



WASHINGTON CITY
CULINARY WATER
MASTER PLAN 2024



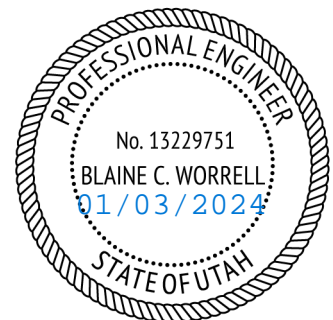
WASHINGTON CITY CULINARY WATER MASTER PLAN UPDATE, USER RATE ANALYSIS, IMPACT FEE ANALYSIS, AND IMPACT FEE FACILITIES PLAN

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I. INTRODUCTION

Washington City is located in Washington County along Interstate 15 in southwestern Utah. The City is geographically split into three sections north-to-south by both I-15 and the Virgin River. Washington City has a long agricultural heritage that is still active in the Washington Fields area of the City. However, with rapid residential growth, much of the Washington Fields area is changing from a rural to a suburban community. Residential and commercial growth are impacting nearly every area of the City.

Washington City completed a Culinary Water Master Plan update in 2017, which was an update to the 2012 Culinary Water Master Plan. The City has contracted with Sunrise Engineering to complete an update to the 2017 plan.

The culinary water system has been analyzed under the State of Utah Division of Drinking Water guidelines to determine the current system status and to evaluate possible system needs as the community grows during the next 20 years. As part of this plan, Sunrise Engineering, Inc. has recommended improvements to the culinary water system and has developed a potential financing plan that will help Washington City obtain the necessary funds for the recommended improvements. This report does not analyze water rights or water treatment.

This plan also serves as the City's Impact Facilities Plan and includes an Impact Fee Analysis.

II. SYSTEM USERS ANALYSIS

A. LENGTH OF PLANNING PERIOD

It is typical for a Master Plan to use a 10 or 20-year planning period. For example, the first year of a 10-year planning period would be the year 2023 with the 10th and final year being 2032. This plan will use fiscal years and will assume a 20-year (2023-2042) planning period for recommended improvements. This period will allow an adequate evaluation of the system for potential infrastructure improvements or other needs. Revenue sources should be carefully evaluated each year as budgets are set by the city council.

B. PROJECTED GROWTH RATE

An important element in the development of the water system and capacity analysis is the projection of the City's population growth rate on an annual basis. This projection gives the planner an idea of the potential future demands on the culinary water system for the length of the planning period. All planning for the future should be based on the expected population growth.

Projecting the number of future culinary water connections can be a subjective process. The most effective method of estimating the number of future connections is by analyzing historical numbers of connections, recent building permits, and census records. Figure II-1 below shows the historic population for the City.

Figure II-1: Historic Population

| Calendar Year | Population | Est. Growth Rate |
|---------------|------------|------------------|
| 2016 | 26,099 | - |
| 2017 | 27,401 | 4.99% |
| 2018 | 29,411 | 7.34% |
| 2019 | 31,058 | 5.60% |
| 2020 | 33,678 | 8.44% |
| 2021 | 38,015 | 12.88% |
| 2022 | 40,594 | 6.78% |

In recent years, the growth rate in the community has varied widely. At the time of the previous plan, the City anticipated a moderate growth rate for the planning window. However, Washington City has experienced high growth rates during the past decade, much greater than was anticipated in the 2017 Master Plan Update. In addition, there are plans to expand the system and number of connections which will further increase the future population.

City staff looked at the upcoming developments in different stages of the approval process to determine a realistic number of anticipated new connections in future years. The number of anticipated new connections was used to determine a growth rate. In the discussions with City

staff, it was determined that the immediately foreseeable growth may not be sustainable over the 20-year planning period, and therefore a lesser growth rate was determined for the latter years of the planning period. The following growth rates were used for this study:

- 2023-2025 (first 3 years) – 6.9% per year
- 2026-2028 (second 3 years) –5.5% per year
- 2029-2032 (next 4 years) – 4.0% per year
- 2033-2042 (last 10 years) – 3.5% per year

C. PROJECTED POPULATION & NUMBER OF CONNECTIONS

Based on the forecasted growth rates referenced above, the number of connections the City will need to plan for can be calculated with the compound interest formula shown below:

$$F = P(1 + i)^N$$

F = Future Population P = Present Population
i = Projected Growth Rate N = Years

This equation was used to project the community population and number of connections for each year in the planning period. Figure II-2 shows a summary of the growth rate analysis. Appendix A shows the full analysis.

Figure II-2: Growth Rate Analysis Summary

| Calendar Year | Population | Est. Growth rate | # of Conn. |
|---------------|------------|------------------|------------|
| 2022 | 40,594 | - | 13,916 |
| 2023 | 43,395 | 6.9% | 14,876 |
| 2024 | 46,389 | 6.9% | 15,903 |
| 2025 | 49,590 | 6.9% | 17,000 |
| 2026 | 52,318 | 5.5% | 17,935 |
| 2027 | 55,195 | 5.5% | 18,921 |
| 2028 | 58,231 | 5.5% | 19,962 |
| 2029 | 60,560 | 4.0% | 20,761 |
| 2030 | 62,982 | 4.0% | 21,591 |
| 2031 | 65,502 | 4.0% | 22,455 |
| 2032 | 68,122 | 4.0% | 23,353 |
| 2033 | 70,506 | 3.5% | 24,170 |
| 2034 | 72,974 | 3.5% | 25,016 |
| 2035 | 75,528 | 3.5% | 25,892 |
| 2036 | 78,171 | 3.5% | 26,798 |
| 2037 | 80,907 | 3.5% | 27,736 |
| 2038 | 83,739 | 3.5% | 28,707 |
| 2039 | 86,670 | 3.5% | 29,711 |
| 2040 | 89,703 | 3.5% | 30,751 |
| 2041 | 92,843 | 3.5% | 31,827 |
| 2042 | 96,092 | 3.5% | 32,941 |

It is important to understand that projected growth rates are not the cornerstone of this plan. If the maximum number of system connections projected is reached earlier or later than anticipated, future improvements to support growth may come either earlier or later.

D. PROJECTED EQUIVALENT RESIDENTIAL UNITS (ERU)

The water system is made up of multiple connection types. Washington City reports their different connections to the state as either residential, commercial, industrial, or institutional. Figure II-3 shows a summary of the number of connections by type.

Figure II-3: Total Number of Units Per Connection Type

| Calendar Year | Residential | Commercial | Industrial | Institutional | Total |
|---------------|-------------|------------|------------|---------------|--------|
| 2016 | 8,878 | 270 | 29 | 62 | 9,239 |
| 2017 | 9,599 | 291 | 30 | 100 | 10,020 |
| 2018 | 10,286 | 315 | 30 | 91 | 10,722 |
| 2019 | 10,919 | 346 | 28 | 93 | 11,386 |
| 2020 | 11,827 | 302 | 30 | 94 | 12,253 |
| 2021 | 12,674 | 394 | 46 | 99 | 13,213 |
| 2022 | 13,442 | 323 | 49 | 102 | 13,916 |

Each connection type uses different amounts of water at different rates. In order to properly analyze the system usage, the number of connections are converted to equivalent residential units (ERU). This is done by taking the average usage per connection of each connection type and dividing by the usage per connection of residential connections. Figure II-4 and Figure II-5 show the ERU per connection type and the total number of ERUs. This plan will use the number of ERUs instead of the number of connections to evaluate existing and future needs.

Figure II-4: ERUs Per Connection Type

| Calendar Year | Residential | Commercial | Industrial | Institutional |
|---------------|-------------|------------|------------|---------------|
| 2022 | 1.0 | 6.5 | 2.0 | 9.5 |

Figure II-5: Total Number of ERUs Per Connection Type

| Calendar Year | Residential | Commercial | Industrial | Institutional | Total |
|---------------|-------------|------------|------------|---------------|--------|
| 2016 | 8,878 | 1,158 | 17 | 932 | 10,985 |
| 2017 | 9,599 | 1,248 | 18 | 1,502 | 12,368 |
| 2018 | 10,286 | 1,351 | 18 | 1,367 | 13,022 |
| 2019 | 10,919 | 1,484 | 16 | 1,397 | 13,817 |
| 2020 | 11,827 | 1,296 | 18 | 1,412 | 14,553 |
| 2021 | 12,674 | 1,690 | 27 | 1,487 | 15,879 |
| 2022 | 13,442 | 1,386 | 29 | 1,533 | 16,389 |

E. AVERAGE CULINARY WATER USAGE

The State of Utah Public Drinking Water regulations require public water systems to meet requirements based upon usage. These requirements are found in Rule R309 of the State Code.

The code provides a minimum standard usage based upon the types of connections serviced in a system. The code says to use a minimum average day usage of 400 gallons per day (gpd) per ERU for indoor use and an additional 13.6 gpd per irrigated acre in the system area. However, if available, systems can use actual usage data to calculate and project usage demands. The City has flow meters that are able to provide real time flow data. This study looked at both the state's minimum standard and the historical usage to determine the appropriate usage to use for this study.

The historical usage from the City was based on meter data over the past 4 years (2019-2022). The average usage per ERU was calculated from the historical usage. The total average usage over the past 4 years was divided by the average number of ERUs and then converted to gpd/ERU as shown in the calculations below.

$$2,647,998,000 \text{ gallons} / 15,159 \text{ ERU} = \mathbf{174,677 \text{ gallon/ERU/year}}$$

$$174,677 \text{ gallon/ERU/year} / 365 \text{ days/year} = \mathbf{478.9 \text{ gpd/ERU}}$$

Figure II-6 shows a summary of the average usage and historical data gathered by the City through water metering.

Figure II-6: Washington City Historical Usage Summary

| Calendar Year | Total Usage (Thousand gallons) | Number of ERUs | Usage Per ERU (gpd/ERU) |
|-----------------|--------------------------------|----------------|-------------------------|
| 2019 | 2,428,666 | 13,817 | 481.6 |
| 2020 | 2,626,927 | 14,553 | 494.6 |
| 2021 | 2,634,571 | 15,879 | 454.6 |
| 2022 | 2,901,830 | 16,389 | 485.1 |
| 4-Year Average: | 2,647,998 | 15,159 | 478.9 |

The 478.9 gpd/ERU average usage calculated from the City's historical usage includes both indoor and outdoor water. This demand is lower than the states combined indoor and outdoor average day demand. This plan will determine usage demand from the historical usage instead of the numbers from the State Code. This method will result in a more realistic analysis.

One important note for this plan is that construction takes water from the culinary water system. This water isn't being used by Washington City connections, and therefore, should not be included in the required demand for source or storage. The amount of construction water has been counted by meters and tabulated over the last 3 years. The volume of water shown in the results above and that are used for this report do not include construction water. Construction water will be discussed in a later section.

The calculations in this report will be based on the historical average usage of **478.9 gpd/ERU** (0.33 gpm/ERU). It is recommended that future improvements be sized based on this average usage.

F. PEAK DAY DEMAND CULINARY WATER USAGE

Peak Day Demand (PDD) is defined by the Utah Administrative Code as the “anticipated water demand on the day of the highest water consumption”. The state code uses double the average day demand to calculate the PDD. The code states that this can be used in lieu of actual meter data. Washington City has provided their meter data from 2019 to 2022 and the actual PDD was found. The water meters measured how much water was used every minute of every day. This total was summed up for every day of the year and the highest daily total volume used was determined to be the PDD. This was done for all 4 years of data provided. The PDD was divided by the number of ERUs to find the PDD in terms of gpd/ERU.

Figure II-7 below shows a summary of the PDD from 2019 to 2021.

Figure II-7: Washington City Historical PDD Summary

| Calendar Year | Peak Day Demand (gal) | ERUs | PDD (gpd/ERU) |
|---------------|-----------------------|--------|---------------|
| 2019 | 13,330,000 | 13,817 | 964.7 |
| 2020 | 13,735,000 | 14,553 | 943.8 |
| 2021 | 13,718,000 | 15,879 | 863.9 |
| 2022 | 13,637,000 | 16,389 | 832.1 |
| AVG | | | 901.1 |

The historical average PDD from the last 4 years was found to be 901 gpd. All further calculations with the PDD will use this number.

G. PEAK INSTANTANEOUS DEMAND CULINARY WATER USAGE

Peak Instantaneous Demand (PID) can be described as the highest demand on the system at any one instance. The Utah Administrative Code states that for systems with 240 connections or greater, the equation $Q=1.6N$, where N equals the number of connections, can be used to find the PID. If available, this can be determined based on meter readings. In the case of this study, usage data on a per minute basis is available from the last 4 years. Figure II-8 below shows the PID from the last 4 years of data.

Figure II-8: Washington City Historical PID Summary

| Calendar Year | Peak Instant Date | Peak Instantaneous Demand (gal) | Peak Instantaneous Demand (gal) |
|---------------|-------------------|---------------------------------|---------------------------------|
| 2019 | 2-Sep | 1,248,949 | 20,816 |
| 2020 | 13-Jul | 1,571,003 | 26,183 |
| 2021 | 12-Jul | 1,282,092 | 21,368 |
| 2022 | 18-Jul | 1,186,019 | 19,767 |
| AVG | | 1,322,016 | 22,034 |

The PID that will be used for this study is **22,034 gpm**.

H. USAGE REDUCTION - CONSERVATION

This plan assumes a conservation rate of 0.5% per year over the planning period (10% by the end of planning window). This conservation factor is used to represent conservation efforts from the City, existing customers, or new connections. The assumed conservation results in the following demands at the end of the planning window.

- ADD (2042) = 433 gpd/ERU
- PDD (2042) = 815 gpd/ERU

The conservation factor is not used for the PID. As mentioned above, the PID is the highest demand on the system at any given moment. Conservation efforts do not have a major impact on the amount of water that could be used at any given moment.

Conservation is a major focus for Washington City and the surrounding communities. The 0.5% conservation rate assumed in this plan is a relatively small reduction from conservation. The City has a conservation goal that is higher than 0.5% per year. The City's Water Conservation Plan established a goal that would have usage drop to 12,200 gal a month or 406 gpd/ERU. This is a reduction of 18% from current usage. If this was achieved in the planning window this would be a reduction of 0.9% per year or more.

III. WATER SOURCE CAPACITY ANALYSIS

A. EXISTING WATER SOURCE

To analyze source capacity, all available culinary water sources must first be identified. These sources are listed in Figure III-1. The flow capacity numbers were acquired from City staff.

Figure III-1: Washington City Existing Water Sources

| Wells | Total Flow | |
|--------------------------------|------------|--------|
| | CFS | gpm |
| No. 2 | 0.909 | 408 |
| No. 3 | 0.245 | 110 |
| No. 4 | 1.453 | 652 |
| No. 5 | 1.689 | 758 |
| No. 6 | 1.448 | 650 |
| Grapevine Well No. 1 | 0.207 | 93 |
| Grapevine Well No. 2 | 0.180 | 81 |
| Grapevine Well No. 3 | 0.227 | 102 |
| Grapevine Well No. 4 | 0.303 | 136 |
| Grapevine Well No. 5 | 0.254 | 114 |
| Grapevine Well No. 6 | 0.430 | 193 |
| Subtotal Wells = | 7.346 | 3,297 |
| Microfiltration (Quail Lake) | 4.345 | 1950 |
| Washington Dam Booster | 6.005 | 2695 |
| Fields Road WCWCD Connection | 8.913 | 4000 |
| East Regional WCWCD Connection | 8.913 | 4000 |
| SHRP WCWCD Connection | 3.342 | 1500 |
| Grand Totals = | 38.864 | 17,442 |

Most of the source capacity is currently coming from connections to the Washington County Water Conservancy District (WCWCD).

B. EXISTING REQUIRED WATER SOURCE CAPACITY

State of Utah Public Drinking Water Regulations, R309-510-7 states that a water system's source needs to meet "the anticipated water demands on the day of the highest water consumption, which is the Peak Day Demand". The PDD was determined previously as 901 gpd/ERU. The source capacity demand for the water system was calculated by multiplying the PDD from Section II-F by the total number of existing ERUs in the system. The results of the analysis are presented in gallons per minute and are shown in Figure III-2.

Figure III-2: Required Source Capacity (Existing Conditions - Beginning of Year 2023)

| | | |
|--|---------------|------|
| Total Required Source Capacity | 10,256 | gpm |
| Total Existing Source Available | 17,442 | gpm |
| Existing Culinary System Source Capacity Surplus | 7,186 | gpm |
| Surplus Capacity can Serve | 11,483 | ERUs |

PROJECTED REQUIRED WATER SOURCE CAPACITY

Projected required source capacity for the 10-year and 20-year planning periods uses the same calculations as above. These calculations reveal that the water system will have a deficit of source capacity. The projected required source capacity for the 10-year and 20-year planning periods are shown in Figure III-3 and Figure III-4.

Figure III-3: Required Source Capacity (10-Year Planning Period)

| | | |
|---|--------|-----|
| Total Required Source Capacity | 16,370 | gpm |
| Total Existing Source Available | 17,442 | gpm |
| Culinary System Source Capacity Surplus | 1,072 | gpm |

Figure III-4: Required Source Capacity (20-Year Planning Period)

| | | |
|---|--------|-----|
| Total Required Source Capacity | 21,962 | gpm |
| Total Existing Source Available | 17,442 | gpm |
| Culinary System Source Capacity Deficit | -4,520 | gpm |

C. RECOMMENDED WATER SOURCE CAPACITY IMPROVEMENTS

The analysis above shows that the existing available source is sufficient to accommodate an existing peak day demand. However, based on the growth rates used in this plan the City will run out of available source by 2034.

At the current time, there are no other feasible new source improvements for the City to develop. New source capacity will most likely come from purchasing water from the WCWCD. One major drawback to this option is that the WCWCD does not guarantee that there is additional water available to be purchased. The City should work closely with WCWCD to plan for future needs.

The other major drawback to purchasing additional water from the WCWCD is cost. Currently the cost to purchase 1,000 gallons of culinary grade water is \$1.54 and is anticipated to increase to \$1.74 by 2025. The amount of water currently purchased will carry the city through the 10-year planning window. However, by the end of the 20-year window the additional water the city would need to purchase would amount to approximately \$617,000 annually. Note that this cost is just the purchase cost to the district. This cost does not include costs to get water into the system such as pumping costs. This number also assumes the district rate does not increase after 2025.

Another option to increase source capacity is using secondary water for outdoor use. Implementing an irrigation system that uses secondary water will help alleviate the amount of culinary source required to meet the demands of the system. Every gallon of non-culinary water used for outdoor watering adds a gallon of water available for culinary use. Figure III-5 below shows a summary of average indoor versus outdoor usage in the City.

Figure III-5: Average Outdoor Vs. Indoor Water Use

| Calendar Year | Avg Daily Usage (gal) | Avg Indoor Usage (gal) | Avg Outdoor Usage (gal) | % Outdoor Usage |
|---------------|-----------------------|------------------------|-------------------------|-----------------|
| 2019 | 6,653,879 | 2,514,968 | 4,138,910 | 62% |
| 2020 | 7,197,060 | 2,566,333 | 4,630,727 | 64% |
| 2021 | 7,218,003 | 3,053,133 | 4,164,870 | 58% |
| 2022 | 7,950,219 | 3,712,078 | 4,238,141 | 53% |
| Avg | 7,254,790 | 2,961,628 | 4,293,162 | 59% |

The following information was discovered while comparing indoor vs outdoor watering use in the City:

- Approx. 59% of culinary water is used for outdoor watering on a daily basis.
- In one year approximately 1.5 billion gallons of culinary water is used for outdoor watering.

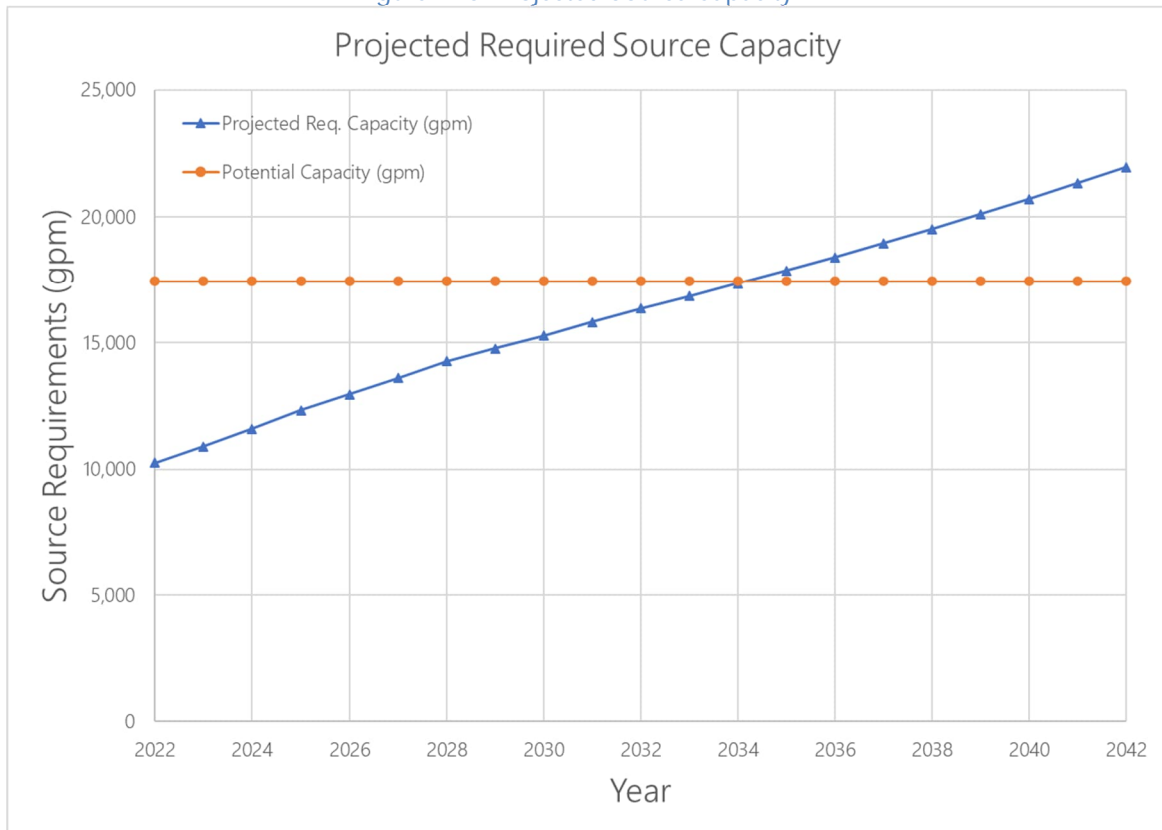
The major downside for a secondary water system is also cost. This cost is initially in the form of upfront capital cost to design and construct a pressurized irrigation system. The City does have some infrastructure already in place that could be used as a starting point to implement an irrigation system with a smaller amount of upfront costs than constructing a completely new system.

This plan assumes that future source water will come from purchasing additional water from the WCWCD. To deliver this water to the system, pump stations will need to be constructed and connections made to WCWCD lines. These pump station projects are included in the recommended distribution improvements.

D. SOURCE CAPACITY SUMMARY

Figure III-6 shows the comparison between the available source capacity and the projected required source capacity.

Figure III-6: Projected Source Capacity



IV. WATER STORAGE CAPACITY ANALYSIS

Water storage capacity requirements are found in the State of Utah Public Drinking Water Regulations, R309-510. These regulations require storage for the community's culinary water system to meet one full day's average use requirement for all connections in the system, in addition to fire flows, for a minimum of two hours, and emergency storage as deemed necessary.

A. EXISTING WATER STORAGE CAPACITY

There are currently seven culinary water storage tanks in Washington City. These tanks are identified in Figure IV-1 below:

Figure IV-1: Storage Capacity Summary

| Existing Storage Capacity: | Available Storage (gal) |
|--|-------------------------|
| RED CLIFFS 2 MG TANK | 2,110,000 |
| RED CLIFFS 1 MG TANK | 1,020,000 |
| RED CLIFFS 2.3 MG TANK | 2,320,000 |
| GRAPE VINE 1 MG TANK | 1,060,000 |
| WARNER VALLEY TANK | 1,030,000 |
| WASHINGTON DAM ROAD TANK | 2,270,000 |
| WATER TREATMENT PLANT TANK | CT ONLY |
| Total Existing Storage Capacity | 9,810,000 |

B. EXISTING REQUIRED WATER STORAGE CAPACITY

As shown in Section II-E, average water usage per ERU, also known as the Average Day Demand (ADD), in the water system is 478.9 gpd/ERU for both indoor and outdoor usage. In general, fire flow requirements are set by the local Fire Authority or are based on building size and type of construction. At the direction of the City, this plan uses 1,500 gpm, the same minimum fire flow as the previous plans.

The required storage capacity was calculated by multiplying the ADD by the total number of ERUs currently existing in the system. When compared with the system's total storage capacity summarized above, the calculation shows that the City has a small surplus of total storage capacity under current conditions. The results of this analysis are shown in Figure IV-2.

Figure IV-2: Required Storage Capacity (Existing Conditions - Beginning of Year 2023)

| | | |
|---|------------------|------|
| Total Required Storage Capacity | 8,029,456 | gal |
| Total Existing Storage Capacity | 9,810,000 | gal |
| Existing Culinary System Storage Capacity Surplus | 1,780,544 | gal |
| Surplus Capacity can Serve | 3,718 | ERUs |

C. PROJECTED REQUIRED WATER STORAGE CAPACITY

The projected culinary water storage capacity required at the end of the planning period is determined from the same factors explained in Section B above, but the projected number of ERUs are inserted into the calculations instead of the number of existing ERUs. The results of the analysis are shown below in Figure IV-3 and Figure IV-4.

Figure IV-3: Required Storage Capacity (10-Year Planning Window)

| | | |
|--|-------------------|-----|
| Total Required Storage Capacity | 12,708,360 | gal |
| Total Existing Storage Capacity | 9,810,000 | gal |
| Projected Culinary System Storage Capacity Deficit | -2,898,360 | gal |

Figure IV-4: Required Storage Capacity (20-Year Planning Window)

| | | |
|--|-------------------|-----|
| Total Required Storage Capacity | 16,988,484 | gal |
| Total Existing Storage Capacity | 9,810,000 | gal |
| Projected Culinary System Storage Capacity Deficit | -7,178,484 | gal |

D. RECOMMENDED WATER STORAGE CAPACITY IMPROVEMENTS

The analysis above shows that the City has adequate storage for their current needs. However, with the projected growth of this plan the required storage will surpass the storage that is currently available. This plan provides recommended improvements to provide the future required storage capacity.

An analysis was done to determine the number of buildout ERUs and where these ERUs will be located within the current city boundary. This was done by using the City's current zoning map and assuming the City would be built out to the max density allowed by the current zones. For this analysis the City was divided into thirds (north, central, and south). Storage recommendations should consider elevation requirements. The analysis resulted in the following number of additional ERUs per region to achieve buildout:

- North: 6,000 ERUs
- Central: 6,000 ERUs
- South: 16,000 ERUs

The additional ERUs to reach buildout will require approximately 14 million gallons of storage. With the City's existing storage surplus there is approximately 1 million gallons available in the north section of the City. This results in the need for an additional 13 million gallons of storage tanks to be constructed to achieve buildout. The following is the approximate storage needs for each section of the City based on the current ADD and storage requirements:

- North: 2 million gallons
- Central: 3 million gallons

- South: 8 million gallons

Based on the growth rate used for this plan it is anticipated that buildout will occur beyond the 20-year planning window. To accommodate the projected storage requirements this plan recommends six storage projects to be installed in the central and south areas of the City. The north section does not include any locations of suitable elevation and location for installing a storage structure. However, one of the six storage tanks is located to provide some storage to address the demand of the north section.

With the existing surplus and the storage from a portion of one of the proposed storage tanks there will be approximately 2.5 million gallons provided for the north towards buildout growth. An additional 500 thousand gallons of storage will be required in the north to handle build out ERU's. This additional storage is anticipated to happen outside the 20-year planning window.

The following are descriptions of the recommended improvements as well as their recommended size and installation window. It is important to note that the installation window is approximate based on today's data. Windows are subject to change based on development areas and the City's ability to obtain land to install tanks.

1. 0 to 5 YEAR IMPROVEMENTS

- Long Valley Tank – This tank is located in the vicinity of the Long Valley development that is currently under construction. It is recommended that this tank be a 2.5-million-gallon tank. This tank is currently in the design process and anticipated to be constructed in 2023.
- Airport Tank 1 – This tank will be located in the south end of the City near the airport. It is recommended that this tank be a 2.5-million-gallon tank. The primary purpose of this tank will be to serve the new developments near the airport. This tank is planned to be located on BLM property and will require working with BLM to obtain approval.
- Sunrise Valley Tank – This tank will be located south of the landfill and west of Sunrise Valley. This tank will serve the new Sunrise Valley development and surrounding area. This tank will also serve portions of Coral Canyon that are on a lower pressure zone. It is recommended that this tank be a 2.5-million-gallon tank.

2. 5 to 10 YEAR IMPROVEMENTS

- Majestic Tank – This tank will be located west of SR-7. This tank would serve the southern Washington Fields area and is recommended to be a 2.5-million-gallon tank.

3. 10 to 20 YEAR IMPROVEMENTS

- Airport Tank 2 – As the area around the airport develops further, additional storage will be required for the area. This tank is recommended to be 2.5 million gallons and to be located adjacent to the first Airport Tank.

- Stucki Farms Tank – This tank would be located west of the Stucki Farms Development, on the ridge between Stucki Farms and southern Washington Fields. This tank is recommended to be a 1-million-gallon tank and will serve the southern Washington Fields area.

These recommended storage improvements are summarized in Figure IV-5. Appendix D includes an exhibit showing the location of these improvements.

Figure IV-5: Summary of Recommended Storage Improvements

| Proposed Tank | Approx. High Water Elevation (ft) | Available Storage (gal) | Est. Installation Date |
|------------------------------------|-----------------------------------|-------------------------|------------------------|
| Long Valley 2.5 MG Tank | 3140 | 2,500,000 | 2023 |
| Airport 1 2.5 MG Tank | 3040 | 2,500,000 | 2024 |
| Sunrise Valley 2.5 MG Tank | 3000 | 2,500,000 | 2025 |
| Majestic 2.5 MG Tank | 3040 | 2,500,000 | 2032 |
| Airport 2 2.5 MG Tank | 3040 | 2,500,000 | 2036 |
| Stucki Farms 1 MG Tank | 2815 | 1,000,000 | 2038 |
| Total Projected New Storage | | 13,500,000 | |

E. STORAGE CAPACITY SUMMARY

Figure IV-6 and Figure IV-7 both show the comparison between the available storage capacity and the projected required storage capacity. The available storage capacity in Figure IV-7 represents the storage capacity available with the implementation of the recommended improvements.

Figure IV-6: Projected Storage Capacity with Existing Conditions

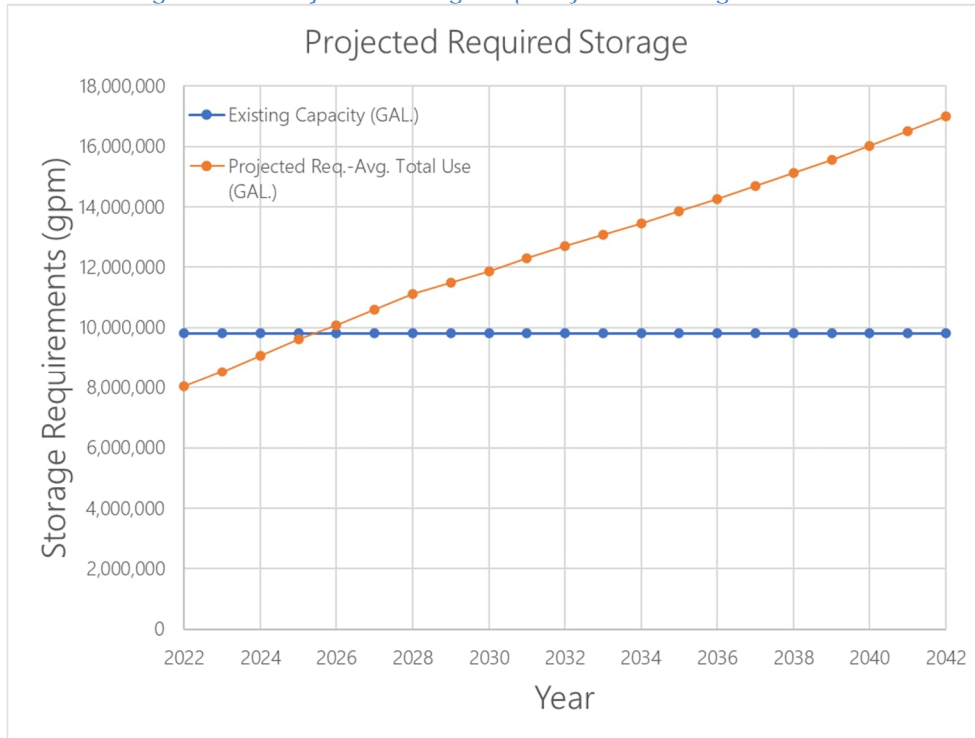
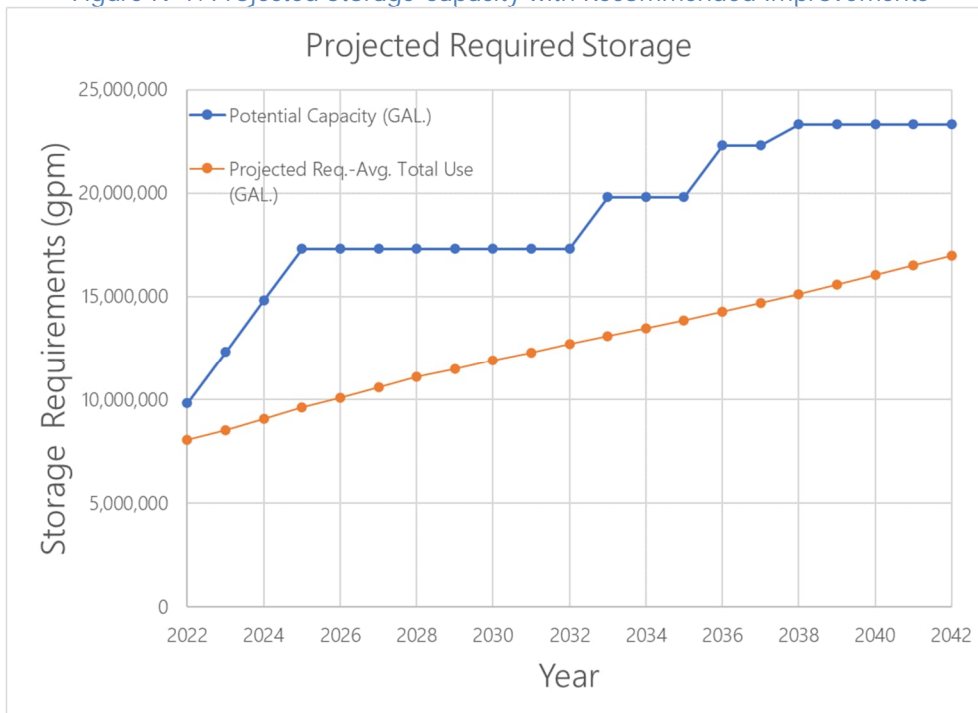


Figure IV-7: Projected Storage Capacity with Recommended Improvements



V. WATER DISTRIBUTION SYSTEM ANALYSIS

The State of Utah Public Drinking Water Regulations, R309-105-9, states three pressure conditions which must be met to demonstrate adequate service capacity of a system. These conditions are:

- At least 40 psi must be retained as residual pressure in the distribution system under a Peak Day Demand (PDD).
- At least 30 psi must be retained as residual pressure in the distribution system under Peak Instantaneous Demand (PID)
- At least 20 psi must be retained as residual pressure in the distribution system under PDD plus fire flow conditions.

The existing Washington City culinary water distribution system has been modeled using the computer program Water Gem by Bentley. Historically, the distribution system was modeled in a static scenario to analyze Average Day, Peak Instantaneous, and Peak Day with fire flow demands. In addition to the static scenario, a dynamic model was created using the real time flow data available from the City's meters. The dynamic model provides a view of how the system's sources, storage, and distribution system, including pumps and valves, work together to provide the continuous demands to the system.

The main benefit to the dynamic water model is that it will provide a tool for City staff to evaluate and plan how the system will function based on adjustments such as turning on or off certain pumps or adjusting a setting on a PRV. This will also give the City staff the ability to come up with solutions for emergency scenarios and faster feedback than trying the solutions in the field first.

A. EXISTING DISTRIBUTION SYSTEM ANALYSIS

The existing PDD and PID were calculated in Section II. These flows are shown below:

- PDD – 901 gpd/ERU = 10,256 gpm with the existing number of ERUs
- PID – 22,034 gpm

As mentioned in Section IV, this report used a fire flow of 1,500 gpm.

The existing model scenarios for Peak Day Demand, Peak Day Demand with fire flow, and Peak Instantaneous Demand, show that the existing system is adequate to meet these demands with the exception of a couple small areas. These areas include:

- Perry's Landing - this is a development on the north edge of the city below the Red Cliff storage tanks. The development is on the top edge of the lower pressure zone and therefore experiences low pressures and fire flows.
- Shadow Ridge - this is a small area on the north side of Telegraph on the west side of town. Currently the main line into the area is a 6" line that does not provide adequate fire flow.
- Lion's Head Dr. - this is located in the Green Spring area. Lions Head Dr. is located on the edge of a pressure zone and the high end of the pressure zone shows low fire flows.

B. PROJECTED DISTRIBUTION SYSTEM ANALYSIS

The projected distribution system was modeled in a static scenario with the following future demands:

- PDD – 832 gpd/ERU = 21,962 gpm with the projected (2042) number of ERUs
- PID – 52,157 gpm
- Fire flow of 1,500 gpm

Most of the new growth will occur in newly developed areas. Because of this, the new developments will be required to install the needed distribution improvements for the development. The new demand on the system is not anticipated to have enough of an impact on the existing distribution system to cause areas to fall below the State's minimum pressure requirements or for pipe velocities to be above 5 feet per second.

The new growth areas do require transmission lines to deliver water to the development or the storage tanks that are serving the development. As discussed in the source capacity section these new developments will also require additional source which will need to come from WCWCD. To deliver this source capacity, new pump stations will be needed.

This section includes the recommended transmission lines, and booster pump stations.

C. RECOMMENDED DISTRIBUTION SYSTEM IMPROVEMENTS

The following are descriptions of the recommended improvements as well as their recommended size and installation window:

1. 0 to 5 YEAR IMPROVEMENTS

- Washington Fields Transmission Line – This project will extend the transmission line in Washington Fields Road south towards the airport for the future development in the area, and be used for getting water to the Airport Tank. This project is currently being designed and is planned to be constructed in 2023.

- Airport Connection Phase 1 – This is a booster pump station that will be constructed near the Washington Fields Transmission line. The booster pump will be used to take water from the WCWCD line to fill the Airport Tank using the Washington Fields Road transmission line. This is anticipated to be approximately a 1,500-gpm booster pump station and constructed in 2024
- Perry's Landing Pressure Zone Adjustment – This project will add piping and valving to the development to adjust the pressure zone and move the development into the higher-pressure zone. This project is anticipated to be installed in 2024.
- Fields Road to Airport Tank Transmission – This project is a transmission line that connects the Fields Road Transmission line and the Airport Tank. It is anticipated that this project will be installed in 2024.
- Sunrise Valley Transmission Line – This transmission line will have two segments; one will run from the proposed Sunrise Valley tank to Sunrise Valley. The second segment will tie into the Coral Canyon line in Telegraph Road. It is anticipated that this project will be constructed in 2025.
- Shadow Ridge 6" Line Replacement – This project replaces an existing 6" with an 8" line to increase pressures and fire flows in the area. This project is anticipated to be installed in 2025.
- Lions Head Dr. PRV – This project adds a connection between the two pressure zones in the area and adds a low flow PRV allowing for fire flows to cross between pressure zones to increase fire flow in the lower pressure zone area. This project is anticipated to be installed in 2025.

2. 5 to 10 YEAR IMPROVEMENTS

- This plan does not have any recommended distribution projects included in the 5-to-10-year window.

3. 10 to 20 YEAR IMPROVEMENTS

- East Regional Connection Phase 2 – This project will expand the existing East Regional pump station to double the flow that it can produce. The project will involve renovating the existing building, adding more pumps, and installing a parallel transmission line that follows the alignment of the first phase of the East Regional Connection Project. This project is anticipated to be constructed in 2033.
- Church Farm Road Transmission Line – This transmission line is anticipated to run from Warner Valley Road to the Airport Tanks via Church Road. This project is anticipated to be installed in 2033.

- Airport Connection Phase 2 – This project will expand the first phase pump station to increase the flow that it can produce. It is anticipated that the flow will need to be increased by 1,700 gpm. This project is anticipated to be constructed in 2034.
- Airport Connection Phase 3 – This project will add a second booster pump station and connection to the WCWCD line in Warner Valley Road. This pump station will deliver water to the Airport tanks. It is anticipated that this pump will need to produce 5,000 gpm. This pump station will deliver water to the tanks via the Church Road transmission line.

VI. SUMMARY OF RECOMMENDED IMPROVEMENTS

Figure VI-1 is a summary of the recommendations for improvements to the storage and distribution systems. As mentioned before, there are no specific source recommendations, except as they relate to the distribution needs to deliver water from the WCWCD. Project installation years are estimated for planning purposes. Actual project time frames will be based on development locations, availability of funding, and availability of land to install project.

Figure VI-1: Summary of Recommended Improvements

| Storage Improvements | Est. Installation Year | Est. Cost |
|---|------------------------|----------------------|
| Long Valley - 2.5 MG Tank | 2024 | \$ 7,538,540 |
| Airport 1 - 2.5 MG Tank | 2025 | \$ 6,613,300 |
| Sunrise Valley - 2.5 MG Tank | 2026 | \$ 6,996,700 |
| Majestic - 2.5 MG Tank | 2032 | \$ 7,596,800 |
| Airport 2 - 2.5 MG Tank | 2036 | \$ 6,524,700 |
| Stucki Farms - 1 MG Tank | 2038 | \$ 5,504,300 |
| Storage Subtotal = | | \$ 40,774,340 |
| Distribution Improvements | Est. Installation Year | Est. Cost |
| Washington Fields Rd. Transmission Line | 2024 | \$ 2,929,550 |
| Fields Road To Airport Tank Transmission Line | 2025 | \$ 4,410,300 |
| Airport Connection Phase 1 | 2025 | \$ 994,937 |
| Perry's Landing Pressure Zone Adjustment | 2025 | \$ 389,900 |
| Sunrise Valley Transmission Line | 2026 | \$ 2,186,650 |
| Shadow Ridge 6" Line Replacement | 2026 | \$ 264,000 |
| Lion's Head Dr. PRV | 2027 | \$ 164,350 |
| Church Road Transmission Line | 2033 | \$ 4,357,400 |
| East Regional Connection Phase 2 | 2033 | \$ 8,587,756 |
| Airport Connection Phase 2 | 2034 | \$ 3,217,211 |
| Airport Connection Phase 3 | 2037 | \$ 3,811,519 |
| Distribution Subtotal = | | \$ 31,313,573 |
| Grand Total of All Projects | | \$ 72,087,913 |

**This summary is estimated with 2023 prices*

A. ENGINEER'S OPINION OF PROBABLE COST

Opinions of probable cost for the recommended improvements have been prepared and are included in Appendix C. Opinions of probable cost for each of the capital projects are based on experience with similar projects, bid tabulations from past projects, and from information provided by the City through prior experience.

It is important to note that cost estimates from this update are significantly higher than the previous master plan. It is common for project costs to increase over time with inflation. Typically, it is expected to see an annual increase of approximately 3%. Due to the material and

construction market changes that have happened from 2020 to now the market has experienced project cost increases between 50 to 100% from 2019 costs. This increase in project costs is reflected in the opinions of cost for the recommended projects. These increased costs are also a factor in the increases to fees in later sections.

The opinions of probable project costs included in this report are planning-level cost only. As the City seeks to undertake specific projects, more detailed and updated costs should be prepared to guide project development through the preliminary engineering and budgeting acquisition phases.

VII. WATER CONSERVATION

The analyses above show that the City will have deficiencies in both source and storage capacities within the 10-year window. One way for the City to mitigate the need or timing of these improvements is through conservation.

The usage analysis in this plan is based on historic usage. If the per ERU usage is reduced, that would reduce the Average Day, Peak Day, and Peak Instantaneous Demands. A reduction in these demands could delay the need for some of these improvements.

A. SECONDARY WATER USE (IRRIGATION)

As mentioned in the source capacity analysis, most of the City's outdoor watering uses culinary water. This results in approximately 1.5 billion gallons of culinary water being used for outdoor purposes each year. There are no available source improvements the City could make to get culinary grade water but there are options to increase and implement secondary water sources. These potential options include the pursuit of rights for new wells, shares to get water from the Virgin River, improving existing spring and well irrigation sources, and in the near future, the WCWCD's Warner Valley Reservoir.

The City already has some existing infrastructure in place for a pressurized irrigation system. Connecting this existing system to an irrigation source would immediately begin to alleviate the existing required source capacity.

One of the challenges of implementing a secondary water system is the quality of water of the sources that are available. Many of the available sources such as the canal company and wells in the fields are high in Total Dissolved Solids (TDS) which is not good for plants. For a full functioning system, it is likely that the high TDS source would need to be blended with higher quality spring water or possibly even culinary water before being utilized into a system.

B. CONSERVATION FOCUSED USER RATE STRUCTURE

One way to promote potential conservation is through the City's user rate structure. Washington City currently has a tiered user rate structure. This means that after a customer uses a specified amount of water the rate they are charged per thousand gallons goes up. For example, the current rate structure charges \$0.74 per thousand gallons used for the first 5,000 gallons and then \$0.86 per thousand gallons for the next 5,000 gallons.

This tier structure can be used to incentivize conservation from all customers by increasing the rates of their higher rate tiers. A higher gap in the fees for each tier will incentivize customers to use less water or pay a higher monthly water bill. A similar program has been introduced by the Washington County Water Conservancy District. Their program places a fee for all usage over a certain amount.

A user rate analysis is part of this plan and is shown in a later section. That analysis looks at a conservation focused tier structure as part of the recommended user rate.

C. WATER CONSERVANCY DISTRICT PROGRAMS

The Washington County Water Conservancy District has multiple programs that the City and residents could use to promote water conservation. The District's website has a list of programs and incentives that are currently available. Below is the website that contains a list of available programs.

<https://www.wcwcd.org/conservation/programs/>

D. CONSTRUCTION WATER

Currently the water used for construction projects in the City is culinary grade water. This is because there is no other option available in the city. As mentioned earlier, this water was not included in the sizing requirement for the water system as it is not being used by Washington City connections. However, when culinary water is being used for construction, that water is not available for the residents of the City. Construction water demands on the system could be mitigated by providing non-culinary grade water for construction. This could include secondary (irrigation water) or reuse water. Figure VII-1 shows the annual construction water use over the last 4 years.

Figure VII-1: Annual Construction Water Usage

| Calendar Year | Total Construction Water Usage (gal) |
|---------------|--------------------------------------|
| 2019 | 59,127,000 |
| 2020 | 131,619,000 |
| 2021 | 169,356,000 |
| 2022 | 139,832,000 |

VIII. POSSIBLE FINANCING PLAN

Based on current water fund balance and the user rate proposed in this plan the City will need to finance the first few recommended improvements for them to be constructed in the recommended time frame. This plan assumes that the City will seek financing options for the construction of the following projects:

- Long Valley Tank
- Airport Tank 1
- Fields Road to Airport Transmission Line
- Airport Connection Phase 1
- Sunrise Valley Tank
- Sunrise Valley Transmission Line

For culinary water projects typical sources of funding include Utah's Division of Drinking Water (DDW), the Utah Community Impact Board (CIB), or the open market. At this time, it is not anticipated that any grant money would be available for these projects. This plan assumes that any funding would come as a loan. This plan uses a loan term of 20 years at 4.5%. These terms are only for planning purposes.

The above five projects can realistically be combined into three projects, the Long Valley Tank and Pump Station, the Airport Tank, and Sunrise Valley Tank projects. This is done to simplify the possible financing plan into three bonds, one for each project. Using the costs from Section VI, accounting for inflation, and using the terms mentioned above results in the following new debt services:

- Long Valley Tank - \$579,533/year
- Airport Tank - \$951,654/year
- Sunrise Valley Tank - \$748,978/year

These debt services will be used for the financial analyses in later sections.

IX. FINANCIAL ANALYSIS

A. EXISTING USER RATE

Water rates are a combination of base rates and overage (or variable) rates. The base rate is charged to all connections in the system whether or not water is used and should cover all fixed costs of the system. Overage rates are often set to encourage water conservation and should cover variable costs of the system. Washington City currently has the following rate structure:

| Meter Size | Base Rate |
|------------|------------|
| 5/8" | \$18.17 |
| 3/4" | \$18.17 |
| 1" | \$33.00 |
| 1 1/2" | \$73.00 |
| 2" | \$130.00 |
| 3" | \$291.00 |
| 4" | \$517.00 |
| 6" | \$1,163.00 |

| Tier | Threshold Gallons | Washington City | WCWCD* | Rate/1000 gal |
|------|--------------------|-----------------|--------|---------------|
| 1 | 0 - 5,000 | \$0.74 | \$0.96 | \$1.70 |
| 2 | 5,001 - 10,000 | \$0.86 | \$0.96 | \$1.82 |
| 3 | 10,001 - 15,000 | \$0.98 | \$0.96 | \$1.94 |
| 4 | 15,001 - 20,000 | \$1.10 | \$0.96 | \$2.06 |
| 5 | 20,001 - 25,000 | \$1.20 | \$0.96 | \$2.16 |
| 6 | 25,001 - 30,000 | \$1.34 | \$0.96 | \$2.30 |
| 7 | 30,001 - 35,000 | \$1.51 | \$0.96 | \$2.47 |
| 8 | 35,001 - 40,000 | \$1.68 | \$0.96 | \$2.64 |
| 9 | 40,001 - Unlimited | \$1.85 | \$0.96 | \$2.81 |

Increases in the base rate are correlated to connection size. The base rates are proportional to the surface area of the respective meter. For example, a 1 1/2" water meter has four times the area of the 3/4" water meter. Thus, the base rate for a 1 1/2" water meter is four times the standard base rate.

B. WCWCD RATE

A large portion of the water source used in the City comes from the WCWCD. Currently the City is charged \$1.64 per thousand gallons that it delivers to residents. WCWCD is increasing this rate by \$0.10 every year through 2025.

The City provides in its existing rate structure a per thousand-gallon cost for water from the WCWCD. This is a weighted average that takes into account the amount of source that the City provides that is not from WCWCD. During the previous user rate adjustment, the City produced

approximately 60% of the water being used with the remaining 40% coming from the WCWCD. Taking into account the cost for the City to produce 1,000 gallons of water vs the cost to purchase 1,000 gallons of water it was calculated that the weighted average cost of water to residents was \$1.06.

In 2022, the City only produced 40% of the water and the remaining 60% came from the WCWCD. As the City continues to grow this ratio will continue to change, further resulting in the weighted average to eventually be similar to the Water District's per thousand-gallon charge. It is recommended that this portion of the user rate structure be removed as it complicates the user rate structure and is not as relevant as it has been in the past.

As stated previously, the WCWCD rate for water is increasing annually. It is recommended that the City increase this portion each year to match the increase of the WCWCD water cost.

In addition to the cost for purchasing water from the WCWCD, each user is also charged a \$1.75 surcharge each month from the WCWCD.

C. AVERAGE RATE DETERMINATION

The study provides an average rate analysis to determine the average water rate per ERU needed to cover the expenses of the water system. The analysis uses recent fiscal year expenses and annual budgets to project the following year's expenses, and also uses new expenses associated with proposed improvements such as new debt services. This analysis considers projected expenses and income sources to determine the amount of revenue needed to be generated by user rates.

The target revenue needed from user rates is divided by the estimated number of ERUs serviced by the system and converted to an average monthly rate. This gives the average user rate needed per ERU to cover the expenses of the water system. The analysis results in an average user rate per ERU of \$47.22 per month. The table below shows the user rate analysis.

Figure IX-1 User Rate Analysis

| Average Water Rate Analysis Washington City | | | | | |
|--|------|--------------|------|--------------|---------------|
| FY 2024 | % | Fixed | % | Variable | Total |
| Salaries Regular | 68% | \$ 1,118,805 | 32% | \$ 526,497 | \$ 1,645,302 |
| Employee Benefits | 68% | \$ 694,980 | 32% | \$ 327,049 | \$ 1,022,029 |
| Overtime | 0% | \$ - | 100% | \$ 36,266 | \$ 36,266 |
| Uniforms | 80% | \$ 9,032 | 20% | \$ 2,258 | \$ 11,290 |
| Dues And Memberships | 0% | \$ - | 100% | \$ 2,950 | \$ 2,950 |
| Software Subscriptions | 0% | \$ - | 100% | \$ 64,810 | \$ 64,810 |
| Training & Travel | 0% | \$ - | 100% | \$ 16,315 | \$ 16,315 |
| Office Equipment- Supplies & Maint. | 25% | \$ 913 | 75% | \$ 2,738 | \$ 3,650 |
| Supplies & Materials | 25% | \$ 76,175 | 75% | \$ 228,525 | \$ 304,700 |
| Fuel | 0% | \$ - | 100% | \$ 51,000 | \$ 51,000 |
| Fleet Charges | 25% | \$ 6,725 | 75% | \$ 20,175 | \$ 26,900 |
| Small Tools & Minor Equipment | 25% | \$ 3,625 | 75% | \$ 10,875 | \$ 14,500 |
| Building & Grounds | 75% | \$ 12,743 | 25% | \$ 4,248 | \$ 16,990 |
| Utilities | 10% | \$ 110,600 | 90% | \$ 995,400 | \$ 1,106,000 |
| Telephone | 25% | \$ 3,750 | 75% | \$ 11,250 | \$ 15,000 |
| Professional & Technical | 25% | \$ 96,185 | 75% | \$ 288,555 | \$ 384,740 |
| Water Purchase Sand Hollow | 0% | \$ - | 100% | \$ 2,414,095 | \$ 2,414,095 |
| Water Purchase Quail Lake Raw | 0% | \$ - | 100% | \$ 621,000 | \$ 621,000 |
| Administrative Costs | 50% | \$ 267,522 | 50% | \$ 267,522 | \$ 535,043 |
| District Surcharge (WCWCD \$1.75 Surcharge) | 100% | \$ 362,775 | 0% | \$ - | \$ 362,775 |
| Uncollectable accounts | 100% | \$ 2,080 | 0% | \$ - | \$ 2,080 |
| Fees & Charges | 0% | \$ - | 100% | \$ 2,080 | \$ 2,080 |
| Miscellaneous Service | 0% | \$ - | 100% | \$ 1,300 | \$ 1,300 |
| Other Projects | 30% | \$ 162,240 | 70% | \$ 378,560 | \$ 540,800 |
| Capital Equipment | 30% | \$ 62,100 | 70% | \$ 144,900 | \$ 207,000 |
| Capital Projects | 30% | \$ 105,000 | 70% | \$ 245,000 | \$ 350,000 |
| Lease Purchase | 50% | \$ 1,650 | 50% | \$ 1,650 | \$ 3,300 |
| Funded Depreciation | 100% | \$ 1,710,000 | 0% | \$ - | \$ 1,710,000 |
| Total O&M Expenses | | | | | \$ 11,471,915 |
| EXISTING DEBT SERVICE NOT IMPACT FEE ELIGIBLE | | | | | |
| Water Revenue Refunding Bonds 2016B | 100% | \$ 382,598 | 0% | \$ - | \$ 382,598 |
| NEW DEBT SERVICE | | | | | |
| Long Valley Tank (2025) | 100% | \$ 735,290 | 0% | \$ - | \$ 735,290 |
| Airport Tank and Transmission Line (2026) | 100% | \$ 1,207,422 | 0% | \$ - | \$ 1,207,422 |
| TOTAL EXPENSES: | | \$ 7,132,209 | | \$ 6,665,016 | \$ 13,797,225 |
| OTHER INCOME (BESIDES WATER SALES) | | | | | |
| Connection Fees | 0% | \$ - | 100% | \$ 334,857 | \$ 334,857 |
| Bond Payments From Impact Fees (Long Valley, Airport Tank & Transmission Line) | 100% | \$ 1,942,712 | 0% | \$ - | \$ 1,942,712 |
| Other Revenue (Hydrant Meters, etc.) | 0% | \$ - | 100% | \$ 629,764 | \$ 629,764 |
| Interest | 30% | \$ 83,700 | 70% | \$ 195,300 | \$ 279,000 |
| Total Other Income: | | \$ 2,026,412 | | \$ 1,159,921 | \$ 3,186,333 |
| Total Expenses - Total Other Income: | | \$ 5,105,796 | | \$ 5,505,096 | \$ 10,610,892 |
| Total Project System Billed ERU's in FY 2024 | | 18,729 | | 18,729 | 18,729 |
| Monthly Cost Per Billed ERU in FY 2024 | | \$ 22.72 | | \$ 24.49 | \$ 47.22 |
| BASE AND OVERAGE RATE DETERMINATION | | | | | |
| WCWCD Surcharge (Included In City Base Rate) | | \$ 1.75 | | | |
| Resident Base Cost (0 Gallons) | | \$ 20.97 | | | |
| Non-Resident Base Cost (0 Gallons) | | \$ 41.94 | | | |
| Resident Variable Cost (Avg Usage) | | | | \$ 24.49 | |
| Non-Resident Variable Cost (Avg Usage) | | | | \$ 48.99 | |
| Average Use/Billed ERU (Gal) | | | | 12,200 | |
| Resident Cost/1000 Gallons | | | | \$ 2.01 | |
| Total Average Monthly Resident Rate/Billed ERU | | | | | \$ 45.46 |
| Total Average Monthly Non-Resident Rate/Billed ERU | | | | | \$ 90.93 |

D. BASE AND OVERAGE RATE DETERMINATION

All expenses and other income are separated into fixed and variable costs to calculate the base and overage rates. This splits the total average rate into an average base rate and an average overage rate. For an average residential user, the base rate was calculated as \$22.72 per month and the average overage rate as \$24.49 per month for a total of \$47.22. The WCWCD surcharge is included in the \$47.22 calculation. This surcharge is charged separately from the user base rate. Therefore, the average base rate would need to be \$20.97 resulting in a total average per month rate of \$45.46. These calculations are based on residents of Washington City. Non-resident base rates are double the resident rates at \$41.94 and the average overage rate at \$48.99. Figure IX-2 shows a summary of the calculated monthly base rate for each meter size.

Figure IX-2: Calculated Base Rate

| Meter Size | Base Rate |
|------------|------------|
| 5/8" | \$20.97 |
| 3/4" | \$20.97 |
| 1" | \$38.00 |
| 1 1/2" | \$84.00 |
| 2" | \$150.00 |
| 3" | \$336.00 |
| 4" | \$597.00 |
| 6" | \$1,342.00 |

The average rate determinations above are higher than what the City is currently collecting from users. This indicates that the City will not be able to cover the required project and ongoing expenses with the current user rate structure. It is recommended that the City establish a new rate structure so that the water system is collecting enough revenue to cover expenses. The figures below (Figures IX-3 to IX-5) show the recommended base rate structure based on this analysis.

While changing the overage rate structure it is recommended that the City creates a structure that promotes conservation. One of the main benefits of a tiered overage rate structure is that it promotes conservation by incentivizing users to use less water and those that choose not to are charged a higher rate. The City's current rate does provide this to an extent. However, as water availability and cost are becoming more of an issue, the City desires to increase its conservation efforts. One way to do this is to create a tier structure that is "more aggressive" and has further separation in costs between the tiers. This plan provides 3 options of what an increased tier rate could look like. These options are provided below.

Figure IX-3: Possible Overage Rate Structure Option 1

| Tier | Threshold Gallons | | Rate/1000 Gallons |
|--|-------------------|----------------|-------------------|
| 1 | 0 | - 12,000 | \$2.01 |
| 2 | 12,001 | - 15,000 | \$2.21 |
| 3 | 15,001 | - 20,000 | \$2.43 |
| 4 | 20,001 | - 25,000 | \$2.67 |
| 5 | 25,001 | - 30,000 | \$2.94 |
| 6 | 30,001 | - 35,000 | \$3.23 |
| 7 | 35,001 | - 40,000 | \$3.55 |
| 8 | 40,001 | - 45,000 | \$3.91 |
| 9 | 45,001 | & Up | \$4.30 |
| Avg Usage Cost Based On | | 12,200 Gallons | \$24.56 |
| | | Base Rate | \$20.97 |
| Total Average Water Bill (Base Rate+Usage+Surcharge) | | | \$47.28 |

Figure IX-4: Possible Overage Rate Structure Option 2

| Tier | Threshold Gallons | | Washington City |
|--|-------------------|----------------|-----------------|
| 1 | 0 | - 12,000 | \$2.01 |
| 2 | 12,001 | - 20,000 | \$2.51 |
| 3 | 20,001 | - 30,000 | \$3.14 |
| 4 | 30,001 | - 40,000 | \$3.93 |
| 5 | 40,001 | & Up | \$4.91 |
| Avg Usage Cost Based On | | 12,200 Gallons | \$24.62 |
| | | Base Rate | \$20.97 |
| Total Average Water Bill (Base Rate+Usage+Surcharge) | | | \$47.34 |

Figure IX-5: Possible Overage Rate Structure Option 3

| Tier | Threshold Gallons | | Washington City |
|--|-------------------|----------------|-----------------|
| 1 | 0 | - 12,000 | \$2.01 |
| 2 | 12,001 | - 20,000 | \$2.21 |
| 3 | 20,001 | - 30,000 | \$2.76 |
| 4 | 30,001 | - 40,000 | \$4.14 |
| 5 | 40,001 | & Up | \$6.21 |
| Avg Usage Cost Based On | | 12,200 Gallons | \$24.56 |
| | | Base Rate | \$20.97 |
| Total Average Water Bill (Base Rate+Usage+Surcharge) | | | \$47.28 |

Another factor to consider with conservation is that a reduction in water use is also a reduction in water sales and therefore a reduction in revenue. Historically the City's overage rate has been set up so that the historical average water use would cover the variable expenses. The historical usage typically would put a user into the third tier of the rate structure. It is possible that if this method continues, when the City hits its conservation goal the variable expenses would not be covered because more users would not fall into the second or third tier. Therefore, it is

recommended that the rate structure be set so that the first tier would cover all variable expenses. The 3 options mentioned above incorporate this idea.

E. CASH FLOW

A 20-year cash flow analysis was prepared for this update. This cash flow shows several years of past revenues and expenses, along with twenty years of projected revenues and expenses for the water system. These projections are based on assumptions of inflation, growth, average rates, proposed, projects, etc. Calculations for average rates and impact fees have been carried over to the cash flow analysis. The cash flow analysis is shown in Appendix E.

Water rates and fees should be reviewed by the City periodically to ensure that they keep up with inflation rates and increased costs in system maintenance. Washington City does not have to adopt the amounts shown in the rate analysis. However, the rates suggested are calculated to cover expenses and ensure that the water fund remains viable.

X. IMPACT FEES

This report constitutes an Impact Fee Facilities Plan to determine the public facilities requirement to serve growth resulting from new development activity. A community may charge an impact fee to provide funding for the projects required by this growth. The total cost that is eligible for the impact fee assessment is equal to the portion of any planned improvements project that will be constructed in the planning window. The combined costs for these projects are divided by the projected number of new ERUs that will be added to the system. Impact fees can also cover debt service that is incurred by projects that provide excess capacity to be used for growth.

A. EXISTING IMPACT FEES

Figure X-1 below shows the existing impact fees charged by Washington City. The existing impact fees are associated with meter size and ERU's per meter size.

Figure X-1: Existing Impact Fees

| Meter Size | ERUs | Impact Fee |
|-------------|-------|--------------|
| 5/8" & 3/4" | 1 | \$2,412.00 |
| 1" | 1.78 | \$4,288.00 |
| 1 1/2" | 4.00 | \$9,648.00 |
| 2" | 7.11 | \$17,152.00 |
| 3" | 16.00 | \$38,592.00 |
| 4" | 28.44 | \$68,608.00 |
| 6" | 64.00 | \$154,368.00 |

B. PROPOSED IMPACT FEES

This plan includes an Impact Fee Analysis to determine the updated fee that the City can assess for its culinary water impact fee. As stated above an impact fee covers the cost for a project falling within the planning window, which for this analysis is 10 years. The impact fee can also cover debt services for past projects that can be attributed to growth.

According to state impact fee laws, impact fees must be used within six years (6) of their receipt. This plan accounts for incoming fees to be used for eligible projects and debts in the continuous six-year window.

The max allowable impact fee is calculated to be \$4,604.24 per ERU. This is \$2,192.24 more than the existing impact fee. Figure X-2 shows the results of the impact fee analysis and Figure X-3 shows the potential impact fee per meter size. This considerable increase is primarily due to increases in construction and material costs over the past 3 years.

Figure X-2: Impact Fee Analysis

| Impact Fee Analysis Washington City | | | | |
|---|---------------------------------|------------------------|--------------------------|---|
| Existing Debt Service | Debt to be Paid FY2024-33 | | Impact Fee % Eligible | Eligible Costs |
| Water Revenue Refunding Bonds 2016B | \$ 5,244,791 | | 34% | \$ 1,783,229 |
| Subtotal | | | | \$ 1,783,229 |
| Proposed Improvement Projects (FY2024-34) | Total Current Estimated Cost | Year of Improvement | Impact Fee % Eligible | Eligible Costs w/ Inflation & Interest |
| Plans/Studies | | | | |
| Culinary Water Master Plan | \$ 60,000 | 2028 | 100% | \$ 67,531 |
| Subtotal | | | | \$ 67,531 |
| Source Projects | | | | |
| | | | | \$ - |
| Subtotal | | | | \$ - |
| Storage Projects (0-10 yr) | | | | |
| Long Valley - 2.5 MG Tank | \$ 7,538,540 | 2024 | 100% | \$ 9,564,609 |
| Airport 1 - 2.5 MG Tank | \$ 6,613,300 | 2025 | 100% | \$ 8,642,421 |
| Sunrise Valley - 2.5 MG Tank | \$ 6,996,700 | 2026 | 100% | \$ 7,422,799 |
| Majestic - 2.5 MG Tank | \$ 7,596,800 | 2032 | 100% | \$ 9,623,399 |
| Subtotal | | | | \$ 35,253,228 |
| Distribution Projects (0-10 yr) | | | | |
| Washington Fields Rd. Transmission Line | \$ 2,929,550 | 2024 | 100% | \$ 2,929,550 |
| Airport Connection Phase 1 | \$ 994,937 | 2025 | 100% | \$ 1,300,159 |
| Fields Road To Airport Tank Transmission Line | \$ 4,410,300 | 2025 | 100% | \$ 5,763,487 |
| Perry's Landing Pressure Zone Adjustment | \$ 389,900 | 2025 | 0% | \$ - |
| Sunrise Valley Transmission Line | \$ 2,186,650 | 2026 | 100% | \$ 2,319,817 |
| Shadow Ridge 6" Line Replacement | \$ 264,000 | 2026 | 0% | \$ - |
| Lion's Head Dr. PRV | \$ 164,350 | 2027 | 0% | \$ - |
| Subtotal | | | | \$ 12,313,014 |
| Total Cost Eligible For Impact Fee | | | | \$ 49,417,001 |
| Projected No. of Existing Culinary ERUs (beginning FY 2024) | | | | 18,729 |
| Anticipated No. of Culinary ERUs (beginning FY 2034) | | | | 29,462 |
| No. of New ERUs Due to Growth | | | | 10,733 |
| Maximum Impact Fee = Total Eligible Cost / New ERU's | | | | \$ 4,604.24 |

Figure X-3: Potential Impact Fees

| Meter Size | ERUs | Impact Fee |
|-------------|-------|--------------|
| 5/8" & 3/4" | 1 | \$4,604.00 |
| 1" | 1.78 | \$8,185.00 |
| 1 1/2" | 4.00 | \$18,416.00 |
| 2" | 7.11 | \$32,741.00 |
| 3" | 16.00 | \$73,667.00 |
| 4" | 28.44 | \$130,965.00 |
| 6" | 64.00 | \$294,671.00 |

Part of the impact fee analysis is to determine what percentage each project of the capital facilities plan is impact fee eligible. The impact fee eligible percentage of the existing debt service

was determined in a previous master plan and should be carried over for the life of the debts. The majority of projects in the capital facilities plan are driven fully by growth, meaning that if growth were to suddenly stop in the City these projects would not be needed. Because these projects are driven fully by growth, they are considered 100% impact fee eligible. The projects not driven by growth are intended to address existing problems and therefore are not considered impact fee eligible.

It is important to note these impact fees are for the improvements shown in the 0 to 10-year planning window and do not provide for the City to design and build anything beyond the proposed projects. All new additions to the system will need to be considered in the impact fee calculations. Otherwise, developers should be required to make the improvements.

C. CONNECTION FEES

Currently the City charges a connection for any new water service that is connected to the system. These existing connection fees are shown below in Figure X-4.

Figure X-4: Existing Connection Fees

| Meter Size | Connection Fee |
|-------------|----------------|
| 5/8" & 3/4" | \$277 |
| 1" | \$352 |
| 1 1/2" | \$629 |
| 2" | \$822 |
| 3" | \$2,060 |
| 4" | \$2,501 |
| 6" | \$4,687 |

According to Utah State law, connection fees are not to be more than the actual cost of establishing the connection including a water meter and labor to connect the meter to the water main line. Figure X-5 shows proposed connection fees based on meter size. This includes the cost of the meter, and associated materials, and 2 hours of labor and equipment expense. These fees should be looked at periodically and adjusted as prices for materials and labor increase.

Figure X-5: Proposed Connection Fees

| Meter Size | Connection Fee |
|-------------|----------------|
| 5/8" & 3/4" | \$380 |
| 1" | \$480 |
| 1 1/2" | \$772 |
| 2" | \$974 |
| 3" | \$1,562 |
| 4" | \$1,987 |
| 6" | \$3,107 |

D. IMPACT FEE RELATED ITEMS

In general, it is beneficial to update this impact fee facilities plan and analysis at least every five years, or more frequently if drastic growth or changes affect the assumptions and data in this plan. It is assumed that this plan will be updated as recommended.

There are a few items relating to impact fees that Washington City must consider when planning for, collecting, and expending impact fees in accordance with Utah Code 11-36a-101.

City staff must understand that impact fees can only be expended for a system improvement that is identified in the Impact Fee Facilities Plan and is for the specific facility type for which the fee was collected. Impact fees must be expended or encumbered for permissible use within six years of their receipt unless 11-6a-602(2)(b) applies. Also, impact fees must have proper accounting (track each fee in and out) in accordance with Utah Code 11-36a-601.

In accordance with Utah Code 11-36a-306 a certification of impact fee analysis is located in Appendix E.

APPENDIX A

Growth Rate Analysis

Population & Growth Rate

| Calendar Year | Population | Est. Growth rate | # of Conn. | # of ERU |
|---------------|------------|------------------|------------|----------|
| 2022 | 40,594 | - | 13,916 | 16,389 |
| 2023 | 43,395 | 6.9% | 14,876 | 17,520 |
| 2024 | 46,389 | 6.9% | 15,903 | 18,729 |
| 2025 | 49,590 | 6.9% | 17,000 | 20,021 |
| 2026 | 52,318 | 5.5% | 17,935 | 21,122 |
| 2027 | 55,195 | 5.5% | 18,921 | 22,284 |
| 2028 | 58,231 | 5.5% | 19,962 | 23,509 |
| 2029 | 60,560 | 4.0% | 20,761 | 24,450 |
| 2030 | 62,982 | 4.0% | 21,591 | 25,428 |
| 2031 | 65,502 | 4.0% | 22,455 | 26,445 |
| 2032 | 68,122 | 4.0% | 23,353 | 27,503 |
| 2033 | 70,506 | 3.5% | 24,170 | 28,465 |
| 2034 | 72,974 | 3.5% | 25,016 | 29,462 |
| 2035 | 75,528 | 3.5% | 25,892 | 30,493 |
| 2036 | 78,171 | 3.5% | 26,798 | 31,560 |
| 2037 | 80,907 | 3.5% | 27,736 | 32,665 |
| 2038 | 83,739 | 3.5% | 28,707 | 33,808 |
| 2039 | 86,670 | 3.5% | 29,711 | 34,991 |
| 2040 | 89,703 | 3.5% | 30,751 | 36,216 |
| 2041 | 92,843 | 3.5% | 31,827 | 37,483 |
| 2042 | 96,092 | 3.5% | 32,941 | 38,795 |



APPENDIX B

Water Use Analysis

| Historical Usage Table | | | |
|------------------------|--------------------------------|----------------|-------------------------|
| Calendar Year | Total Usage (Thousand gallons) | Number of ERUs | Usage Per ERU (gpd/ERU) |
| 2019 | 2,428,666 | 13,817 | 481.6 |
| 2020 | 2,626,927 | 14,553 | 494.6 |
| 2021 | 2,634,571 | 15,879 | 454.6 |
| 2022 | 2,901,830 | 16,389 | 485.1 |
| 4-Year Average: | 2,647,998 | 15,159 | 478.9 |

| Peak Instantaneous Demand Table | | | |
|---------------------------------|-------------------|---------------------------------|---------------------------------|
| Calendar Year | Peak Instant Date | Peak Instantaneous Demand (gal) | Peak Instantaneous Demand (gpm) |
| 2019 | 2-Sep | 1,248,949 | 20,816 |
| 2020 | 13-Jul | 1,571,003 | 26,183 |
| 2021 | 12-Jul | 1,282,092 | 21,368 |
| 2022 | 18-Jul | 1,186,019 | 19,767 |
| AVG | | 1,322,016 | 22,034 |

**This data was provided by the City and uses real-time meter data*

$$Required\ Source\ Capacity = \#ERU \times \frac{gpd}{\#ERU} \times \frac{1\ Day}{24\ hr} \times \frac{1\ hr}{60\ min}$$

$$Required\ Storage\ Capacity = \#ERU \times \frac{gpd}{\#ERU} + Fire\ Flow\ (1,500gpm) \times \frac{60\ min}{1\ hr} \times 2hr$$

| Current & Projected Required Source Capacity | | | | | | | |
|--|----------|------------------------------|--------------------------|--------------------------------|---------------------------------|---------------------------------------|-----------------|
| Calendar Year | # of ERU | % Reduction in Usage Per ERU | Peak Day Usage (gpm/ERU) | Source Capacity Required (gpm) | Existing Source Available (gpm) | Source Capacity Surplus/Deficit (gpm) | Source Capacity |
| 2022 | 16,389 | 0.5% | 901.14 | 10,256 | 17,442 | 7,186 | 7,186 |
| 2023 | 17,520 | 0.5% | 896.64 | 10,909 | 17,442 | 6,533 | 6,533 |
| 2024 | 18,729 | 0.5% | 892.15 | 11,603 | 17,442 | 5,839 | 5,839 |
| 2025 | 20,021 | 0.5% | 887.69 | 12,342 | 17,442 | 5,100 | 5,100 |
| 2026 | 21,122 | 0.5% | 883.25 | 12,956 | 17,442 | 4,486 | 4,486 |
| 2027 | 22,284 | 0.5% | 878.84 | 13,600 | 17,442 | 3,842 | 3,842 |
| 2028 | 23,509 | 0.5% | 874.44 | 14,276 | 17,442 | 3,166 | 3,166 |
| 2029 | 24,450 | 0.5% | 870.07 | 14,773 | 17,442 | 2,669 | 2,669 |
| 2030 | 25,428 | 0.5% | 865.72 | 15,287 | 17,442 | 2,155 | 2,155 |
| 2031 | 26,445 | 0.5% | 861.39 | 15,819 | 17,442 | 1,623 | 1,623 |
| 2032 | 27,503 | 0.5% | 857.09 | 16,370 | 17,442 | 1,072 | 1,072 |
| 2033 | 28,465 | 0.5% | 852.80 | 16,858 | 17,442 | 584 | 584 |
| 2034 | 29,462 | 0.5% | 848.54 | 17,361 | 17,442 | 81 | 81 |
| 2035 | 30,493 | 0.5% | 844.29 | 17,878 | 17,442 | (436) | (436) |
| 2036 | 31,560 | 0.5% | 840.07 | 18,412 | 17,442 | (970) | (970) |
| 2037 | 32,665 | 0.5% | 835.87 | 18,961 | 17,442 | (1,519) | (1,519) |
| 2038 | 33,808 | 0.5% | 831.69 | 19,526 | 17,442 | (2,084) | (2,084) |
| 2039 | 34,991 | 0.5% | 827.53 | 20,109 | 17,442 | (2,667) | (2,667) |
| 2040 | 36,216 | 0.5% | 823.40 | 20,708 | 17,442 | (3,266) | (3,266) |
| 2041 | 37,483 | 0.5% | 819.28 | 21,326 | 17,442 | (3,884) | (3,884) |
| 2042 | 38,795 | 0.5% | 815.18 | 21,962 | 17,442 | (4,520) | (4,520) |

| Storage Capacity Analysis | | | | | | | | | |
|---------------------------|----------|------------------------------|-----------------------------|---------------------------------|---------------------------------|--|----------------------------------|--|--|
| Calendar Year | # of ERU | % Reduction in Usage Per ERU | Average Day Usage (gpd/ERU) | Required Storage Capacity (gal) | Existing Storage Capacity (gal) | Storage Capacity Surplus/Deficit (gal) | Projected Storage Capacity (gal) | Projected Storage Capacity Surplus/Deficit (gal) | |
| 2022 | 16,389 | 0.5% | 478.9 | 8,029,456 | 9,810,000 | 1,780,544 | 9,810,000 | 1,780,544 | |
| 2023 | 17,520 | 0.5% | 476.6 | 8,529,114 | 9,810,000 | 1,280,886 | 12,310,000 | 3,780,886 | |
| 2024 | 18,729 | 0.5% | 474.2 | 9,060,576 | 9,810,000 | 749,424 | 14,810,000 | 5,749,424 | |
| 2025 | 20,021 | 0.5% | 471.8 | 9,625,869 | 9,810,000 | 184,131 | 17,310,000 | 7,684,131 | |
| 2026 | 21,122 | 0.5% | 469.4 | 10,095,565 | 9,810,000 | (285,565) | 17,310,000 | 7,214,435 | |
| 2027 | 22,284 | 0.5% | 467.1 | 10,588,617 | 9,810,000 | (778,617) | 17,310,000 | 6,721,383 | |
| 2028 | 23,509 | 0.5% | 464.8 | 11,106,185 | 9,810,000 | (1,296,185) | 17,310,000 | 6,203,815 | |
| 2029 | 24,450 | 0.5% | 462.4 | 11,486,417 | 9,810,000 | (1,676,417) | 17,310,000 | 5,823,583 | |
| 2030 | 25,428 | 0.5% | 460.1 | 11,879,880 | 9,810,000 | (2,069,880) | 17,310,000 | 5,430,120 | |
| 2031 | 26,445 | 0.5% | 457.8 | 12,287,036 | 9,810,000 | (2,477,036) | 17,310,000 | 5,022,964 | |
| 2032 | 27,503 | 0.5% | 455.5 | 12,708,360 | 9,810,000 | (2,898,360) | 19,810,000 | 7,101,640 | |
| 2033 | 28,465 | 0.5% | 453.3 | 13,082,019 | 9,810,000 | (3,272,019) | 19,810,000 | 6,727,981 | |
| 2034 | 29,462 | 0.5% | 451.0 | 13,466,822 | 9,810,000 | (3,656,822) | 19,810,000 | 6,343,178 | |
| 2035 | 30,493 | 0.5% | 448.7 | 13,863,101 | 9,810,000 | (4,053,101) | 19,810,000 | 5,946,899 | |
| 2036 | 31,560 | 0.5% | 446.5 | 14,271,199 | 9,810,000 | (4,461,199) | 22,310,000 | 8,038,801 | |
| 2037 | 32,665 | 0.5% | 444.3 | 14,691,470 | 9,810,000 | (4,881,470) | 22,310,000 | 7,618,530 | |
| 2038 | 33,808 | 0.5% | 442.0 | 15,124,274 | 9,810,000 | (5,314,274) | 23,310,000 | 8,185,726 | |
| 2039 | 34,991 | 0.5% | 439.8 | 15,569,987 | 9,810,000 | (5,759,987) | 23,310,000 | 7,740,013 | |
| 2040 | 36,216 | 0.5% | 437.6 | 16,028,993 | 9,810,000 | (6,218,993) | 23,310,000 | 7,281,007 | |
| 2041 | 37,483 | 0.5% | 435.4 | 16,501,690 | 9,810,000 | (6,691,690) | 23,310,000 | 6,808,310 | |
| 2042 | 38,795 | 0.5% | 433.3 | 16,988,484 | 9,810,000 | (7,178,484) | 23,310,000 | 6,321,516 | |

APPENDIX C

Engineers Opinion of Probable Cost

Recommended Improvements Project List:

1. Long Valley Tank
2. Airport Tank 1
3. Sunrise Valley Tank
4. Majestic Tank
5. Airport Tank 2
6. Stucki Farms
7. Washington Fields Road Transmission Line
8. Fields Road to Airport Tank Transmission Line
9. Airport Connection Phase 1
10. Perry's Landing Pressure Zone Adjustment
11. Sunrise Valley Transmission Line
12. Shadow Ridge 6" Line Replacement
13. Lion's Head Drive PRV
14. Church Farm Road Transmission Line
15. East Regional Connection Phase 2
16. Airport Connection Phase 2
17. Airport Connection Phase 3



Engineer's Opinion of Probable Cost

LONG VALLEY TANK
WASHINGTON CITY

13-Mar-23
 BCW/tcd

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|--|----------|------|--------------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 282,700.00 | \$ 282,700.00 |
| 2 | Traffic Control | 1 | LS | \$ 2,000.00 | \$ 2,000.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 10,000.00 | \$ 10,000.00 |
| 5 | Subsurface Investigation | 30 | HR | \$ 250.00 | \$ 7,500.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 10,000.00 | \$ 10,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 12,000.00 | \$ 12,000.00 |
| 8 | Earthwork for Tank | 1 | LS | \$ 400,000.00 | \$ 400,000.00 |
| 9 | Access Road (Road Base) | 16,500 | SF | \$ 2.00 | \$ 33,000.00 |
| 10 | 2.5MG Concrete Storage Tank | 1 | LS | \$ 3,500,000.00 | \$ 3,500,000.00 |
| 11 | Tank Site Appurtenances | 1 | LS | \$ 250,000.00 | \$ 250,000.00 |
| 12 | 16" PVC, Fittings, Installation, Bedding, and Backfill | 4,330 | LF | \$ 130.00 | \$ 562,900.00 |
| 13 | 16" Butterfly Valve Assembly | 6 | EA | \$ 8,000.00 | \$ 48,000.00 |
| 14 | 6" Combination Air Valve | 2 | EA | \$ 12,500.00 | \$ 25,000.00 |
| 15 | Bituminous Surface Course | 15,600 | SF | \$ 6.00 | \$ 93,600.00 |
| 16 | Solid Rock Excavation | 490 | CY | \$ 50.00 | \$ 24,500.00 |
| 17 | Misc. Tie-Ins and Connections | 1 | LS | \$ 40,000.00 | \$ 40,000.00 |
| 18 | Wash Crossing | 1 | LS | \$ 40,000.00 | \$ 40,000.00 |
| 19 | Highway Crossing | 1 | LS | \$ 100,000.00 | \$ 100,000.00 |
| 20 | Booster Station Building | 1 | LS | \$ 225,000.00 | \$ 225,000.00 |
| 21 | Booster Pumps | 1 | LS | \$ 100,000.00 | \$ 100,000.00 |
| 22 | Misc Pump Piping/Connections | 1 | LS | \$ 50,000.00 | \$ 50,000.00 |
| 23 | Electrical Improvements | 1 | LS | \$ 120,000.00 | \$ 120,000.00 |
| SUBTOTAL | | | | | \$ 5,937,200.00 |
| | | | | CONTINGENCY | 20% |
| | | | | | \$ 1,187,440.00 |
| CONSTRUCTION TOTAL | | | | | \$ 7,124,640.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 2.2% | LS | \$ 167,500.00 | \$ 167,500.00 |
| 2 | Bidding & Negotiating | 0.1% | HR | \$ 9,700.00 | \$ 9,700.00 |
| 3 | Engineering Construction Services | 1.8% | HR | \$ 138,800.00 | \$ 138,800.00 |
| 4 | Topographic & Property Survey | 0.1% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 5 | Geotechnical Report | 0.2% | EST | \$ 12,900.00 | \$ 12,900.00 |
| 6 | SCADA Design & Improvements | 0.7% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 7 | Miscellaneous Professional Services | 0.3% | EST | \$ 25,000.00 | \$ 25,000.00 |
| SUBTOTAL | | | | | \$ 413,900.00 |
| TOTAL PROJECT COST | | | | | \$ 7,538,540.00 |

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



Engineer's Opinion of Probable Cost

AIRPORT TANK 1
WASHINGTON CITY

13-Mar-23
 BCW/tcd

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|--|----------|------|------------------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 226,200.00 | \$ 226,200.00 |
| 2 | Traffic Control | 1 | LS | \$ 3,000.00 | \$ 3,000.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 3,000.00 | \$ 3,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Subsurface Investigation | 8 | HR | \$ 250.00 | \$ 2,000.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 8 | Earthwork for Tank | 1 | LS | \$ 400,000.00 | \$ 400,000.00 |
| 9 | Tank Access Rd | 55,000 | SF | \$ 3.25 | \$ 178,800.00 |
| 10 | 2.5MG Concrete Storage Tank | 1 | LS | \$ 3,500,000.00 | \$ 3,500,000.00 |
| 11 | Tank Site Appurtenances | 1 | LS | \$ 240,000.00 | \$ 240,000.00 |
| 12 | 24" DIP, Fittings, Installation, Bedding, and Backfill | 200 | LF | \$ 250.00 | \$ 50,000.00 |
| 13 | 24" Butterfly Valve Assembly | 2 | EA | \$ 12,750.00 | \$ 25,500.00 |
| 14 | Fencing and Gate | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 15 | Solid Rock Excavation | 300 | CY | \$ 50.00 | \$ 15,000.00 |
| 16 | Misc. Tie-Ins and Connections | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 17 | Surface Restoration Improvements | 1 | LS | \$ 12,000.00 | \$ 12,000.00 |
| SUBTOTAL | | | | | \$ 4,750,500.00 |
| | | | | CONTINGENCY 20% | \$ 950,100.00 |
| CONSTRUCTION TOTAL | | | | | \$ 5,700,600.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.0% | LS | \$ 331,700.00 | \$ 331,700.00 |
| 2 | Bidding & Negotiating | 0.2% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 3 | Engineering Construction Services | 5.7% | HR | \$ 380,000.00 | \$ 380,000.00 |
| 4 | Topographic & Property Survey | 0.1% | EST | \$ 6,000.00 | \$ 6,000.00 |
| 5 | Geotechnical Report | 0.1% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 6 | SCADA Design & Improvements | 0.8% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 7 | BLM POD & EA | 1.5% | EST | \$ 100,000.00 | \$ 100,000.00 |
| 8 | Miscellaneous Professional Services | 0.4% | EST | \$ 25,000.00 | \$ 25,000.00 |
| SUBTOTAL | | | | | \$ 912,700.00 |
| TOTAL PROJECT COST | | | | | \$ 6,613,300.00 |

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



Engineer's Opinion of Probable Cost

SUNRISE VALLEY TANK
WASHINGTON CITY

13-Mar-23
 BCW/tcd

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|---------------------------------------|----------|------|------------------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 239,700.00 | \$ 239,700.00 |
| 2 | Traffic Control | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Subsurface Investigation | 8 | HR | \$ 250.00 | \$ 2,000.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 10,000.00 | \$ 10,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 8,500.00 | \$ 8,500.00 |
| 8 | Earthwork for Tank | 1 | LS | \$ 400,000.00 | \$ 400,000.00 |
| 9 | Access Road (Road Base) | 20,000 | SF | \$ 2.00 | \$ 40,000.00 |
| 10 | 2.5MG Concrete Storage Tank | 1 | LS | \$ 3,500,000.00 | \$ 3,500,000.00 |
| 11 | Tank Site Appurtenances | 1 | LS | \$ 250,000.00 | \$ 250,000.00 |
| 12 | 16" PVC, Fittings, & Installation | 2,200 | LF | \$ 130.00 | \$ 286,000.00 |
| 13 | 16" Butterfly Valve Assembly | 4 | EA | \$ 8,000.00 | \$ 32,000.00 |
| 14 | Fencing and Gate | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 15 | Solid Rock Excavation | 100 | CY | \$ 50.00 | \$ 5,000.00 |
| 16 | Misc. Tie-Ins and connections | 1 | LS | \$ 50,000.00 | \$ 50,000.00 |
| 17 | Control valves, Flow Meter, and vault | 1 | LS | \$ 150,000.00 | \$ 150,000.00 |
| 18 | Electrical Improvements | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| SUBTOTAL | | | | | \$ 5,034,200.00 |
| | | | | CONTINGENCY 20% | \$ 1,006,800.00 |
| CONSTRUCTION TOTAL | | | | | \$ 6,041,000.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.0% | LS | \$ 350,000.00 | \$ 350,000.00 |
| 2 | Bidding & Negotiating | 0.1% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 3 | Engineering Construction Services | 5.8% | HR | \$ 402,700.00 | \$ 402,700.00 |
| 4 | Topographic & Property Survey | 0.1% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 5 | Geotechnical Report | 0.1% | EST | \$ 8,000.00 | \$ 8,000.00 |
| 6 | SCADA Design & Improvements | 0.7% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 7 | BLM POD & EA | 1.4% | EST | \$ 100,000.00 | \$ 100,000.00 |
| 8 | Miscellaneous Professional Services | 0.4% | EST | \$ 25,000.00 | \$ 25,000.00 |
| SUBTOTAL | | | | | \$ 955,700.00 |
| TOTAL PROJECT COST | | | | | \$ 6,996,700.00 |

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

Engineer's Opinion of Probable Cost

MAJESTIC TANK
WASHINGTON CITY

 13-Mar-23
 BCW/tcd

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|------------------------------------|----------|------|-----------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 264,500.00 | \$ 264,500.00 |
| 2 | Traffic Control | 1 | LS | \$ 3,000.00 | \$ 3,000.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 3,000.00 | \$ 3,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Subsurface Investigation | 40 | HR | \$ 250.00 | \$ 10,000.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 8 | Earthwork for Tank | 1 | LS | \$ 500,000.00 | \$ 500,000.00 |
| 9 | Access Road (Road Base) | 37,000 | SF | \$ 3.25 | \$ 120,250.00 |
| 10 | 2.5MG Concrete Storage Tank | 1 | LS | \$ 3,500,000.00 | \$ 3,500,000.00 |
| 11 | Tank Site Appurtenances | 1 | LS | \$ 250,000.00 | \$ 250,000.00 |
| 12 | 16" PVC, Fittings, & Installation | 2,200 | LF | \$ 130.00 | \$ 286,000.00 |
| 13 | 16" Butterfly Valve Assembly | 6 | EA | \$ 8,000.00 | \$ 48,000.00 |
| 14 | Fencing and Gate | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 15 | Bituminous Surface Course | 1,800 | SF | \$ 7.50 | \$ 13,500.00 |
| 16 | Solid Rock Excavation | 500 | CY | \$ 50.00 | \$ 25,000.00 |
| 17 | Misc. Tie-Ins and Connections | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 18 | Surface Restoration Improvements | 1 | LS | \$ 12,000.00 | \$ 12,000.00 |
| 19 | Booster Station Building | 1 | LS | \$ 225,000.00 | \$ 225,000.00 |
| 20 | Booster Pumps | 1 | LS | \$ 100,000.00 | \$ 100,000.00 |
| 21 | Electrical Improvements | 1 | LS | \$ 100,000.00 | \$ 100,000.00 |
| SUBTOTAL | | | | | \$ 5,555,250.00 |
| CONTINGENCY 20% | | | | | \$ 1,111,050.00 |
| CONSTRUCTION TOTAL | | | | | \$ 6,666,300.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.0% | LS | \$ 383,100.00 | \$ 383,100.00 |
| 2 | Bidding & Negotiating | 0.1% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 3 | Engineering Construction Services | 5.8% | HR | \$ 444,400.00 | \$ 444,400.00 |
| 4 | Topographic & Property Survey | 0.1% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 5 | Geotechnical Report | 0.1% | EST | \$ 8,000.00 | \$ 8,000.00 |
| 21 | SCADA Design & Improvements | 0.7% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 39 | Miscellaneous Engineering Services | 0.3% | EST | \$ 25,000.00 | \$ 25,000.00 |
| SUBTOTAL | | | | | \$ 930,500.00 |
| TOTAL PROJECT COST | | | | | \$ 7,596,800.00 |

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



Engineer's Opinion of Probable Cost

AIRPORT TANK 2
WASHINGTON CITY

13-Mar-23
 BCW/tcd

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|--|----------|------|--------------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 223,100.00 | \$ 223,100.00 |
| 2 | Pre-Construction DVD | 1 | LS | \$ 3,000.00 | \$ 3,000.00 |
| 3 | Dust Control & Watering | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 4 | Subsurface Investigation | 8 | HR | \$ 250.00 | \$ 2,000.00 |
| 5 | Restore Surface Improvements | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 6 | Construction Staking | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 7 | Earthwork for Tank | 1 | LS | \$ 400,000.00 | \$ 400,000.00 |
| 8 | 2.5MG Concrete Storage Tank | 1 | LS | \$ 3,500,000.00 | \$ 3,500,000.00 |
| 9 | Tank Site Appurtenances | 1 | LS | \$ 250,000.00 | \$ 250,000.00 |
| 10 | 24" DIP, Fittings, Installation, Bedding, and Backfill | 200 | LF | \$ 250.00 | \$ 50,000.00 |
| 11 | 24" Butterfly Valve Assembly | 2 | EA | \$ 12,750.00 | \$ 25,500.00 |
| 12 | Fencing and Gate | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 13 | Solid Rock Excavation | 300 | CY | \$ 50.00 | \$ 15,000.00 |
| 14 | Misc. Tie-Ins and Connections | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 15 | Surface Restoration Improvements | 1 | LS | \$ 12,000.00 | \$ 12,000.00 |
| 16 | Misc Pump Piping/Connections | 1 | LS | \$ 9,000.00 | \$ 9,000.00 |
| 17 | Electrical Improvements | 1 | LS | \$ 100,000.00 | \$ 100,000.00 |
| SUBTOTAL | | | | | \$ 4,684,600.00 |
| | | | | CONTINGENCY | 20% |
| CONSTRUCTION TOTAL | | | | | \$ 5,621,500.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.0% | LS | \$ 327,400.00 | \$ 327,400.00 |
| 2 | Bidding & Negotiating | 0.2% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 3 | Engineering Construction Services | 5.7% | HR | \$ 374,800.00 | \$ 374,800.00 |
| 4 | Topographic & Property Survey | 0.1% | EST | \$ 6,000.00 | \$ 6,000.00 |
| 5 | Geotechnical Report | 0.1% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 6 | SCADA Design & Improvements | 0.8% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 7 | BLM POD & EA | 1.5% | EST | \$ 100,000.00 | \$ 100,000.00 |
| 8 | Miscellaneous Professional Services | 0.4% | EST | \$ 25,000.00 | \$ 25,000.00 |
| SUBTOTAL | | | | | \$ 903,200.00 |
| TOTAL PROJECT COST | | | | | \$ 6,524,700.00 |

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

Engineer's Opinion of Probable Cost

STUCKI FARMS TANK
 WASHINGTON CITY

 13-Mar-23
 BCW/tcd

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|------------------------------------|----------|------|--------------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 190,400.00 | \$ 190,400.00 |
| 2 | Traffic Control | 1 | LS | \$ 3,000.00 | \$ 3,000.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 3,000.00 | \$ 3,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Subsurface Investigation | 40 | HR | \$ 250.00 | \$ 10,000.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 8 | Earthwork for Tank | 1 | LS | \$ 400,000.00 | \$ 400,000.00 |
| 9 | Access Road (Road Base) | 14,000 | SF | \$ 2.00 | \$ 28,000.00 |
| 10 | 1MG Concrete Storage Tank | 1 | LS | \$ 1,553,000.00 | \$ 1,553,000.00 |
| 11 | Tank Site Appurtenances | 1 | LS | \$ 250,000.00 | \$ 250,000.00 |
| 12 | 8" PVC, Fittings, & Installation | 3,300 | LF | \$ 130.00 | \$ 429,000.00 |
| 13 | 8" Butterfly Valve Assembly | 4 | EA | \$ 8,000.00 | \$ 32,000.00 |
| 14 | 10" PVC, Fittings, & Installation | 3,200 | LF | \$ 130.00 | \$ 416,000.00 |
| 15 | 10" Butterfly Valve Assembly | 4 | EA | \$ 8,000.00 | \$ 32,000.00 |
| 16 | Fencing and Gate | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 17 | Bituminous Surface Course | 17,600 | SF | \$ 6.00 | \$ 105,600.00 |
| 18 | Solid Rock Excavation | 300 | CY | \$ 50.00 | \$ 15,000.00 |
| 19 | Misc. Tie-Ins and Connections | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 20 | Surface Restoration Improvements | 1 | LS | \$ 12,000.00 | \$ 12,000.00 |
| 21 | Booster Station Building | 1 | LS | \$ 225,000.00 | \$ 225,000.00 |
| 22 | Booster Pumps | 1 | LS | \$ 100,000.00 | \$ 100,000.00 |
| 23 | Electrical Improvements | 1 | LS | \$ 100,000.00 | \$ 100,000.00 |
| SUBTOTAL | | | | | \$ 3,999,000.00 |
| | | | | CONTINGENCY | 20% |
| CONSTRUCTION TOTAL | | | | | \$ 4,798,800.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.1% | LS | \$ 282,600.00 | \$ 282,600.00 |
| 2 | Bidding & Negotiating | 0.2% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 3 | Engineering Construction Services | 5.8% | HR | \$ 319,900.00 | \$ 319,900.00 |
| 4 | Topographic & Property Survey | 0.2% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 5 | Geotechnical Report | 0.1% | EST | \$ 8,000.00 | \$ 8,000.00 |
| 21 | SCADA Design & Improvements | 0.9% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 39 | Miscellaneous Engineering Services | 0.5% | EST | \$ 25,000.00 | \$ 25,000.00 |
| SUBTOTAL | | | | | \$ 705,500.00 |
| TOTAL PROJECT COST | | | | | \$ 5,504,300.00 |

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

Engineer's Opinion of Probable Cost

WASHINGTON FIELDS RD. TRANSMISSION LINE
WASHINGTON CITY

3-Mar-23
BCW

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|--|----------|------|------------------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 105,700.00 | \$ 105,700.00 |
| 2 | Traffic Control | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 5 | Subsurface Investigation | 4 | HR | \$ 250.00 | \$ 1,000.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 2,500.00 | \$ 2,500.00 |
| 7 | Construction Staking | 1 | LS | \$ 2,000.00 | \$ 2,000.00 |
| 8 | 8" PVC Line, Fittings, Tracer wire, Bedding, Backfill & Installation (C900 DR-18) | 150 | LF | \$ 75.00 | \$ 11,250.00 |
| 9 | 12" PVC Line, Fittings, Tracer wire, Bedding, Backfill & Installation (C900 DR-18) | 4,000 | LF | \$ 100.00 | \$ 400,000.00 |
| 10 | 16" PVC Line, Fittings, Tracer wire, Bedding, Backfill & Installation (C900 DR-18) | 11,880 | LF | \$ 120.00 | \$ 1,425,600.00 |
| 11 | 8" Gate Valve Assembly | 4 | EA | \$ 3,200.00 | \$ 12,800.00 |
| 12 | 12" Gate Valve Assembly | 6 | EA | \$ 5,000.00 | \$ 30,000.00 |
| 13 | 16" Butterfly Valve Assembly | 14 | EA | \$ 6,200.00 | \$ 86,800.00 |
| 14 | 3" Air Valve Assembly | 1 | EA | \$ 12,000.00 | \$ 12,000.00 |
| 15 | 4" Air Valve Assembly | 1 | EA | \$ 14,000.00 | \$ 14,000.00 |
| 16 | Fire Hydrant Assembly | 11 | EA | \$ 8,500.00 | \$ 93,500.00 |
| 17 | Misc. Water Connections, Fittings, Caps, Disconnects, Tee's & Tie- | 1 | LS | \$ 11,500.00 | \$ 11,500.00 |
| SUBTOTAL | | | | | \$ 2,219,650.00 |
| | | | | CONTINGENCY 20% | \$ 443,900.00 |
| CONSTRUCTION TOTAL | | | | | \$ 2,663,550.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 4.2% | LS | \$ 123,600.00 | \$ 123,600.00 |
| 2 | Bidding & Negotiating | 0.3% | HR | \$ 7,500.00 | \$ 7,500.00 |
| 3 | Engineering Construction Services | 3.4% | HR | \$ 99,900.00 | \$ 99,900.00 |
| 4 | Topographic & Property Survey | 0.1% | EST | \$ 2,500.00 | \$ 2,500.00 |
| 5 | SCADA Design & Improvements | 1.0% | EST | \$ 30,000.00 | \$ 30,000.00 |
| 6 | Miscellaneous Professional Services | 0.1% | EST | \$ 2,500.00 | \$ 2,500.00 |
| SUBTOTAL | | | | | \$ 266,000.00 |
| TOTAL PROJECT COST | | | | | \$ 2,929,550.00 |

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

Engineer's Opinion of Probable Cost

FIELDS ROAD TO AIRPORT TANK TRANSMISSION LINE
 WASHINGTON CITY

 13-Mar-23
 BCW/tcd

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|--|----------|------|---------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 148,400.00 | \$ 148,400.00 |
| 2 | Traffic Control | 1 | LS | \$ 3,000.00 | \$ 3,000.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 3,000.00 | \$ 3,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Subsurface Investigation | 30 | HR | \$ 250.00 | \$ 7,500.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 8 | 20" DIP, Fittings, Installation, Bedding, and Backfill | 4,100 | LF | \$ 190.00 | \$ 779,000.00 |
| 9 | 30" DIP, Fittings, Installation, Bedding, and Backfill | 5,800 | LF | \$ 300.00 | \$ 1,740,000.00 |
| 10 | 20" Butterfly Valve Assembly | 5 | EA | \$ 11,500.00 | \$ 57,500.00 |
| 11 | 30" Butterfly Valve Assembly | 4 | EA | \$ 15,000.00 | \$ 60,000.00 |
| 12 | Bituminous Surface Course | 11,200 | SF | \$ 7.00 | \$ 78,400.00 |
| 13 | Solid Rock Excavation | 100 | CY | \$ 50.00 | \$ 5,000.00 |
| 14 | Misc. Tie-Ins and Connections | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 15 | Surface Restoration Improvements | 1 | LS | \$ 10,000.00 | \$ 10,000.00 |
| 16 | Highway Crossing | 1 | EA | \$ 150,000.00 | \$ 150,000.00 |
| SUBTOTAL | | | | | \$ 3,116,800.00 |
| CONTINGENCY | | | | | 20% |
| CONSTRUCTION TOTAL | | | | | \$ 3,740,200.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.1% | LS | \$ 223,800.00 | \$ 223,800.00 |
| 2 | Bidding & Negotiating | 0.2% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 3 | Engineering Construction Services | 5.7% | HR | \$ 249,300.00 | \$ 249,300.00 |
| 4 | Topographic & Property Survey | 0.3% | EST | \$ 12,000.00 | \$ 12,000.00 |
| 6 | SCADA Design & Improvements | 1.1% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 7 | BLM POD & EA | 2.3% | EST | \$ 100,000.00 | \$ 100,000.00 |
| 8 | Miscellaneous Professional Services | 0.6% | EST | \$ 25,000.00 | \$ 25,000.00 |
| SUBTOTAL | | | | | \$ 670,100.00 |
| TOTAL PROJECT COST | | | | | \$ 4,410,300.00 |

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

Engineer's Opinion of Probable Cost

AIRPORT CONNECTION PHASE 1
 Washington City

 25-Apr-23
 BCW/

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|--|----------|------|-----------------|----------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 31,650.00 | \$ 31,650.00 |
| 2 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 3 | Traffic Control | 1 | LS | \$ 7,500.00 | \$ 7,500.00 |
| 4 | SWPPP Compliance and Erosion Control | 1 | LS | \$ 10,000.00 | \$ 10,000.00 |
| 5 | Dust Control & Watering | 1 | LS | \$ 10,000.00 | \$ 10,000.00 |
| 6 | Subsurface Investigation | 20 | HR | \$ 250.00 | \$ 5,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 8 | Clearing, Grubbing, Excavation, & Demolition | 1 | LS | \$ 7,500.00 | \$ 7,500.00 |
| 9 | 16" PVC C900 Fittings, Installation, Bedding, and Backfill | 100 | LF | \$ 130.00 | \$ 13,000.00 |
| 10 | 16" Butterfly Valve Assembly | 4 | EA | \$ 8,000.00 | \$ 32,000.00 |
| 11 | Misc. Connections, Fittings, & Tie-Ins | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 12 | Bituminous Surface Course - Pipe Trench | 1,000 | SF | \$ 7.00 | \$ 7,000.00 |
| 13 | Bituminous Surface Course - Building Pad | 10,000 | SF | \$ 6.00 | \$ 60,000.00 |
| 14 | 6" Roadbase | 10,000 | SF | \$ 2.00 | \$ 20,000.00 |
| 15 | Booster Pump Station | 1 | LS | \$ 300,000.00 | \$ 300,000.00 |
| 16 | Booster Pump Station Electrical and Mechanical | 1 | LS | \$ 80,000.00 | \$ 80,000.00 |
| 17 | Booster Pump Station Site | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 18 | Generator and Hookup | 1 | EA | \$ 25,000.00 | \$ 25,000.00 |
| 19 | Fencing and Gate | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| SUBTOTAL | | | | | \$ 664,650.00 |
| | | | | CONTINGENCY 20% | \$ 132,930.00 |
| CONSTRUCTION TOTAL | | | | | \$ 797,580.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.7% | LS | \$ 56,657.00 | \$ 56,657.00 |
| 2 | Bidding & Negotiating | 1.0% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 3 | Engineering Construction Services | 5.3% | HR | \$ 53,200.00 | \$ 53,200.00 |
| 4 | Topographic & Property Survey | 0.8% | EST | \$ 7,500.00 | \$ 7,500.00 |
| 5 | Geotechnical Report | 0.5% | EST | \$ 5,000.00 | \$ 5,000.00 |
| 6 | SCADA Design & Improvements | 5.0% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 7 | Miscellaneous Professional Services | 1.5% | EST | \$ 15,000.00 | \$ 15,000.00 |
| SUBTOTAL | | | | | \$ 197,357.00 |
| TOTAL PROJECT COST | | | | | \$ 994,937.00 |

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



Engineer's Opinion of Probable Cost

PERRY'S LANDING PRESSURE ZONE ADJUSTMENT
 WASHINGTON CITY

3-Mar-23
 BCW

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|---|----------|------|--------------|----------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 11,900.00 | \$ 11,900.00 |
| 2 | Traffic Control | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 5 | Subsurface Investigation | 8 | HR | \$ 250.00 | \$ 2,000.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 7,500.00 | \$ 7,500.00 |
| 7 | Construction Staking | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 8 | 8" PVC, Fittings, Installation, Bedding, and Backfill | 1,000 | LF | \$ 70.00 | \$ 70,000.00 |
| 9 | 8" Gate Valve | 4 | EA | \$ 3,500.00 | \$ 14,000.00 |
| 10 | 6" PRV Station | 2 | EA | \$ 50,000.00 | \$ 100,000.00 |
| 11 | Asphalt Restoration | 4,000 | SF | \$ 7.00 | \$ 28,000.00 |
| SUBTOTAL | | | | | \$ 249,400.00 |
| CONTINGENCY | | | | 20% | \$ 49,900.00 |
| CONSTRUCTION TOTAL | | | | | \$ 299,300.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 6.6% | LS | \$ 25,600.00 | \$ 25,600.00 |
| 2 | Bidding & Negotiating | 1.9% | HR | \$ 7,500.00 | \$ 7,500.00 |
| 3 | Engineering Construction Services | 5.1% | HR | \$ 20,000.00 | \$ 20,000.00 |
| 4 | Topographic & Property Survey | 1.3% | EST | \$ 5,000.00 | \$ 5,000.00 |
| 5 | SCADA Design & Improvements | 7.7% | EST | \$ 30,000.00 | \$ 30,000.00 |
| 6 | Miscellaneous Professional Services | 0.6% | EST | \$ 2,500.00 | \$ 2,500.00 |
| SUBTOTAL | | | | | \$ 90,600.00 |
| TOTAL PROJECT COST | | | | | \$ 389,900.00 |

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

Engineer's Opinion of Probable Cost

SUNRISE VALLEY TRANSMISSION LINE
 WASHINGTON CITY

 13-Mar-23
 BCW/tcd

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|---|----------|------|------------------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 73,200.00 | \$ 73,200.00 |
| 2 | Traffic Control | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 1,500.00 | \$ 1,500.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Subsurface Investigation | 16 | HR | \$ 250.00 | \$ 4,000.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 10,000.00 | \$ 10,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 8 | 12" PVC, Fittings, Installation, Bedding and Backfill | 4,000 | LF | \$ 110.00 | \$ 440,000.00 |
| 9 | 16" PVC, Fittings, & Installation | 3,100 | LF | \$ 130.00 | \$ 403,000.00 |
| 10 | 12" Butterfly Valve Assembly | 4 | EA | \$ 6,750.00 | \$ 27,000.00 |
| 11 | 16" Butterfly Valve Assembly | 6 | EA | \$ 8,000.00 | \$ 48,000.00 |
| 12 | Bituminous Surface Course | 56,000 | SF | \$ 6.00 | \$ 336,000.00 |
| 13 | Solid Rock Excavation | 75 | CY | \$ 50.00 | \$ 3,750.00 |
| 14 | Misc. Tie-Ins and connections | 1 | LS | \$ 50,000.00 | \$ 50,000.00 |
| 15 | Combination Air Valve Assembly | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 16 | PRV Station | 1 | EA | \$ 50,000.00 | \$ 50,000.00 |
| 17 | Electrical Improvements | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| SUBTOTAL | | | | | \$ 1,536,450.00 |
| | | | | CONTINGENCY 20% | \$ 307,300.00 |
| CONSTRUCTION TOTAL | | | | | \$ 1,843,750.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.4% | LS | \$ 117,000.00 | \$ 117,000.00 |
| 2 | Bidding & Negotiating | 0.5% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 3 | Engineering Construction Services | 5.6% | HR | \$ 122,900.00 | \$ 122,900.00 |
| 4 | Topographic & Property Survey | 0.5% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 5 | Geotechnical Report | 0.4% | EST | \$ 8,000.00 | \$ 8,000.00 |
| 6 | SCADA Design & Improvements | 2.3% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 7 | Miscellaneous Professional Services | 1.1% | EST | \$ 25,000.00 | \$ 25,000.00 |
| SUBTOTAL | | | | | \$ 342,900.00 |
| TOTAL PROJECT COST | | | | | \$ 2,186,650.00 |

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Engineer's Opinion of Probable Cost

SHADOW RIDGE 6" LINE REPLACEMENT
 WASHINGTON CITY

3-Mar-23
 BCW

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|---|----------|------|--------------|----------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 8,600.00 | \$ 8,600.00 |
| 2 | Traffic Control | 1 | LS | \$ 7,500.00 | \$ 7,500.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 5 | Subsurface Investigation | 8 | HR | \$ 250.00 | \$ 2,000.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 7,500.00 | \$ 7,500.00 |
| 7 | Construction Staking | 1 | LS | \$ 2,500.00 | \$ 2,500.00 |
| 8 | 8" PVC, Fittings, Installation, Bedding, and Backfill | 1,150 | LF | \$ 70.00 | \$ 80,500.00 |
| 9 | 8" Gate Valve | 5 | EA | \$ 3,500.00 | \$ 17,500.00 |
| 10 | Asphalt Restoration | 6,900 | SF | \$ 7.00 | \$ 48,300.00 |
| SUBTOTAL | | | | | \$ 180,400.00 |
| CONTINGENCY | | | | 20% | \$ 36,100.00 |
| CONSTRUCTION TOTAL | | | | | \$ 216,500.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 7.4% | LS | \$ 19,600.00 | \$ 19,600.00 |
| 2 | Bidding & Negotiating | 2.8% | HR | \$ 7,500.00 | \$ 7,500.00 |
| 3 | Engineering Construction Services | 5.5% | HR | \$ 14,400.00 | \$ 14,400.00 |
| 4 | Topographic & Property Survey | 1.3% | EST | \$ 3,500.00 | \$ 3,500.00 |
| 5 | Miscellaneous Professional Services | 0.9% | EST | \$ 2,500.00 | \$ 2,500.00 |
| SUBTOTAL | | | | | \$ 47,500.00 |
| TOTAL PROJECT COST | | | | | \$ 264,000.00 |

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Engineer's Opinion of Probable Cost

LION'S HEAD DR. PRV
 WASHINGTON CITY

3-Mar-23
 BCW

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|---|----------|------|--------------|----------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 4,100.00 | \$ 4,100.00 |
| 2 | Traffic Control | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 5 | Subsurface Investigation | 8 | HR | \$ 250.00 | \$ 2,000.00 |
| 6 | Restore Surface Improvements | 1 | LS | \$ 2,500.00 | \$ 2,500.00 |
| 7 | Construction Staking | 1 | LS | \$ 2,000.00 | \$ 2,000.00 |
| 8 | 8" PVC, Fittings, Installation, Bedding, and Backfill | 50 | LF | \$ 80.00 | \$ 4,000.00 |
| 9 | 6" PRV Station | 1 | EA | \$ 50,000.00 | \$ 50,000.00 |
| 10 | Asphalt Restoration | 1,500 | SF | \$ 7.50 | \$ 11,250.00 |
| SUBTOTAL | | | | | \$ 86,850.00 |
| CONTINGENCY | | | | | 20% |
| CONSTRUCTION TOTAL | | | | | \$ 104,250.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 6.5% | LS | \$ 10,700.00 | \$ 10,700.00 |
| 2 | Bidding & Negotiating | 4.6% | HR | \$ 7,500.00 | \$ 7,500.00 |
| 3 | Engineering Construction Services | 4.2% | HR | \$ 6,900.00 | \$ 6,900.00 |
| 4 | Topographic & Property Survey | 1.5% | EST | \$ 2,500.00 | \$ 2,500.00 |
| 5 | SCADA Design & Improvements | 18.3% | EST | \$ 30,000.00 | \$ 30,000.00 |
| 6 | Miscellaneous Professional Services | 1.5% | EST | \$ 2,500.00 | \$ 2,500.00 |
| SUBTOTAL | | | | | \$ 60,100.00 |
| TOTAL PROJECT COST | | | | | \$ 164,350.00 |

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Engineer's Opinion of Probable Cost

CHURCH ROAD TRANSMISSION LINE
 WASHINGTON CITY

 13-Mar-23
 BCW/tcd

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|--|----------|------|------------------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 146,200.00 | \$ 146,200.00 |
| 2 | Traffic Control | 1 | LS | \$ 7,500.00 | \$ 7,500.00 |
| 3 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 4 | Dust Control & Watering | 1 | LS | \$ 20,000.00 | \$ 20,000.00 |
| 5 | Subsurface Investigation | 16 | HR | \$ 250.00 | \$ 4,000.00 |
| 6 | 20" DIP, Fittings, Installation, Bedding, and Backfill | 12,400 | LF | \$ 190.00 | \$ 2,356,000.00 |
| 7 | 20" Butterfly Valve Assembly | 15 | EA | \$ 11,500.00 | \$ 172,500.00 |
| 8 | Fire Hydrant Assembly | 10 | EA | \$ 7,000.00 | \$ 70,000.00 |
| 9 | Solid Rock Excavation | 300 | CY | \$ 50.00 | \$ 15,000.00 |
| 10 | Misc. Tie-Ins and Connections | 1 | LS | \$ 30,000.00 | \$ 30,000.00 |
| 11 | Roadway Restoration (Roadbase) | 99,200 | SF | \$ 2.50 | \$ 248,000.00 |
| SUBTOTAL | | | | | \$ 3,070,200.00 |
| | | | | CONTINGENCY 20% | \$ 614,000.00 |
| CONSTRUCTION TOTAL | | | | | \$ 3,684,200.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.1% | LS | \$ 220,600.00 | \$ 220,600.00 |
| 2 | Bidding & Negotiating | 0.2% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 3 | Engineering Construction Services | 5.6% | HR | \$ 245,600.00 | \$ 245,600.00 |
| 4 | Topographic & Property Survey | 0.3% | EST | \$ 12,000.00 | \$ 12,000.00 |
| 5 | Geotechnical Report | 0.3% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 6 | SCADA Design & Improvements | 1.1% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 7 | BLM POD & EA | 2.3% | EST | \$ 100,000.00 | \$ 100,000.00 |
| 8 | Miscellaneous Professional Services | 0.6% | EST | \$ 25,000.00 | \$ 25,000.00 |
| SUBTOTAL | | | | | \$ 673,200.00 |
| TOTAL PROJECT COST | | | | | \$ 4,357,400.00 |

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Engineer's Opinion of Probable Cost

EAST REGIONAL CONNECITON PHASE 2
 Washington City

25-Apr-23
 BCW/

| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|--|----------|------|------------------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 297,490.00 | \$ 297,490.00 |
| 2 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 3 | Traffic Control | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 4 | SWPPP Compliance and Erosion Control | 1 | LS | \$ 12,500.00 | \$ 12,500.00 |
| 5 | Dust Control & Watering | 1 | LS | \$ 12,500.00 | \$ 12,500.00 |
| 6 | Subsurface Investigation | 20 | HR | \$ 250.00 | \$ 5,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 10,000.00 | \$ 10,000.00 |
| 8 | Clearing, Grubbing, Excavation, & Demolition | 1 | LS | \$ 6,000.00 | \$ 6,000.00 |
| 9 | 16" PVC C900 Fittings, Installation, Bedding, and Backfill | 9,700 | LF | \$ 130.00 | \$ 1,261,000.00 |
| 10 | 24" DIP Fittings, Installation, Bedding, and Backfill | 6,100 | LF | \$ 250.00 | \$ 1,525,000.00 |
| 11 | 16" Butterfly Valve Assembly | 10 | EA | \$ 8,000.00 | \$ 80,000.00 |
| 12 | 24" Butterfly Valve Assembly | 8 | EA | \$ 12,750.00 | \$ 102,000.00 |
| 13 | Combination Air Valve | 5 | EA | \$ 20,000.00 | \$ 100,000.00 |
| 14 | Control Valve Vault | 1 | EA | \$ 200,000.00 | \$ 200,000.00 |
| 15 | PRV Station | 1 | EA | \$ 50,000.00 | \$ 50,000.00 |
| 16 | Misc. Connections, Fittings, & Tie-Ins | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 17 | Bituminous Surface Course - Pipe Trench | 126,400 | SF | \$ 7.00 | \$ 884,800.00 |
| 18 | Booster Pump Station | 1 | LS | \$ 1,000,000.00 | \$ 1,000,000.00 |
| 19 | Booster Pump Station Electrical and Mechanical | 1 | LS | \$ 500,000.00 | \$ 500,000.00 |
| 20 | Booster Pump Station Site | 1 | LS | \$ 50,000.00 | \$ 50,000.00 |
| 21 | Generator and Hookup | 1 | EA | \$ 50,000.00 | \$ 50,000.00 |
| 22 | Metering Station | 1 | LS | \$ 50,000.00 | \$ 50,000.00 |
| SUBTOTAL | | | | | \$ 6,247,290.00 |
| | | | | CONTINGENCY 20% | \$ 1,249,458.00 |
| CONSTRUCTION TOTAL | | | | | \$ 7,496,748.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.0% | LS | \$ 426,208.16 | \$ 426,208.16 |
| 1 | Bidding & Negotiating | 0.1% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 2 | Engineering Construction Services | 5.8% | HR | \$ 499,800.00 | \$ 499,800.00 |
| 3 | Topographic & Property Survey | 0.2% | EST | \$ 20,000.00 | \$ 20,000.00 |
| 4 | Geotechnical Report | 0.1% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 20 | SCADA Design & Improvements | 0.9% | EST | \$ 75,000.00 | \$ 75,000.00 |
| 38 | Miscellaneous Professional Services | 0.6% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 39 | | 0.0% | EST | | |
| 40 | | 0.0% | EST | | |
| SUBTOTAL | | | | | \$ 1,091,008.16 |
| TOTAL PROJECT COST | | | | | \$ 8,587,756.16 |

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

| Engineer's Opinion of Probable Cost | | | | | |
|--|--|----------|------|--------------------|------------------------|
| AIRPORT CONNECTION PHASE 2 | | | | | 25-Apr-23 |
| Washington City | | | | | BCW/ |
| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 107,400.00 | \$ 107,400.00 |
| 2 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 3 | Traffic Control | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 4 | SWPPP Compliance and Erosion Control | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Dust Control & Watering | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 6 | Subsurface Investigation | 20 | HR | \$ 250.00 | \$ 5,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 12,500.00 | \$ 12,500.00 |
| 8 | Clearing, Grubbing, Excavation, & Demolition | 1 | LS | \$ 7,500.00 | \$ 7,500.00 |
| 9 | 16" PVC C900 Fittings, Installation, Bedding, and Backfill | 100 | LF | \$ 130.00 | \$ 13,000.00 |
| 10 | 16" Butterfly Valve Assembly | 4 | EA | \$ 8,000.00 | \$ 32,000.00 |
| 11 | Control Valve Vault | 1 | EA | \$ 200,000.00 | \$ 200,000.00 |
| 12 | Misc. Connections, Fittings, & Tie-Ins | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 13 | Bituminous Surface Course - Pipe Trench | 1,000 | SF | \$ 7.00 | \$ 7,000.00 |
| 14 | Bituminous Surface Course - Building Pad | 15,000 | SF | \$ 6.00 | \$ 90,000.00 |
| 15 | 6" Roadbase | 15,000 | SF | \$ 2.00 | \$ 30,000.00 |
| 16 | Booster Pump Station | 1 | LS | \$ 1,000,000.00 | \$ 1,000,000.00 |
| 17 | Booster Pump Station Electrical and Mechanical | 1 | LS | \$ 500,000.00 | \$ 500,000.00 |
| 18 | Booster Pump Station Site | 1 | LS | \$ 50,000.00 | \$ 50,000.00 |
| 19 | Generator and Hookup | 1 | EA | \$ 50,000.00 | \$ 50,000.00 |
| 20 | Fencing and Gate | 1 | LS | \$ 40,000.00 | \$ 40,000.00 |
| 21 | Metering Station | 1 | LS | \$ 50,000.00 | \$ 50,000.00 |
| SUBTOTAL | | | | | \$ 2,255,400.00 |
| | | | | CONTINGENCY | 20% |
| CONSTRUCTION TOTAL | | | | | \$ 2,706,480.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.1% | LS | \$ 165,331.00 | \$ 165,331.00 |
| 1 | Bidding & Negotiating | 0.3% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 2 | Engineering Construction Services | 5.6% | HR | \$ 180,400.00 | \$ 180,400.00 |
| 3 | Topographic & Property Survey | 0.6% | EST | \$ 20,000.00 | \$ 20,000.00 |
| 4 | Geotechnical Report | 0.3% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 20 | SCADA Design & Improvements | 2.3% | EST | \$ 75,000.00 | \$ 75,000.00 |
| 38 | Miscellaneous Professional Services | 1.6% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 39 | | 0.0% | EST | | |
| 40 | | 0.0% | EST | | |
| SUBTOTAL | | | | | \$ 510,731.00 |
| TOTAL PROJECT COST | | | | | \$ 3,217,211.00 |

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Engineer's Opinion of Probable Cost

AIRPORT CONNECTION PHASE 3
 Washington City

 25-Apr-23
 BCW/

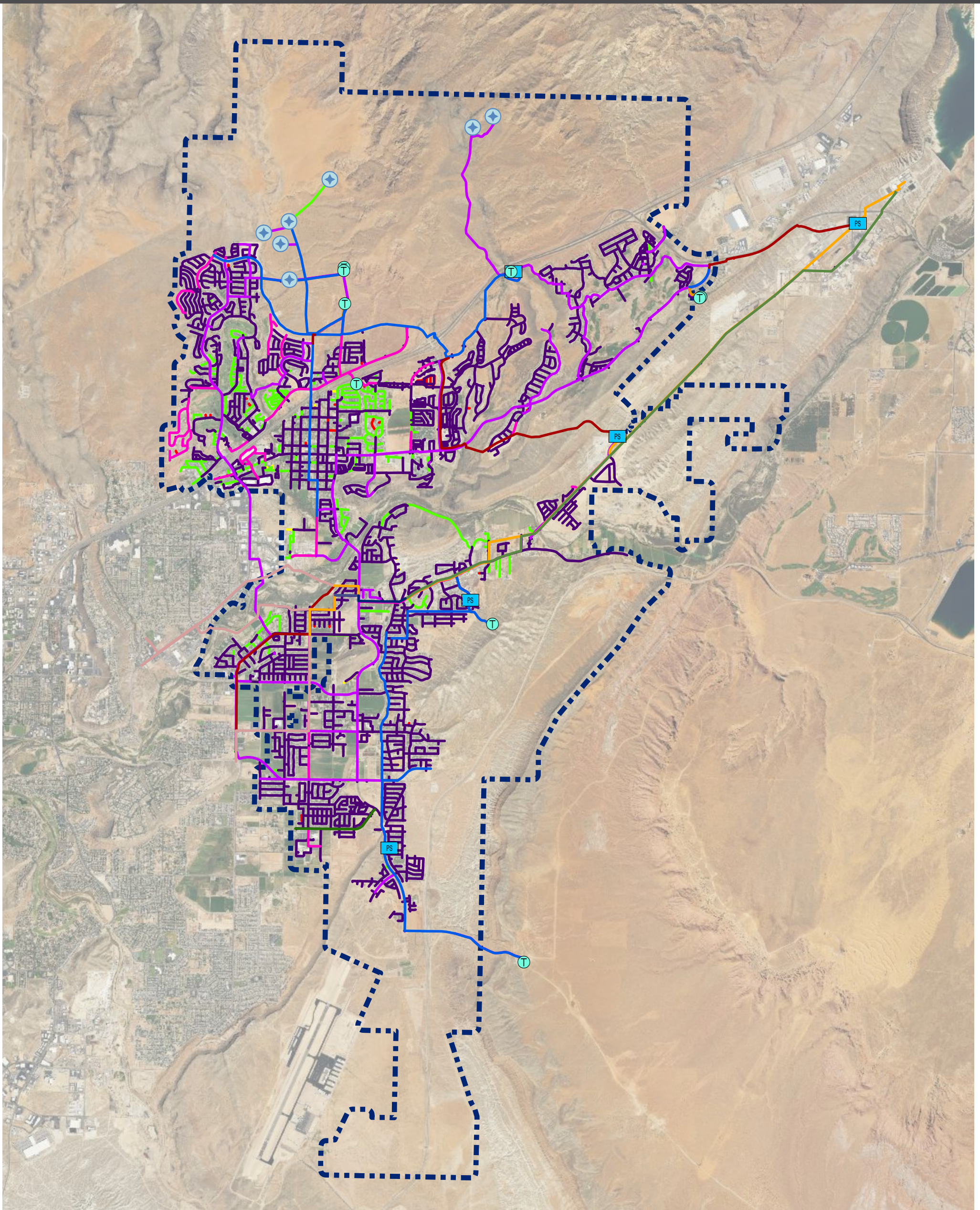
| NO. | DESCRIPTION | EST. QTY | UNIT | UNIT PRICE | AMOUNT |
|-----------------------------|--|----------|------|-----------------|------------------------|
| GENERAL CONSTRUCTION | | | | | |
| 1 | Mobilization | 5% | LS | \$ 128,402.50 | \$ 128,402.50 |
| 2 | Pre-Construction DVD | 1 | LS | \$ 1,000.00 | \$ 1,000.00 |
| 3 | Traffic Control | 1 | LS | \$ 25,000.00 | \$ 25,000.00 |
| 4 | SWPPP Compliance and Erosion Control | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 5 | Dust Control & Watering | 1 | LS | \$ 15,000.00 | \$ 15,000.00 |
| 6 | Subsurface Investigation | 20 | HR | \$ 250.00 | \$ 5,000.00 |
| 7 | Construction Staking | 1 | LS | \$ 12,500.00 | \$ 12,500.00 |
| 8 | Clearing, Grubbing, Excavation, & Demolition | 1 | LS | \$ 7,500.00 | \$ 7,500.00 |
| 9 | 16" PVC C900 Fittings, Installation, Bedding, and Backfill | 50 | LF | \$ 130.00 | \$ 6,500.00 |
| 10 | 20" PVC C900 Fittings, Installation, Bedding, and Backfill | 50 | LF | \$ 131.00 | \$ 6,550.00 |
| 11 | 16" Butterfly Valve Assembly | 2 | EA | \$ 8,000.00 | \$ 16,000.00 |
| 12 | 20" Butterfly Valve Assembly | 2 | EA | \$ 11,500.00 | \$ 23,000.00 |
| 13 | Control Valve Vault | 1 | EA | \$ 200,000.00 | \$ 200,000.00 |
| 14 | Misc. Connections, Fittings, & Tie-Ins | 1 | LS | \$ 5,000.00 | \$ 5,000.00 |
| 15 | Bituminous Surface Course - Building Pad | 15,000 | SF | \$ 6.00 | \$ 90,000.00 |
| 16 | 6" Roadbase | 15,000 | SF | \$ 2.00 | \$ 30,000.00 |
| 17 | Booster Pump Station | 1 | LS | \$ 1,250,000.00 | \$ 1,250,000.00 |
| 18 | Booster Pump Station Electrical and Mechanical | 1 | LS | \$ 600,000.00 | \$ 600,000.00 |
| 19 | Booster Pump Station Site | 1 | LS | \$ 75,000.00 | \$ 75,000.00 |
| 20 | Generator and Hookup | 1 | EA | \$ 75,000.00 | \$ 75,000.00 |
| 21 | Fencing and Gate | 1 | LS | \$ 60,000.00 | \$ 60,000.00 |
| 22 | Metering Station | 1 | LS | \$ 50,000.00 | \$ 50,000.00 |
| SUBTOTAL | | | | | \$ 2,696,452.50 |
| CONTINGENCY | | | | 20% | \$ 539,290.50 |
| CONSTRUCTION TOTAL | | | | | \$ 3,235,743.00 |
| INCIDENTALS | | | | | |
| 1 | Engineering Design | 5.1% | LS | \$ 195,076.00 | \$ 195,076.00 |
| 1 | Bidding & Negotiating | 0.3% | HR | \$ 10,000.00 | \$ 10,000.00 |
| 2 | Engineering Construction Services | 5.7% | HR | \$ 215,700.00 | \$ 215,700.00 |
| 3 | Topographic & Property Survey | 0.5% | EST | \$ 20,000.00 | \$ 20,000.00 |
| 4 | Geotechnical Report | 0.3% | EST | \$ 10,000.00 | \$ 10,000.00 |
| 20 | SCADA Design & Improvements | 2.0% | EST | \$ 75,000.00 | \$ 75,000.00 |
| 38 | Miscellaneous Professional Services | 1.3% | EST | \$ 50,000.00 | \$ 50,000.00 |
| 39 | | 0.0% | EST | | |
| 40 | | 0.0% | EST | | |
| SUBTOTAL | | | | | \$ 575,776.00 |
| TOTAL PROJECT COST | | | | | \$ 3,811,519.00 |

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

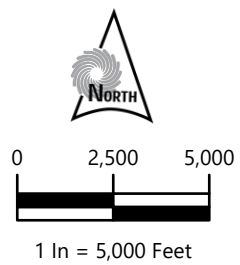
APPENDIX D

System Maps

WASHINGTON CITY EXISTING WATER SYSTEM



MAP LEGEND



Water Mains

- 1"
- 2"
- 3"
- 4"
- 6"
- 8"

- 10"
- 12"
- 14"
- 16"
- 20"
- 24"
- 30"

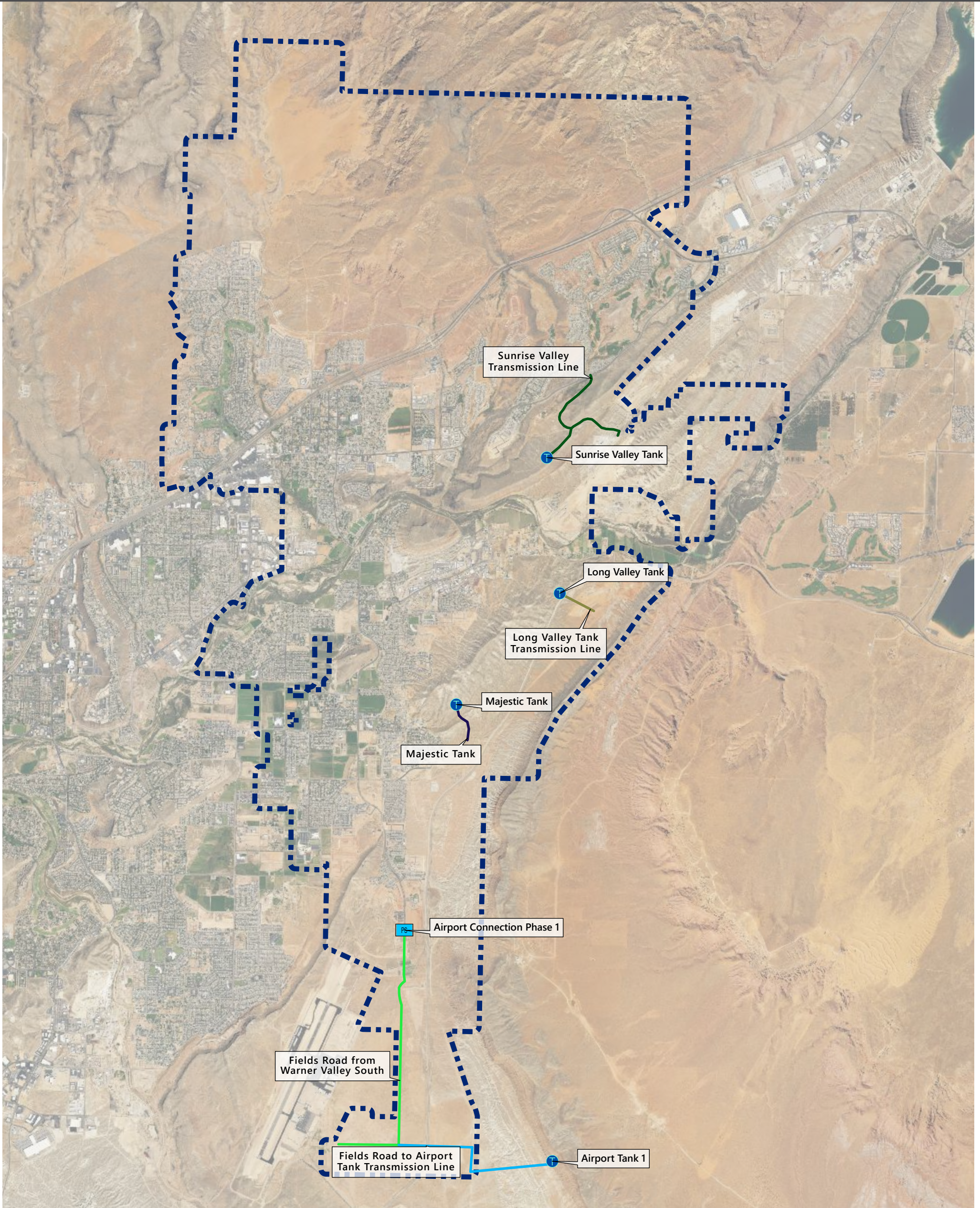
- 36"
- 48"
- 60"
- 72"
- Unknown

- Water Tank
- Production Well
- Water Pumps
- Washington City Boundary

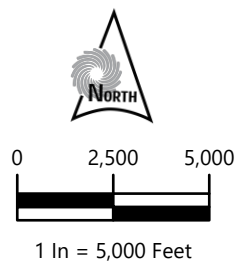
Washington City
Where Dixie Begins









SUNRISE
ENGINEERING

FUTURE WATER SYSTEM IMPROVEMENTS 10 YEAR PLAN



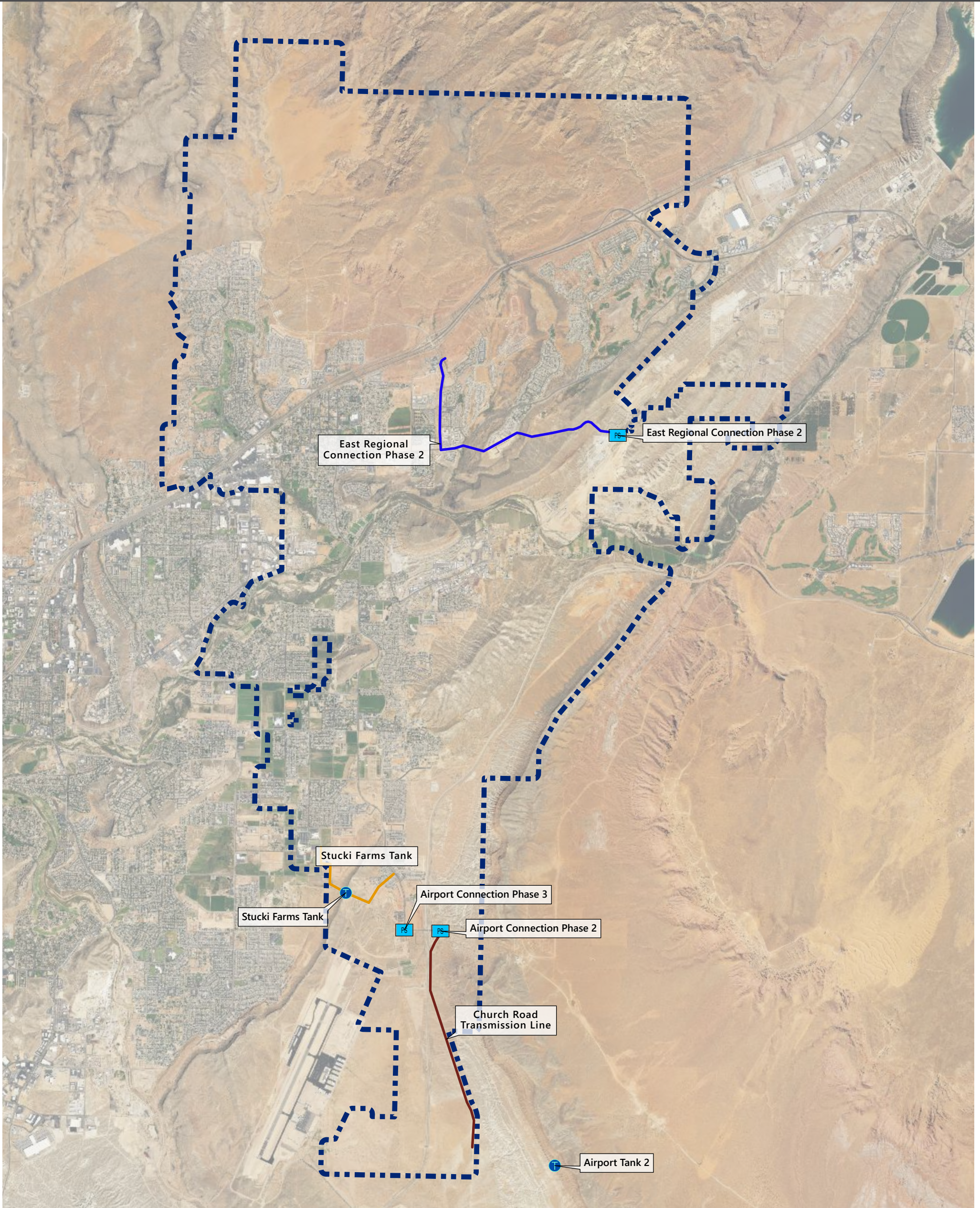
MAP LEGEND



- | | | | |
|---|---|--|--------------------------|
|  | Fields Road from Warner Valley South |  | Future Water Pump |
|  | Fields Road to Airport Tank Transmission Line |  | Future Water Tank |
|  | Long Valley Tank Transmission Line |  | Washington City Boundary |
|  | Majestic Tank | | |
|  | Sunrise Valley Transmission Line | | |



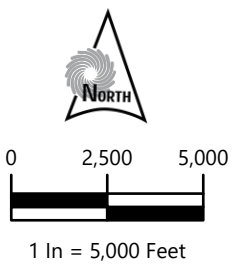
FUTURE WATER SYSTEM IMPROVEMENTS 20 YEAR PLAN



MAP LEGEND

- Church Road Transmission Line
- East Regional Connection Phase 2
- Stucki Farms Tank

- PS Future Water Pump
- T Future Water Tank
- Washington City Boundary



APPENDIX E

Cash Flow

| Cash Flow | | Actual | Actual | Actual | Actual | Actual | Budgeted | Budgeted | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | Projected | | |
|---------------------------------|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|--------------|
| Fiscal Year | | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | | |
| WATER SYSTEM INFORMATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Annual Population Growth Rate | - | - | - | - | 3.0% | 6.9% | 6.9% | 6.9% | 6.9% | 5.5% | 5.5% | 5.5% | 4.0% | 4.0% | 4.0% | 4.0% | 3.5% | 3.5% | 3.5% | 3.5% | 3.5% | 3.5% | 3.5% | 3.5% | 3.5% | 3.5% | 3.5% | | |
| 6 | Annual Interest Rate (Inflation) | - | - | - | - | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | | |
| 7 | Annual User Rate Increase | - | - | - | - | 5.0% | 5.0% | 5.0% | 5.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | | |
| 8 | Average Rate/ERU/Month (Annual Change =) | \$ 35.40 | \$ 34.76 | \$ 39.06 | \$ 41.78 | \$ 41.42 | \$ 38.81 | \$ 47.22 | \$ 49.82 | \$ 52.56 | \$ 54.13 | \$ 55.76 | \$ 57.43 | \$ 59.15 | \$ 60.93 | \$ 62.76 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 | \$ 64.64 |
| 9 | Impact Fee | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 | \$ 2,412 |
| 10 | Connection Fee | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 | \$ 225 |
| 11 | Residential ERU's | 10,286 | 10,919 | 11,827 | 12,674 | 13,442 | 14,369 | 15,361 | 16,421 | 17,554 | 18,761 | 19,158 | 19,538 | 20,613 | 21,437 | 22,295 | 23,186 | 24,114 | 24,958 | 25,831 | 26,735 | 27,671 | 28,640 | 29,642 | 30,679 | 31,753 | 32,865 | 34,005 | 35,205 | 36,469 |
| 12 | Commercial ERU's | 1,351 | 1,484 | 1,296 | 1,890 | 1,386 | 1,481 | 1,584 | 1,693 | 1,810 | 1,909 | 2,014 | 2,125 | 2,241 | 2,368 | 2,506 | 2,654 | 2,814 | 2,988 | 3,166 | 3,353 | 3,550 | 3,757 | 3,974 | 4,201 | 4,438 | 4,685 | 4,943 | 5,212 | 5,492 |
| 13 | Industrial ERU's | 18 | 16 | 18 | 27 | 29 | 31 | 33 | 35 | 37 | 40 | 42 | 44 | 46 | 48 | 50 | 51 | 53 | 55 | 57 | 59 | 61 | 63 | 66 | 68 | 70 | 73 | 75 | 77 | 79 |
| 14 | Institutional ERU's | 1,367 | 1,397 | 1,412 | 1,487 | 1,533 | 1,638 | 1,751 | 1,872 | 2,001 | 2,111 | 2,228 | 2,350 | 2,444 | 2,542 | 2,644 | 2,749 | 2,845 | 2,945 | 3,048 | 3,155 | 3,265 | 3,380 | 3,498 | 3,620 | 3,747 | 3,878 | 4,014 | 4,152 | 4,292 |
| 15 | Total ERU's | 13,022 | 13,817 | 14,553 | 15,879 | 16,389 | 17,520 | 18,729 | 20,021 | 21,402 | 22,580 | 23,821 | 25,132 | 26,137 | 27,182 | 28,270 | 29,400 | 30,429 | 31,494 | 32,597 | 33,738 | 34,918 | 36,141 | 37,406 | 38,715 | 40,070 | 41,472 | 42,924 | 44,424 | 45,972 |
| 16 | New ERU's | - | 795 | 735 | 1326 | 510 | 1131 | 1209 | 1292 | 1381 | 1177 | 1242 | 1310 | 1005 | 1045 | 1087 | 1131 | 1029 | 1065 | 1102 | 1141 | 1181 | 1222 | 1265 | 1309 | 1355 | 1402 | 1452 | 1502 | 1552 |
| WATER FUND ACCOUNTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Water Revenues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | Water Sales | \$ 5,532,490 | \$ 5,764,108 | \$ 6,820,455 | \$ 7,960,492 | \$ 8,146,701 | \$ 8,159,975 | \$ 10,612,430 | \$ 11,582,379 | \$ 13,062,549 | \$ 14,285,459 | \$ 15,523,295 | \$ 16,868,388 | \$ 18,196,238 | \$ 19,491,810 | \$ 20,879,627 | \$ 22,266,256 | \$ 23,203,895 | \$ 24,016,031 | \$ 24,856,592 | \$ 25,726,573 | \$ 26,627,003 | \$ 27,558,948 | \$ 28,523,511 | \$ 29,521,834 | \$ 30,555,098 | \$ 31,624,527 | \$ 32,731,385 | \$ 33,877,385 | |
| 21 | Connection Fees | \$ 170,907 | \$ 165,161 | \$ 204,439 | \$ 271,522 | \$ 225,112 | \$ 224,616 | \$ 334,857 | \$ 357,962 | \$ 382,661 | \$ 326,066 | \$ 344,000 | \$ 362,920 | \$ 378,458 | \$ 399,597 | \$ 418,180 | \$ 438,228 | \$ 458,837 | \$ 479,954 | \$ 501,639 | \$ 523,944 | \$ 546,927 | \$ 570,640 | \$ 595,133 | \$ 620,456 | \$ 646,669 | \$ 673,831 | \$ 701,993 | \$ 731,205 | \$ 761,517 |
| 22 | Bond Payments From Impact Fees (Airport Tank & Long Valley Tank) | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | \$ - | |
| 23 | Other Revenue (Hydrant Meters, etc.) | \$ 298,820 | \$ 393,433 | \$ 492,566 | \$ 636,771 | \$ 288,694 | \$ 659,463 | \$ 629,764 | \$ 570,283 | \$ 618,024 | \$ 611,978 | \$ 633,451 | \$ 641,396 | \$ 656,546 | \$ 668,440 | \$ 682,368 | \$ 695,666 | \$ 709,688 | \$ 723,757 | \$ 738,224 | \$ 752,921 | \$ 767,940 | \$ 783,243 | \$ 798,859 | \$ 814,783 | \$ 831,026 | \$ 847,591 | \$ 864,488 | \$ 881,753 | \$ 900,000 |
| 24 | Interest | \$ 119,895 | \$ 181,285 | \$ 215,695 | \$ 120,587 | \$ 128,878 | \$ 185,050 | \$ 279,000 | \$ 185,318 | \$ 209,001 | \$ 228,567 | \$ 248,373 | \$ 269,894 | \$ 291,140 | \$ 311,869 | \$ 334,074 | \$ 357,860 | \$ 372,262 | \$ 384,256 | \$ 397,045 | \$ 411,625 | \$ 426,032 | \$ 440,943 | \$ 456,376 | \$ 472,349 | \$ 488,882 | \$ 505,992 | \$ 523,702 | \$ 542,000 | \$ 560,885 |
| 25 | TOTAL WATER FUND REVENUE | \$ 6,122,112 | \$ 6,503,987 | \$ 7,733,155 | \$ 8,989,372 | \$ 8,789,385 | \$ 9,229,104 | \$ 11,856,050 | \$ 13,275,476 | \$ 15,803,423 | \$ 16,983,259 | \$ 18,280,306 | \$ 19,673,786 | \$ 20,953,140 | \$ 22,294,904 | \$ 23,728,438 | \$ 25,264,199 | \$ 26,101,072 | \$ 26,950,246 | \$ 27,829,045 | \$ 28,738,332 | \$ 29,679,249 | \$ 30,652,857 | \$ 31,660,318 | \$ 32,702,801 | \$ 33,781,533 | \$ 34,897,775 | \$ 36,052,836 | \$ 37,257,385 | |
| Water Expenses | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | Salaries Regular | \$ 819,858 | \$ 820,407 | \$ 906,551 | \$ 957,730 | \$ 1,077,957 | \$ 1,619,852 | \$ 1,645,302 | \$ 1,808,187 | \$ 1,987,197 | \$ 2,156,109 | \$ 2,339,378 | \$ 2,538,226 | \$ 2,715,901 | \$ 2,906,015 | \$ 3,109,436 | \$ 3,327,096 | \$ 3,543,357 | \$ 3,773,675 | \$ 4,018,964 | \$ 4,280,197 | \$ 4,558,410 | \$ 4,854,707 | \$ 5,170,262 | \$ 5,506,330 | \$ 5,864,341 | \$ 6,245,417 | \$ 6,651,369 | \$ 7,084,200 | \$ 7,544,917 |
| 29 | Employee Benefits | \$ 546,621 | \$ 561,644 | \$ 629,189 | \$ 688,225 | \$ 738,858 | \$ 1,009,242 | \$ 1,022,029 | \$ 1,123,210 | \$ 1,234,408 | \$ 1,339,332 | \$ 1,453,176 | \$ 1,576,695 | \$ 1,687,064 | \$ 1,805,159 | \$ 1,931,520 | \$ 2,066,726 | \$ 2,201,063 | \$ 2,344,132 | \$ 2,496,501 | \$ 2,658,774 | \$ 2,831,594 | \$ 3,015,648 | \$ 3,211,665 | \$ 3,420,423 | \$ 3,642,750 | \$ 3,879,529 | \$ 4,131,698 | \$ 4,408,267 | \$ 4,700,744 |
| 30 | Overtime | \$ 6,530 | \$ 12,105 | \$ 16,286 | \$ 16,157 | \$ 20,339 | \$ 36,266 | \$ 36,266 | \$ 38,605 | \$ 41,095 | \$ 43,458 | \$ 45,957 | \$ 48,600 | \$ 51,300 | \$ 53,581 | \$ 56,260 | \$ 59,073 | \$ 61,879 | \$ 64,818 | \$ 67,897 | \$ 71,122 | \$ 74,501 | \$ 78,039 | \$ 81,746 | \$ 85,629 | \$ 89,697 | \$ 93,957 | \$ 98,420 | \$ 103,089 | \$ 107,972 |
| 31 | Uniforms | \$ 3,359 | \$ 3,557 | \$ 4,068 | \$ 2,984 | \$ 3,355 | \$ 12,950 | \$ 11,290 | \$ 12,018 | \$ 12,793 | \$ 13,529 | \$ 14,207 | \$ 15,130 | \$ 15,886 | \$ 16,680 | \$ 17,514 | \$ 18,390 | \$ 19,264 | \$ 20,179 | \$ 21,137 | \$ 22,141 | \$ 23,193 | \$ 24,294 | \$ 25,448 | \$ 26,657 | \$ 27,924 | \$ 29,250 | \$ 30,639 | \$ 32,084 | \$ 33,597 |
| 32 | Dues And Memberships | \$ 2,231 | \$ 2,375 | \$ 2,405 | \$ 2,410 | \$ 2,227 | \$ 3,350 | \$ 2,950 | \$ 3,140 | \$ 3,343 | \$ 3,549 | \$ 3,738 | \$ 3,953 | \$ 4,151 | \$ 4,358 | \$ 4,576 | \$ 4,805 | \$ 5,033 | \$ 5,273 | \$ 5,523 | \$ 5,785 | \$ 6,060 | \$ 6,348 | \$ 6,650 | \$ 6,965 | \$ 7,294 | \$ 7,634 | \$ 8,006 | \$ 8,399 | \$ 8,806 |
| 33 | Software Subscriptions | \$ 4,000 | \$ 100 | \$ - | \$ 1,057 | \$ 12,335 | \$ 60,242 | \$ 64,810 | \$ 68,990 | \$ 73,440 | \$ 77,663 | \$ 82,129 | \$ 86,851 | \$ 91,193 | \$ 95,753 | \$ 100,541 | \$ 105,568 | \$ 110,582 | \$ 115,835 | \$ 121,337 | \$ 127,101 | \$ 133,138 | \$ 139,462 | \$ 146,086 | \$ 153,026 | \$ 160,294 | \$ 167,908 | \$ 175,884 | \$ 184,142 | \$ 192,699 |
| 34 | Training & Travel | \$ 1,030 | \$ 9,219 | \$ 7,149 | \$ 5,299 | \$ 12,590 | \$ 8,352 | \$ 16,315 | \$ 17,367 | \$ 18,488 | \$ 19,551 | \$ 20,675 | \$ 21,863 | \$ 22,957 | \$ 24,105 | \$ 25,310 | \$ 26,575 | \$ 27,838 | \$ 29,160 | \$ 30,545 | \$ 31,996 | \$ 33,516 | \$ 35,108 | \$ 36,775 | \$ 38,522 | \$ 40,352 | \$ 42,269 | \$ 44,276 | \$ 46,276 | \$ 48,271 |
| 35 | Office Equipment-Supplies & Maint. | \$ 3,218 | \$ 93,216 | \$ 1,858 | \$ 1,050 | \$ 3,803 | \$ 2,850 | \$ 3,650 | \$ 3,885 | \$ 4,136 | \$ 4,374 | \$ 4,625 | \$ 4,891 | \$ 5,136 | \$ 5,393 | \$ 5,662 | \$ 5,945 | \$ 6,228 | \$ 6,524 | \$ 6,834 | \$ 7,158 | \$ 7,498 | \$ 7,854 | \$ 8,227 | \$ 8,618 | \$ 9,028 | \$ 9,456 | \$ 9,906 | \$ 10,374 | \$ 10,864 |
| 36 | Supplies & Materials | \$ 30,008 | \$ 15,555 | \$ 150,232 | \$ 142,720 | \$ 162,506 | \$ 254,700 | \$ 304,700 | \$ 324,353 | \$ 345,274 | \$ 365,127 | \$ 386,122 | \$ 408,324 | \$ 428,740 | \$ 450,177 | \$ 472,686 | \$ 496,320 | \$ 519,896 | \$ 544,591 | \$ 570,459 | \$ 597,555 | \$ 625,939 | \$ 655,671 | \$ 686,816 | \$ 719,440 | \$ 753,613 | \$ 789,410 | \$ 826,907 | \$ 866,144 | \$ 906,244 |
| 37 | Fuel | \$ 27,693 | \$ 38,389 | \$ 38,550 | \$ 24,313 | \$ 41,897 | \$ 46,020 | \$ 51,000 | \$ 54,290 | \$ 57,791 | \$ 61,114 | \$ 64,628 | \$ 68,344 | \$ 71,762 | \$ 75,350 | \$ 79,117 | \$ 83,073 | \$ 87,019 | \$ 91,152 | \$ 95,482 | \$ 100,017 | \$ 104,768 | \$ 109,745 | \$ 114,958 | \$ 120,418 | \$ 126,138 | \$ 132,130 | \$ 138,406 | \$ 144,969 | \$ 151,829 |
| 38 | Flleet Charges | \$ 7,019 | \$ 32,798 | \$ 44,375 | \$ 22,850 | \$ 23,321 | \$ 19,000 | \$ 26,900 | \$ 28,635 | \$ 30,482 | \$ 32,235 | \$ 34,088 | \$ 36,048 | \$ 37,851 | \$ 39,743 | \$ 41,730 | \$ 43,817 | \$ 45,898 | \$ 48,078 | \$ 50,362 | \$ 52,754 | \$ 55,260 | \$ 57,885 | \$ 60,635 | \$ 63,515 | \$ 66,532 | \$ 69,692 | \$ 73,002 | \$ 76,464 | \$ 80,084 |
| 39 | Small Tools & Minor Equipment | \$ 13,335 | \$ 10,779 | \$ 7,112 | \$ 5,894 | \$ 5,413 | \$ 54,100 | \$ 14,500 | \$ 15,435 | \$ 16,431 | \$ 17,376 | \$ 18,375 | \$ 19,431 | \$ 20,403 | \$ 21,423 | \$ 22,494 | \$ 23,619 | \$ 24,741 | \$ 25,916 | \$ 27,147 | \$ 28,436 | \$ 29,787 | \$ 31,202 | \$ 32,684 | \$ 34,237 | \$ 35,863 | \$ 37,566 | \$ 39,351 | \$ 41,214 | \$ 43,156 |
| 40 | Building & Grounds | \$ 452,100 | \$ 460,685 | \$ 12,712 | \$ 10,910 | \$ 8,252 | \$ 20,090 | \$ 16,990 | \$ 18,086 | \$ 19,252 | \$ 20,359 | \$ 21,530 | \$ 22,768 | \$ 23,906 | \$ 25,102 | \$ 26,357 | \$ 27,675 | \$ 28,989 | \$ 30,366 | \$ 31,809 | \$ 33,320 | \$ 34,902 | | | | | | | | |



APPENDIX F

Impact Fee Certification

CERTIFICATION OF IMPACT FEE ANALYSIS BY CONSULTANT

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

I certify that the attached Impact Fee Facilities Plan and Impact Fee Analysis:

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

2. Does not include:
 - a. 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; or

 - c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and that methodological standards set forth by the Federal Office of Management and Budget for federal grant reimbursement;

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

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

Blaine Worrell, P.E., makes this certification with the following qualifications:

1. All of the recommendations for implementation of the Impact Fee Facilities Plan (“IFFP”) made in the IFFP documents or in the Impact Fee Analysis documents are followed in their entirety by the Washington City, Utah, staff, and elected officials.

2. If all or a portion of the IFFP or Impact Fee Analyses are modified or amended, this certification is no longer valid.

3. All information provided to Sunrise Engineering, Inc., its contractors or suppliers, is assumed to be correct, complete and accurate. This includes information provided by Washington City, Utah, and outside sources.

4. The undersigned is trained and licensed as a professional engineer and has not been trained or licensed as a lawyer. Nothing in the foregoing certification shall be deemed an opinion of law or an opinion of compliance with law which under applicable professional licensing laws or regulations or other laws or regulations must be rendered by a lawyer licensed in the State of Utah.
5. The foregoing Certification is an expression of professional opinion based on the undersigned's best knowledge, information and belief and shall not be construed as a warranty or guaranty of any fact or circumstance.
6. The foregoing certification is made only to Washington City, Utah, and may not be used or relied upon by any other person or entity without the expressed written authorization of the undersigned.

Sunrise Engineering, Inc.

By:  _____

Dated: 01/03/2024 _____