6,254 |
| Existing Demand at the Proposed Level of Service | 2,922 |
| **Additional Demand Expected by 2026** | **3,332** |

**TABLE 3-10**
**WATER RIGHTS EXCESS CAPACITY**

| | **Acre-Feet** |
|---|---|
| Water Rights Owned | 4,758 |
| Existing Demand at the Proposed Level of Service | 2,922 |
| **Excess Capacity** | **1,836** |

**TABLE 3-11**
**ADDITIONAL WATER RIGHTS NEEDED BY 2026**

| | Acre-Feet |
|---|---|
| Additional Demand Expected by 2026 | 3,332 |
| Excess Capacity | 1,836 |
| **Additional Capacity Needed by 2026** | **1,496** |

The additional demand will be met by water from CUWCD. By the year 2026 the City is projected to have at least 3,140 acre-feet of water available from CUWCD, which is sufficient to cover the projected growth at that point in time. 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.

### 3.6 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 40 wsfu, using well water rights, and requiring a 1,500 gpm fire flow would have an impact fee of **$2,531** (see Table 3-12). This includes $2,246 for indoor water capacity and $285 for fire flow capacity.

**TABLE 3-12**
**TOTAL PROPOSED IMPACT FEE PER**
**TYPICAL SINGLE FAMILY CONNECTION**
**WITH WELL WATER RIGHTS**

| Component | Per Typical Residential Connection |
|---|---|
| Indoor Water | $2,246 |
| Fire Flow | $285 |
| **Total** (source capacity from well water rights) | **$2,531** |

Note: 40 wsfu = 1 Typical residential connection

The typical single family residential connection requiring 40 wsfu, purchasing source water capacity from CUWCD, and requiring a 1,500 gpm fire flow would have an impact fee of **$2,190** (see the Table 3-13). This includes $1,905 for indoor water capacity and $285 for fire flow capacity.

**TABLE 3-13**
**TOTAL PROPOSED IMPACT FEE PER**
**TYPICAL SINGLE FAMILY CONNECTION**
**WITH CUWCD WATER**

| Component | Per WSFU | Per Typical Residential Connection |
|---|---|---|
| Indoor Water | $47 | $1,905 |
| Fire Flow | $7 | $285 |
| **Total** (source capacity from CUWCD) | **$54** | **$2,190** |

Note: 40 wsfu = 1 Typical residential connection

# Appendix A

# Existing Facilities Costs

# 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** | | |

**8 Booster Pump Station 1 Upgrade**

| | | | | |
|---|---|---|---|---|
| Source | Booster Upgrade | $99,995 | Booster Pump Station 1 Upgrade | $99,995 |
| **TOTAL** | | **$99,995** | | |

**9 1200 North Pipeline**

| | | | | |
|---|---|---|---|---|
| Storage | 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 | $422,634 | | Plat B | $125,777 |
| Fire | Pipeline Upsizes | $106,690 | | Plat D | $55,310 |
| **TOTAL** | | **$594,618** | | Plat F | $45,578 |
| | | | | Plat G | $108,739 |
| | | | | Total | $594,618 |

**12 Legacy Farms**

| | | | | | |
|---|---|---|---|---|---|
| Source | Pipeline Upsizes | $234,669 | | Legacy Farms Pipe Upsize | $389,673 |
| Fire | Pipeline Upsizes | $352,004 | | Legacy Farms Pipe Upsize VP2 | $197,000 |
| **TOTAL** | | **$586,673** | | Total | $586,673 |

**13 Harvest Point Commercial Pipeline Upsize for Fireflow**

| | | | | | |
|---|---|---|---|---|---|
| Fire | Pipeline Upsize | $16,023 | | Pipeline Upsize | $16,023 |
| **TOTAL** | | **$16,023** | | Total | $16,023 |

**14 Fox Hollow N6 Pipeline Looping**

| | | | | | |
|---|---|---|---|---|---|
| Fire | Pipeline Looping | $44,721 | | Pipeline Looping | $89,441 |
| Source | Pipeline Looping | $44,720 | | Total | $89,441 |
| **TOTAL** | | **$89,441** | | | |

**15 Master Planning, CFP, IFFP, IFFA**

| | | | | | |
|---|---|---|---|---|---|
| Planning | 2 Updates | $140,000 | | Master Planning, CFP, IFFP, IFFA | $70,000 |
| **TOTAL** | | **$140,000** | | | |

**16 Zone 2 North Source**

| | | | | | |
|---|---|---|---|---|---|
| Source | Booster Station and Pipeline | $729,324 | | Booster Station | $383,465 |
| Fireflow | 18" U-73 Pipeline | $339,980 | | 18" U-73 Pipeline | $685,839 |
| **TOTAL** | | **$1,069,304** | | Total | $1,069,304 |

**17 Redwood Rd Transmission Line**

| | | | | | |
|---|---|---|---|---|---|
| Source | Redwood Rd Transmission Line | $402,640 | | Redwood Rd Transmission Line | $627,743 |
| Fireflow | Redwood Rd Transmission Line | $409,603 | | 2014 Bond Interest | $184,500 |
| **TOTAL** | | **$812,243** | | Total | $812,243 |

**18 Transmission Lines to Connect CWP Turnouts**

| | | | | | |
|---|---|---|---|---|---|
| CUWCD | Transmission Lines | $275,869 | | Transmission Lines | $275,869 |
| **TOTAL** | | **$275,869** | | Total | $275,869 |

**19 Additional Land Acquisition Cost for Well 4**

| | | | | | |
|---|---|---|---|---|---|
| Wells | Transmission Lines | $120,000 | | Land Acquisition | $120,000 |
| **TOTAL** | | **$120,000** | | Total | $120,000 |

## 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 | 3.2412938% |
| Net Interest Cost (NIC) | 2.8696769% |
| True Interest Cost (TIC) | 2.8036045% |
| Bond Yield for Arbitrage Purposes | 2.6771734% |
| All Inclusive Cost (AIC) | 2.9492157% |

**IRS Form 8038**

| | |
|---|---|
| Net Interest Cost | 2.6419092% |
| Weighted Average Maturity | 11.783 Years |

2016 Rev | SINGLE PURPOSE | 11/7/2016 | 10:16 AM

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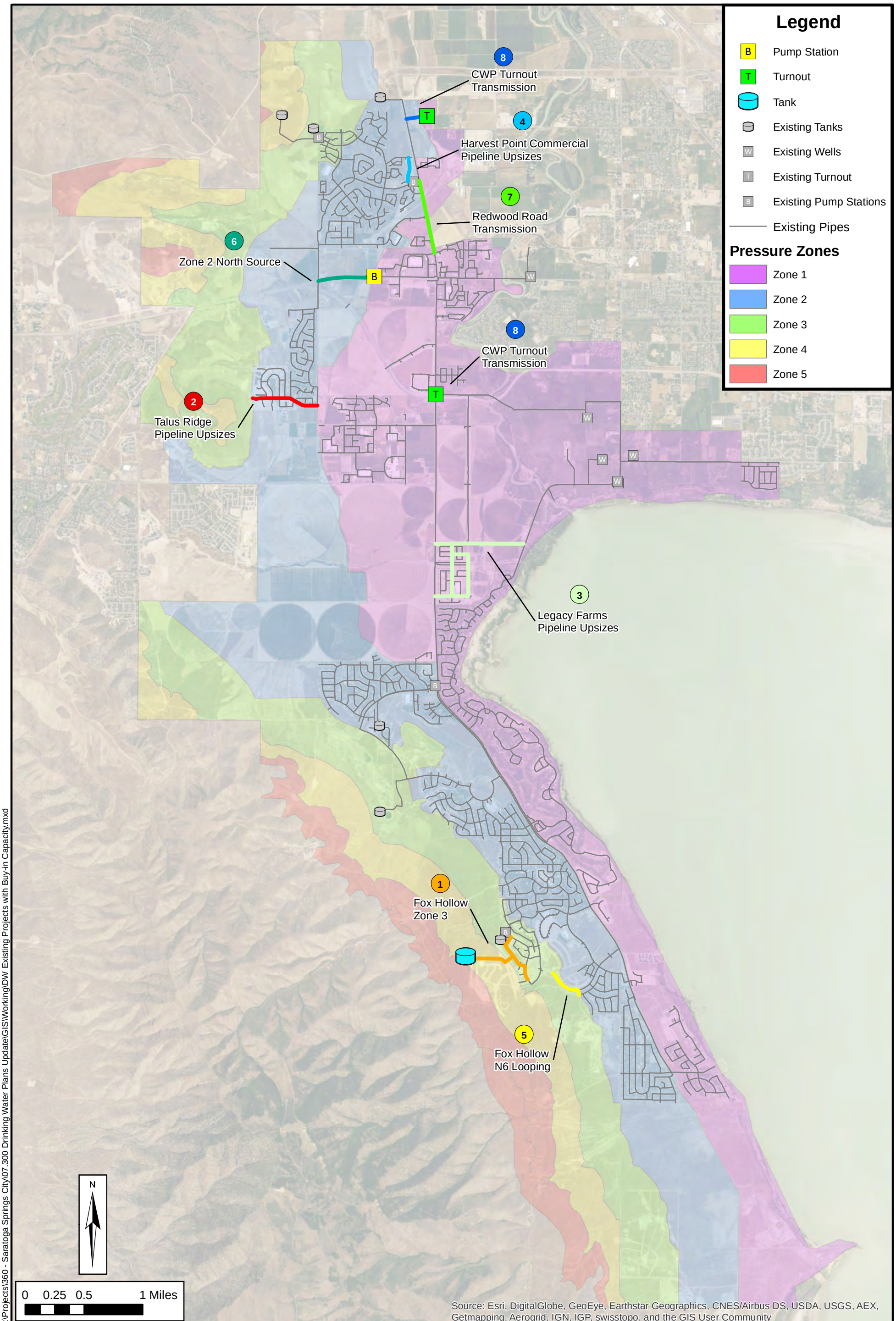
Page 1

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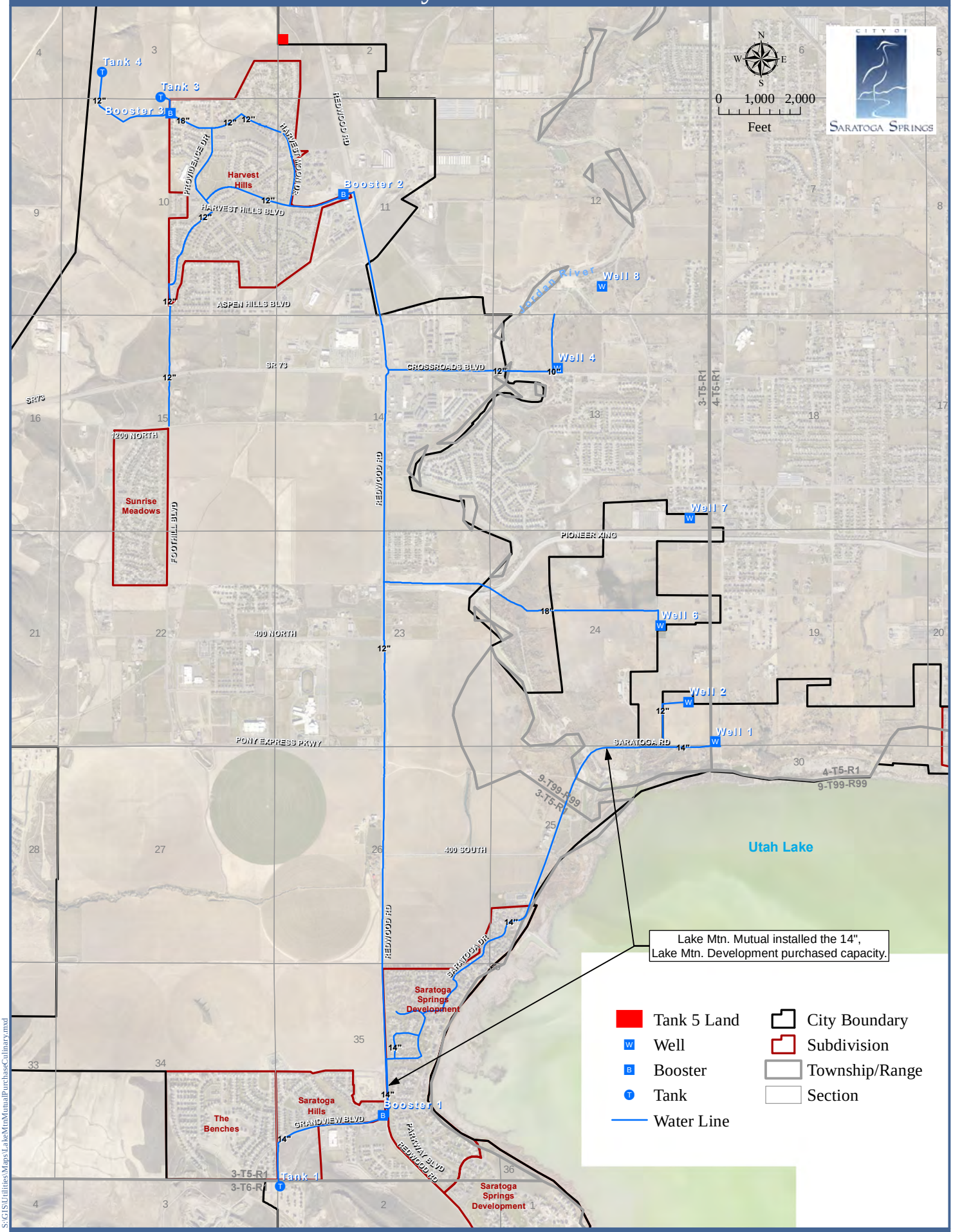
HANSEN ALLEN & LUCE INC ENGINEERS

**SARATOGA SPRINGS DRINKING WATER SYSTEM**

**EXISTING IMPACT FEE FACILITIES**

**FIGURE A-1**

# Lake Mountain Mutual Culinary Asset Phurchase

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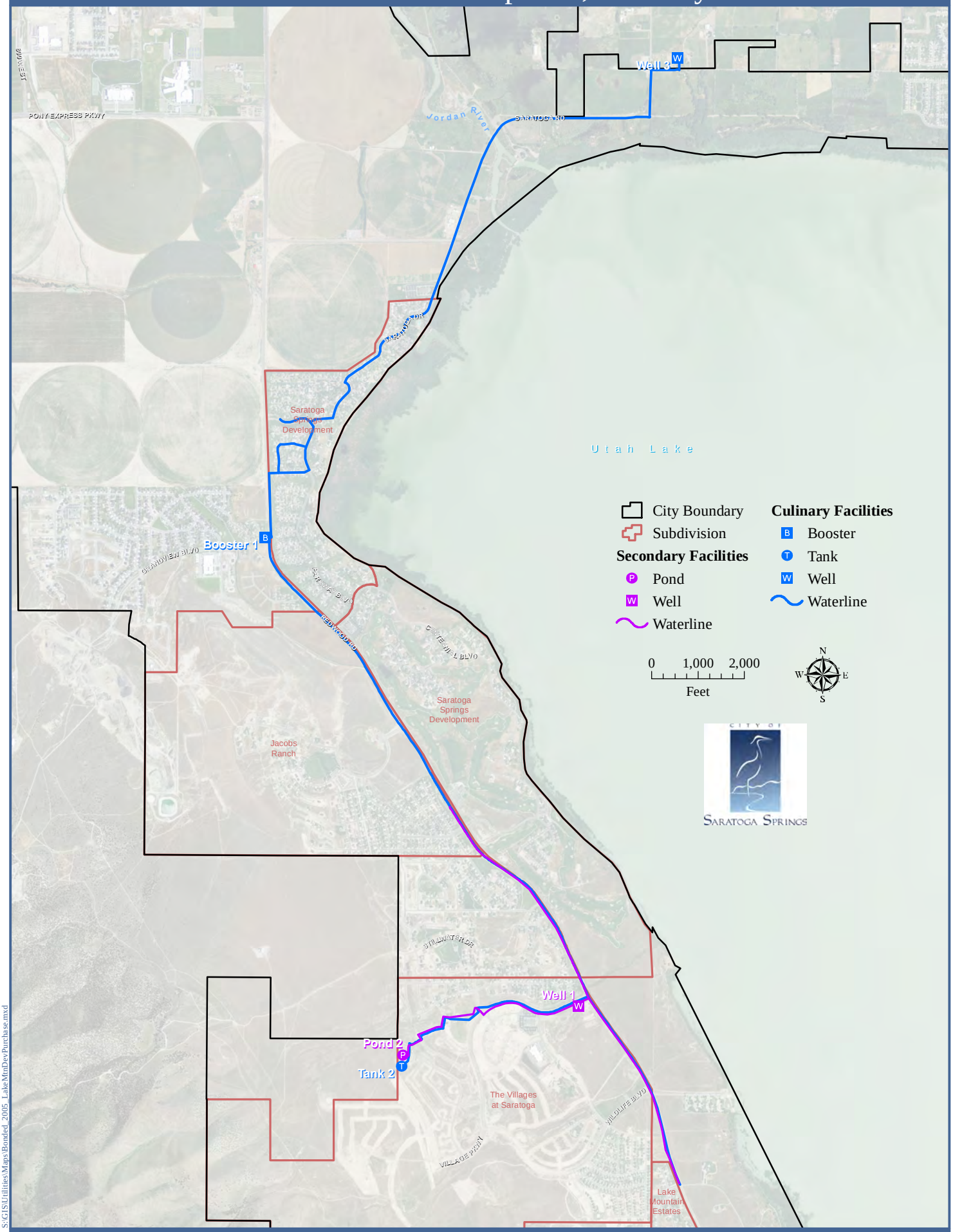
4 February 2014

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

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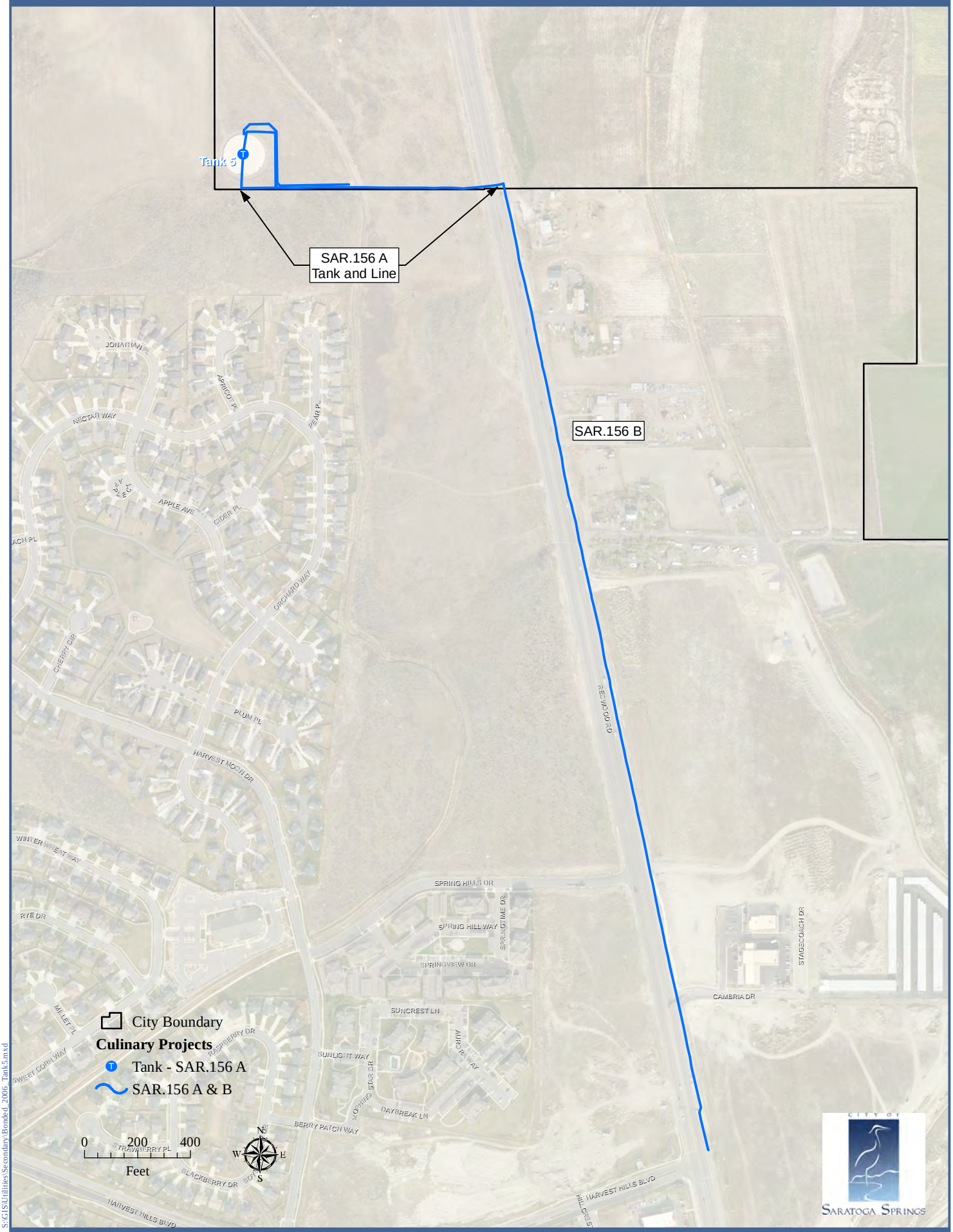
27 August 2012

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

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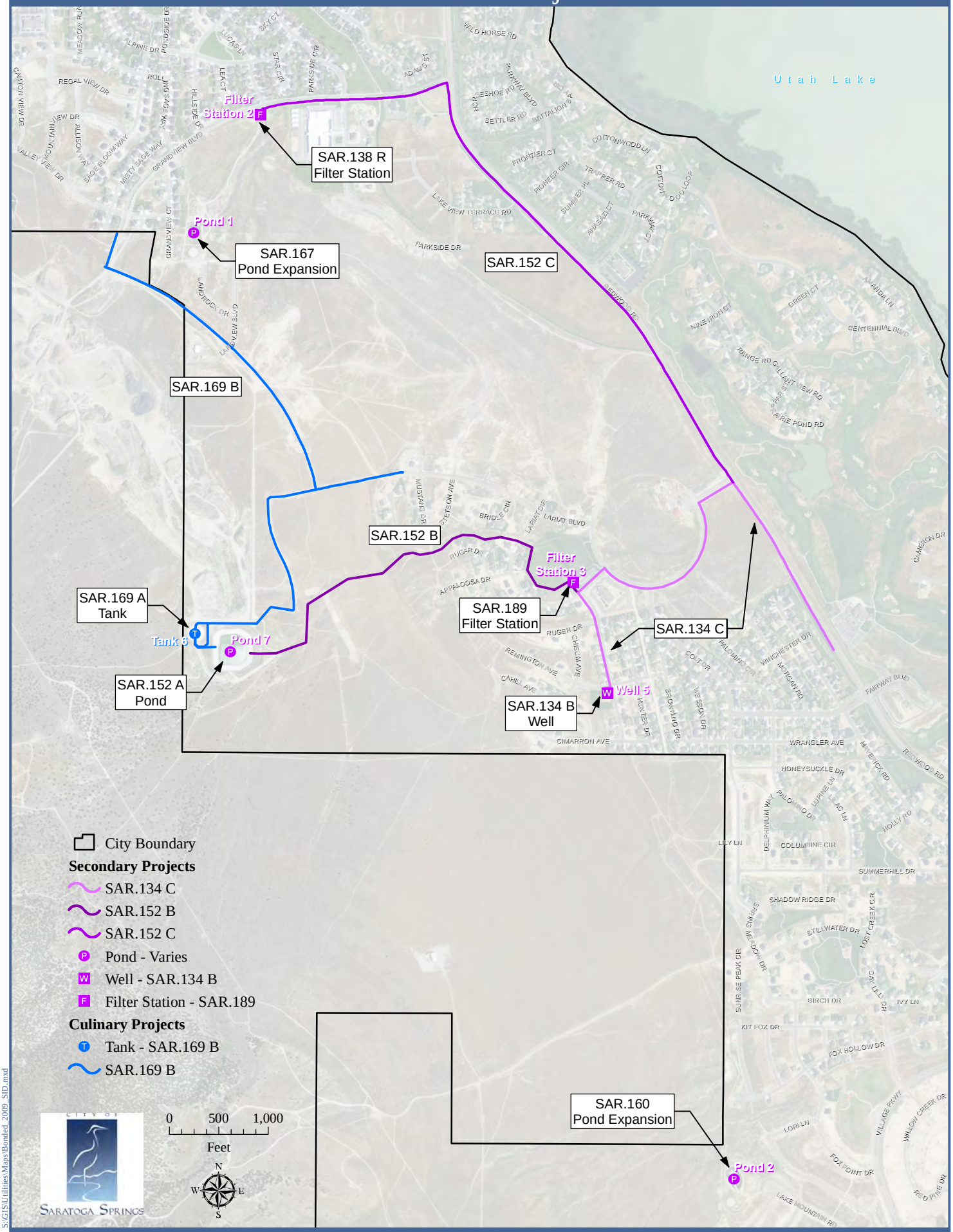
27 August 2012

# 2009 Bond Series - South Zone 2 SID Projects

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27 August 2012

# Appendix B

# Cost Estimates

**City of Saratoga Springs Capital Facility Plan**
**Drinking Water Recommended Improvements**
**Preliminary Engineers Cost Estimates**

| | Item | Unit | Unit Price | Quantity | Total Price |
|---|---|---|---|---|---|
| ***DW 1.*** | ***Zone 3 North - Pump Station and Tank*** | | | | |
| | 16" DIP Transmission Line to Tank | LF | $ 136 | 1700 | $ 231,200 |
| | 12 " Transmission Line | LF | $ 111 | 5600 | $ 621,600 |
| | Acquire Property | AC | $ 100,000 | 3 | $ 300,000 |
| | Zone 3 Pump Station (125 HP, 1200 gpm) | LS | $ 500,000 | 1 | $ 500,000 |
| | Zone 3 Tank (1.4 MG) | LS | $ 1,400,000 | 1 | $ 1,400,000 |
| | | | | Engineering & Admin. (10%) | $ 305,280 |
| | | | | Contingency (10%) | $ 305,280 |
| | | | | **Total to Zone 3 North - Pump Station and Tank** | **$ 3,663,000** |
| ***DW 2.*** | ***Zone 2 North - Tank*** | | | | |
| | Acquire Property | AC | $ 100,000 | 2.5 | $ 250,000 |
| | 16" DIP Transmission Line to Tank | LF | $ 136 | 1500 | $ 204,000 |
| | Zone 2 Tank (2 MG) | LS | $ 2,000,000 | 1 | $ 2,000,000 |
| | | | | Engineering & Admin. (10%) | $ 245,400 |
| | | | | Contingency (10%) | $ 245,400 |
| | | | | **Total to Zone 2 North - Tank** | **$ 2,945,000** |
| ***DW 3.*** | ***CUWCD Pony Express Turnout and Pump Station*** | | | | |
| | 16" DIP Transmission Line | LF | $ 136 | 3400 | $ 462,400 |
| | Acquire Property | AC | $ 100,000 | 0.5 | $ 50,000 |
| | Zone 2 Pump Station (150 HP, 2250 gpm) | LS | $ 600,000 | 1 | $ 600,000 |
| | | | | Engineering & Admin. (10%) | $ 46,240 |
| | | | | Contingency (10%) | $ 46,240 |
| | | | | **Total to CUWCD Pony Express Turnout and Pump Station** | **$ 1,205,000** |
| ***DW 4.*** | ***CUWCD 2300 West Turnout*** | | | | |
| | 16" DIP Transmission Line | LF | $ 136 | 2000 | $ 272,000 |
| | Turnout Connection | LS | $ 20,000 | 1 | $ 20,000 |
| | | | | Engineering & Admin. (10%) | $ 27,200 |
| | | | | Contingency (10%) | $ 27,200 |
| | | | | **Total to CUWCD 2300 West Turnout** | **$ 346,000** |

## 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) | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 2 | 180000 | 0.18 | 0 | 3246 | 3307 | 17471.0 | 14893 | 84.6 | 84.6 | 1.0 | 19818.0 | 19818.0 | $5,647,114.70 | $284.95 |
| 1750 | 2 | 210000 | 0.21 | 30000 | 18 | 61 | 322.265 | 322 | 93.2 | 177.8 | 2.1 | 105.0 | 220.6 | $62,867.93 | $598.74 |
| 2000 | 2 | 240000 | 0.24 | 30000 | 14 | 43 | 227.171 | 227 | 132.2 | 309.9 | 3.7 | 85.0 | 311.4 | $88,728.00 | $1,043.86 |
| 2250 | 2 | 270000 | 0.27 | 30000 | 11 | 29 | 153.208 | 153 | 196.1 | 506.0 | 6.0 | 66.0 | 394.7 | $112,481.20 | $1,704.26 |
| 2500 | 2 | 300000 | 0.3 | 30000 | 8 | 18 | 95.095 | 95 | 315.8 | 821.8 | 9.7 | 50.0 | 485.7 | $138,392.76 | $2,767.86 |
| 2750 | 2 | 330000 | 0.33 | 30000 | 4 | 10 | 52.830 | 53 | 566.0 | 1387.8 | 16.4 | 25.0 | 410.1 | $116,857.45 | $4,674.30 |
| 3000 | 3 | 540000 | 0.54 | 210000 | 2 | 6 | 31.698 | 32 | 6562.5 | 7950.3 | 94.0 | 12.0 | 1127.7 | $321,325.45 | $26,777.12 |
| 3250 | 3 | 585000 | 0.585 | 45000 | 1 | 4 | 21.132 | 21 | 2142.9 | 10093.2 | 119.3 | 5.0 | 596.5 | $169,971.85 | $33,994.37 |
| 3500 | 3 | 630000 | 0.63 | 45000 | 1 | 3 | 15.849 | 16 | 2812.5 | 12905.7 | 152.5 | 5.0 | 762.7 | $217,335.04 | $43,467.01 |
| 3750 | 3 | 675000 | 0.675 | 45000 | 1 | 2 | 10.566 | 11 | 4090.9 | 16996.6 | 200.9 | 6.0 | 1205.4 | $343,472.35 | $57,245.39 |
| 4000 | 4 | 960000 | 0.96 | 285000 | 1 | 1 | 5.283 | 5 | 57000.0 | 73996.6 | 874.6 | 5.0 | 4373.1 | $1,246,120.98 | $249,224.20 |
| | | | | | | 3368 | | 15215 | | | | 20182.0 | 29705.9 | $8,464,667.70 | |

| 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 | Beyond 10 Years Units | Beyond 10 Years Cost |
|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | 19818.0 | 19818.0 | $5,647,115 | $284.95 | 4,166.7 | $1,187,307 | 6,946 | 6,946.0 | 8,705.3 | $2,480,554 |
| 1750 | 105.0 | 220.6 | $62,868 | $598.74 | 48.6 | $13,834 | 39 | 81.9 | 90.1 | $25,683 |
| 2000 | 85.0 | 311.4 | $88,728 | $1,043.86 | 65.8 | $18,759 | 30 | 109.9 | 135.6 | $38,653 |
| 2250 | 66.0 | 394.7 | $112,481 | $1,704.26 | 84.5 | $24,064 | 24 | 143.5 | 166.7 | $47,514 |
| 2500 | 50.0 | 485.7 | $138,393 | $2,767.86 | 99.8 | $28,424 | 17 | 165.1 | 220.8 | $62,915 |
| 2750 | 25.0 | 410.1 | $116,857 | $4,674.30 | 84.2 | $24,001 | 9 | 147.6 | 178.2 | $50,788 |
| 3000 | 12.0 | 1127.7 | $321,325 | $26,777.12 | 241.3 | $68,745 | 4 | 375.9 | 510.5 | $145,472 |
| 3250 | 5.0 | 596.5 | $169,972 | $33,994.37 | 153.1 | $43,637 | 2 | 238.6 | 204.8 | $58,346 |
| 3500 | 5.0 | 762.7 | $217,335 | $43,467.01 | 195.8 | $55,797 | 2 | 305.1 | 261.8 | $74,604 |
| 3750 | 6.0 | 1205.4 | $343,472 | $57,245.39 | 257.9 | $73,483 | 2 | 401.8 | 545.7 | $155,498 |
| 4000 | 5.0 | 4373.1 | $1,246,121 | $249,224.20 | 1,749.3 | $498,448 | 2 | 1,749.3 | 874.6 | $249,224 |
| | 20182.0 | 29705.9 | $8,464,668 | | 7,146.9 | $2,036,499 | 7,077 | 10,664.8 | 11,894.3 | $3,389,252 |

# Appendix C

# CUWCD Water Costs

# EXHIBIT A

February, 2017

**Take-Down Schedule - Purchased Water Take-Down Schedule (By Volume) for Purchased Water Under this Agreement**

| COLUMN | (A) | (B) | (C) | (D) | (E) | (F) | (G) | (H) |
|---|---|---|---|---|---|---|---|---|
| Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009) | Annual Volume (Block) of Purchased Water For Which One-Time Development Fee is Due (AF) | One Time Development Charge for Blocks of Purchased Water (per AF) | Annual Volume of Purchased Water Subject to Capital Recovery Component of Annual Fee (AF) | *Actual* and Estimated Capital Recovery Component of Annual Fee for Volume of Water in Column C (per AF) | Annual Volume of Purchased Water which becomes Deliverable Water (AF) | Cumulative Annual Volume of Deliverable Water (AF) | *Actual* and Estimated OM&R Component of Annual Fee for Deliverable Water in Column (F) (per AF) | *Actual* and Estimated Future Annual Fee (As set annually by the District) (Fee includes the OM&R and Capital Recovery Components in Columns D & G |
| 2008-09 | 0 | *$6,200* | 0 | | 0 | 0 | | *$300* |
| 2009-10 | 0 | *$6,200* | 0 | | 0 | 0 | | *$314* |
| 2010-11 | 0 | *$6,200* | 0 | | 0 | 0 | | *$328* |
| 2011-12 | 0 | *$6,200* | 0 | | 0 | 0 | | *$343* |
| 2012-13 | 0 | *$6,200* | 0 | | 0 | 0 | | *$358* |
| 2013-14 | 0 | *$6,200* | 0 | | 0 | 0 | | *$374* |
| 2014-15 | 0 | *$6,200* | 0 | *$222* | 0 | 0 | *$169* | *$391* |
| 2015-16 | 0 | *$6,200* | 0 | *$203* | 0 | 0 | *$205* | *$408* |
| 2016-17 | 0 | *$6,200* | 0 | *$252* | 0 | 0 | *$175* | *$427* |
| 2017-18 | 50 | $6,200 | 50 | $280 | 50 | 50 | $166 | $446 |
| 2018-19 | 50 | $6,200 | 100 | $310 | 50 | 100 | $156 | $466 |
| 2019-20 | 9900 | $6,200 | 10,000 | $346 | 380 | 480 | $141 | $487 |
| 2020-21 | 0 | | 10,000 | $364 | 380 | 860 | $145 | $509 |
| 2021-22 | 0 | | 10,000 | $383 | 380 | 1,240 | $149 | $532 |
| 2022-23 | 0 | | 10,000 | $400 | 380 | 1,620 | $156 | $556 |
| 2023-24 | 0 | | 10,000 | $421 | 380 | 2,000 | $160 | $581 |
| 2024-25 | 0 | | 10,000 | $442 | 380 | 2,380 | $165 | $607 |
| 2025-26 | 0 | | 10,000 | $464 | 380 | 2,760 | $170 | $634 |
| 2026-27 | 0 | | 10,000 | $484 | 380 | 3,140 | $179 | $663 |
| 2027-28 | 0 | | 10,000 | $508 | 380 | 3,520 | $185 | $693 |
| 2028-29 | 0 | | 10,000 | $530 | 380 | 3,900 | $194 | $724 |
| 2029-30 | 0 | | 10,000 | $556 | 380 | 4,280 | $200 | $756 |
| 2030-31 | 0 | | 10,000 | $583 | 380 | 4,660 | $207 | $790 |
| 2031-32 | 0 | | 10,000 | $609 | 380 | 5,040 | $217 | $826 |
| 2032-33 | 0 | | 10,000 | $639 | 380 | 5,420 | $224 | $863 |
| 2033-34 | 0 | | 10,000 | $668 | 380 | 5,800 | $234 | $902 |
| 2034-35 | 0 | | 10,000 | $702 | 380 | 6,180 | $241 | $943 |
| 2035-36 | 0 | | 10,000 | $733 | 380 | 6,560 | $252 | $985 |
| 2036-37 | 0 | | 10,000 | $7 | 380 | 6,940 | $259 | $266 |
| 2037-38 | 0 | | 10,000 | $8 | 380 | 7,320 | $271 | $279 |
| 2038-39 | 0 | | 10,000 | $11 | 380 | 7,700 | $280 | $291 |
| 2039-40 | 0 | | 10,000 | $12 | 380 | 8,080 | $293 | $305 |
| 2040-41 | 0 | | 10,000 | $16 | 380 | 8,460 | $302 | $318 |
| 2041-42 | 0 | | 10,000 | $16 | 380 | 8,840 | $316 | $332 |
| 2042-43 | 0 | | 10,000 | $20 | 380 | 9,220 | $327 | $347 |
| 2043-44 | 0 | | 10,000 | $21 | 380 | 9,600 | $342 | $363 |
| 2044-45 | 0 | | 10,000 | $25 | 400 | 10,000 | $355 | $380 |

# - Actual previous or present fee amounts are in Italics and Blue as set by District Board of Trustees

Continues at 10,000 AF

# - Fee amounts are estimated amounts and set annually by District Board of Trustees

CWP-Saratoga Springs Exhibit A Summary and Calculation

| Fiscal Year (ie FY2008-09 = July 1, 2008 - June 30, 2009) | CWP One Time Development Charge Removed from Reserved Status (AF) | Actual and Estimated Capital Recovery Portion of Annual Fee (per AF) | Actual and Estimated OM&R Portion of Annual Fee (per AF) | Actual and Estimated Future Annual Fee (As set annually by the District) (Fee Includes the OM&R and Capital Recovery Components (per AF) | Capital Prepayment No Discount (per AF) | Capital Prepayment with 2.5% Discount (per AF) | Cost per Discounted Typical Single Family = .45 AF = WFSU .40 |
|---|---|---|---|---|---|---|---|
| 2008-09 | $5,850 | | | | $15,949 | $12,827 | $5,772 |
| 2009-10 | $6,200 | | | | $16,299 | $13,168 | $5,926 |
| 2010-11 | $7,000 | | | | $17,099 | $13,949 | $6,277 |
| 2011-12 | $7,800 | | | | $17,899 | $14,729 | $6,628 |
| 2012-13 | $8,400 | | | | $18,499 | $15,314 | $6,891 |
| 2013-14 | $8,500 | | | | $18,599 | $15,412 | $6,935 |
| 2014-15 | $9,100 | $222 | $169 | $391 | $19,199 | $15,997 | $7,199 |
| 2015-16 | $9,370 | $203 | $205 | $408 | $19,247 | $16,222 | $7,300 |
| 2016-17 | $9,600 | $252 | $175 | $427 | $19,274 | $16,426 | $7,391 |
| 2017-18 | $9,840 | $280 | $166 | $446 | $19,262 | $16,590 | $7,466 |
| 2018-19 | $10,090 | $310 | $156 | $466 | $19,232 | $16,736 | $7,531 |
| 2019-20 | $10,340 | $346 | $141 | $487 | $19,172 | $16,850 | $7,582 |
| 2020-21 | $10,600 | $364 | $145 | $509 | $19,086 | $16,935 | $7,621 |
| 2021-22 | $10,870 | $383 | $149 | $532 | $18,992 | $17,008 | $7,654 |
| 2022-23 | $11,140 | $400 | $156 | $556 | $18,879 | $17,058 | $7,676 |
| 2023-24 | $11,420 | $421 | $160 | $581 | $18,759 | $17,095 | $7,693 |
| 2024-25 | $11,720 | $442 | $165 | $607 | $18,638 | $17,126 | $7,707 |