PROVIDENCE CITY
WASTEWATER MASTER PLAN

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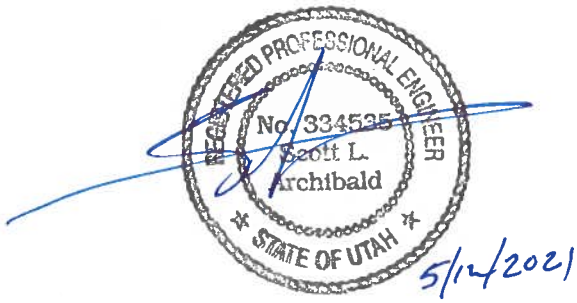

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EXECUTIVE SUMMARY

Sunrise Engineering, Inc. has completed a Wastewater Collection System Master Plan for Providence City in Cache County, Utah. A typical 20-year planning period was used in the development of this master plan. Improvements were recommended to provide a well maintained and correctly functioning wastewater collection system for existing and future conditions. Improvements were also recommended for Providence's west side area and future annexation area to accommodate projected growth. All future improvement sizing was based on the estimated 2040 and 2070 populations of the current zoning and city boundary with proposed annexation areas. This Master Plan has also been developed with considerations from the City Council and City Staff.

The existing wastewater collection system services connections in Providence City with gravity lines consisting of 8-inch through 18-inch reinforced concrete pipe and PVC pipe. Additional flow metering was completed at three locations within the collection system. Flow data from Providence City's two main meters were also collected. The metering data was subsequently used to develop a daily unit flow hydrograph, also known as a diurnal curve, and to calibrate the computer models.

Historic Census data, Providence City's General Plan, and input from the City were used to estimate the planning growth rate for Providence in connection with the existing Providence City General Plan. Existing and future land use data was also used to estimate the number of equivalent residential units (ERUs), equivalent population, and wastewater flow rates.

Innovyze® Infosewer Software was used to model the existing wastewater collection system to the lift station at 1000 West. The 2020 model identified multiple capacity and velocity deficiencies. The 2040 model identified that the current capacity deficiency will expand with the additional flow from growth, and the velocity deficiencies will decline as higher flows leads to higher velocities. A map showing the 2020 critical infrastructure is shown in **Exhibit 4.1.**

The main collection system deficiency discovered in the study was the undersized outfall line to Logan City. Recommendations have been made to implement capital improvements to address this deficiency. Apart from the outfall line, only one other line in the system is undersized in meeting flows in the 20-year planning period.

The City asked Sunrise to take a high-level look at the wastewater treatment options as well. As a new treatment option would address the pipe capacity concern in the outfall line, the treatment alternatives were considered alongside the collection system alternatives. Four alternatives that would address the collection deficiencies and treatment system options and a "do nothing" scenario were evaluated. The scenarios were:

1) Do Nothing
2A) Logan Treatment – 100% Providence Outfall Line
2B) Logan Treatment – Shared Outfall Line
3) Hyrum Treatment
4) Providence Treatment

Sunrise recommends that Alternative 2B, installation of a new shared 21" outfall line to the Logan lift station and continuing with the Logan treatment plant, be selected and implemented. This alternative resulted in the lowest user rate and impact fee of any alternative considered. This alternative is also the easiest to implement as the agreement is already in place with Logan City, and the improvements should not result in an increased treatment and collection fee from Logan City.

The cost of Providence expanding and joining the Hyrum wastewater treatment plant or constructing their own treatment plant within the City is too high to be considered feasible without joining with surrounding Cities such as Millville and Nibley. This is based on reviewing both capital costs and operation and maintenance costs. A wastewater treatment master plan is necessary to examine these alternative in depth.

Deficiencies were also identified in the western sector of the City including the future annexation area. Due to the topography of this western area, gravity flow to the city's wastewater backbone will not be viable. Sunrise recommends the construction of a west side lift station, force main, and gravity line to service this western area. **Exhibit 5.2** shows an illustration of this concept.

Sunrise has identified specific capital improvement projects based on the evaluated alternatives. These projects have been grouped by treatment alternative with the exception of the line replacement for P_11T-09_11T-07. Sunrise recommends that the City construct the preferred alternative, Logan Treatment Option B, but all four of the project options have been included for reference. Collectively, there are 4 capital improvement projects in Logan Treatment Option B recommended by Sunrise for implementation over the next 20-year planning period. Preliminary cost estimates for each project were developed to assist in Providence's cash flow, user rate, and impact fee analysis. Total estimated costs for each project group are as follows:

- Logan Treatment Option A - $5,484,000
- Logan Treatment Option B - Preferred Alternative - $4,867,000 (Providence's portion)
- Hyrum Treatment Option - $30,689,000
- Providence Treatment Option - $24,365,000
- Line Replacement (P_11T-09_11T-07) - $103,000

Cost breakdowns for each of these project cost estimates can be found in **Appendix C.** The recommended improvements may be paid for in part with the proposed impact fee, as described in **Section 6.1**, that will be collected between now and the end of the 20-year planning period. The remaining portion of the recommended projects may be funded through reserve funds that will be collected for this purpose through the proposed user rate and grants and loans from the various funding agencies.

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1.0 INTRODUCTION

1.1 Background

Providence City is located in Cache County, Utah. The City has been growing at a moderate rate since the sewer collection system was installed in 1989. Sunrise Engineering, Inc. (Sunrise) has been retained by Providence City to update the wastewater model and master plan to establish the current level of service in the city. These updates will help establish a baseline for future development and identify possible deficiencies during the 20-year planning period. This updated plan has been prepared in accordance with the agreement signed between Providence City and Sunrise Engineering.

1.2 Study Area

The study area for this master plan includes the Providence City wastewater collection system service area, including anticipated future annexation areas. The study area is shown in **Exhibit 1.1** "*Area Map*."

1.3 Objective

The primary objective of this master plan is to provide the City with the information needed to make informed decisions on wastewater collection system improvements over the 20-year planning period. Improvements to correct collection system deficiencies will be master-planned and prioritized. Estimates of probable cost will be produced for the proposed improvements.

The accuracy of this report is, by nature, limited by the accuracy of the included assumptions and projections. The City should review and update this master plan every five to ten years to verify how the City is growing with relationship to the assumptions included in this report.

1.4 Scope

The scope of the Providence City Wastewater Collection System Master Plan includes the following:

- Gather and analyze existing system parameters including flow, collection system size, zoning, land use, and annexation data,
- Survey 200 manholes and measure their inverts,
- Monitor flows at identified locations to identify flow characteristics,
- Build and calibrate a collection system model for existing conditions,
- Apply future flow projections to the calibrated model,
- Identify and prioritize existing and future system deficiencies,
- Develop opinions of probable cost for proposed improvements, and
- Prepare a master plan report.

1.5 Related Studies

Other studies related to wastewater collection and treatment for Providence City include the following:

- Providence City General Plan, April 2020,
- Logan City Sewer Collection Master Plan Update, JUB Engineers, July 2018, and
- Millville City Utility Project Sewer Collection System Engineering Report, Franson Civil Engineers, April 2021.

2.0 EXISTING WASTEWATER COLLECTION SYSTEM

2.1 Existing Wastewater System and Service Area

Providence City currently operates a gravity wastewater collection system. The main portion of Providence City's wastewater flows to the intersection of UT-165 and 100 N and then travels west in a shared trunk line with Logan City. The area on the northwest corner of the city that is north of Spring Creek and near Golf Course Drive and the old mini golf course is separate from the rest of the city. This area will be referred to as the "Golf Course Drive area" throughout this report. The line from the Golf Course Drive area travels from the northwest corner of the City through the neighboring commercial area in Logan City and connects to the main outfall line near the intersection of Legrand Street and 1200 S. The outfall line travels under UT-165, Logan River Golf Course, the Logan River, and the railroad to a regional lift station located at 1180 S 1000 W in Logan. Flows are then pumped to the Logan City treatment facility.

The collection system was first installed in 1989 with pipe sizes ranging from 8 inches to 15 inches within the City collection system and the shared trunk line ranging in size from 12 to 18 inches. The majority of the pipes in the city are 8-inch diameter. The original system was constructed of reinforced concrete pipe. The system has since been extended as the City has grown; however, the original system has experienced very few changes. It has just been expanded with growth.

The service area analyzed in this report encompasses the area within the current municipal boundary of Providence City, the future annexation boundary, and the trunk line to the lift station on 1000 West. A map of the existing wastewater collection system is shown in **Exhibit 2.1** "*2020 Existing Wastewater Collection System*."

2.2 Flow Metering

Providence City has permanent flow metering at two locations in the City, on Golf Course Road at the city boundary with Logan City and on 1200 S at the city boundary with Logan City. A temporary flow meter was installed at three locations in Providence City to provide a basis for flow characterization and model calibration. The locations chosen for flow monitoring were manhole IW-16 on 100 N near UT-165, manhole S11-01 on 100 S near UT-165, and manhole E19-01 on 300 S near UT-165. All flow monitoring was performed with a "Teledyne Isco" 2150 Area Velocity Flow Module. The meter consists of a flexible ring that fits into the pipe with a continuous wave Doppler flow meter that sends information via a cable to the module.

2.2.1 Methodology

Analyzing and developing a methodology for quantifying wastewater flow characteristics is critical in developing a wastewater collection system master plan. The flow characteristics of the study area were evaluated to create a daily flow unit hydrograph representative of the entire system inflow. Sunrise has assumed that the analyzed metered data includes the following constituents and variations:

- Daily flow variations,
- Infiltration,
- Inflow, and
- Unit flow.

For the purposes of this study, provisions within the modeling criteria will adjust for the following flow variations:

- Seasonal flow variations,
- Annual flow variations, and
- Long term flow variations.

2.2.2 Daily Flow Unit Hydrograph

Daily flow patterns are controlled by a variety of factors. Flow patterns for a collection system can differ greatly according to travel time, residential and non-residential components of flow, and locality. In general, the daily flow patterns found in residential areas will show steep peaks during morning and evening personal hygiene periods, average values during working hours, and a low base line during sleeping hours. Additionally, non-residential flow patterns are generalized to have higher base flows during sleeping hours with flatter peaks and valleys during the day. **Figure 2.1** "Daily Flow Unit Hydrograph" shows the city-wide average unit hydrograph developed from data collected from the monitoring locations. The values from the developed unit hydrograph have been incorporated into the model to assist with peaking factors. Peak flows happen at 10:00 am and are 1.24 times the average flow rate.

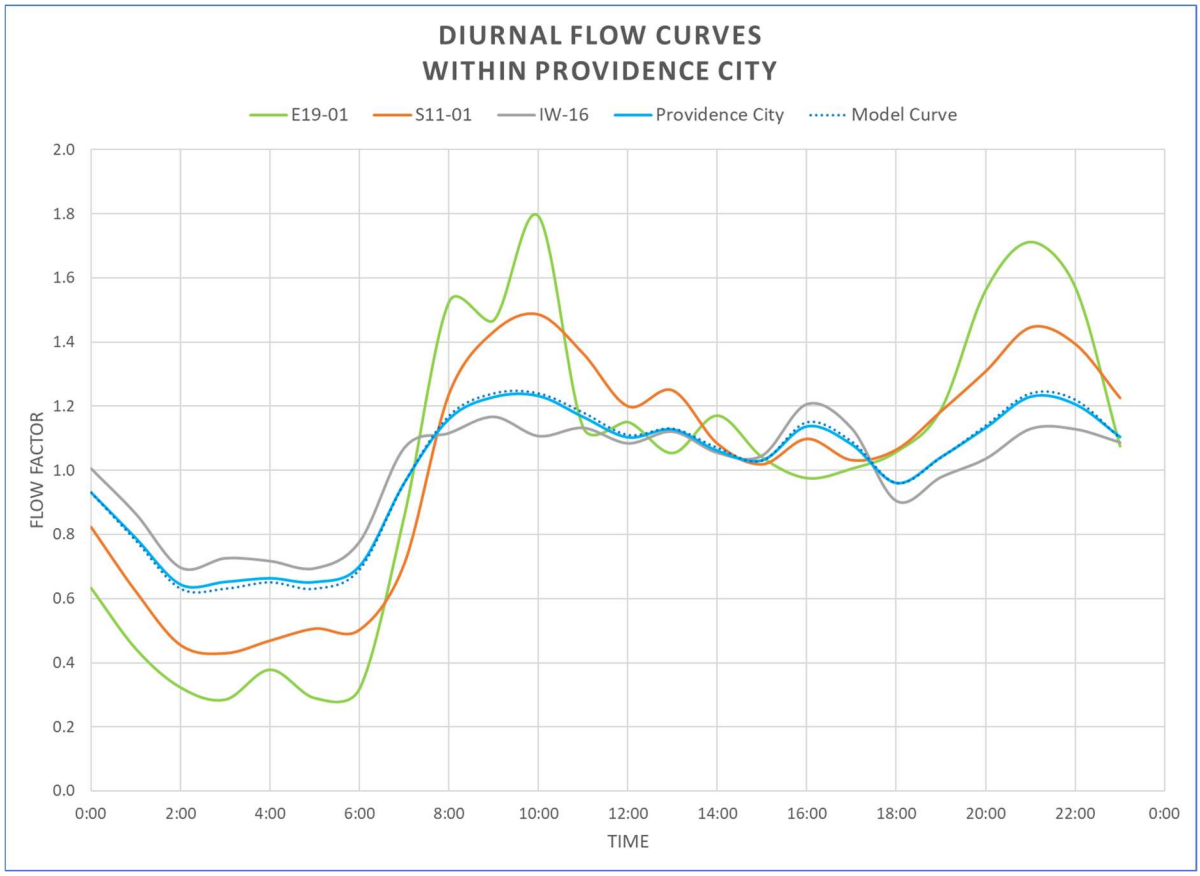

Figure 2.1 Daily Flow Unit Hydrograph

2.2.3 Inflow from Non-Study Areas

Inflow from Logan City enters the shared outfall line in multiple locations. Logan's commercial area directly west of the Golf Course Drive area in Providence shares the same line with the Golf Course Drive area that connects to the outfall line near the intersection of 1200 S and Legrand St in Logan. The residential area between 720 S, 1000 S, 1000 W, and Park Ave in Logan connects to the west side of the outfall line. Logan City's Country Manor Lift Station located to the south of the outfall line does not connect to this outfall line. This lift station crosses the outfall line and connects to the gravity lines to the north. Logan City and Providence City are communities that share similar characteristics. The unit hydrograph developed for Providence City will also be used for Logan City flows.

3.0 SYSTEM USER ANALYSIS

3.1 Length of Planning Period

In development of this wastewater collection system master plan, Sunrise Engineering used a 20-year planning period, beginning in the year 2020 and running through the year 2040. It is recommended that throughout the 20-year plan implementation period, Providence City and its engineering consultant further evaluate the system for potential infrastructure improvements or other needs.

3.2 Projected Growth

The projection of a city's population is an integral part of a master plan study. With an appropriately determined growth rate, it is possible to estimate the future population and subsequent wastewater flow rates that need to be accommodated by the city's wastewater collection system.

Historic census data and the Providence City General Plan were initially used to determine a proper growth rate for Providence City. From 2000 to 2010, the city experienced a 4.9% growth rate. From 2010 to 2019, the city experienced a 0.64% growth rate. In the General Plan adopted in 2020, a growth rate of 1.0058% was utilized in connection with the Utah Governor's Office of Management and Budget. After comparing these growth rates to the current trend in building permits of an average growth rate of 1.65% over the last three years, it was recommended that a higher growth rate be used for this study. After coordination with the City's planning and zoning commission and other city personnel, a 2.48% growth rate was utilized to project the population over the 20-year planning period for Providence City Wastewater Master Plan. Using historic data and the selected growth rate, it was estimated that Providence City has an average household size of 2.92 people.

It should be understood that if the number of projected system connections associated with the projected population is reached earlier or later than projected, future improvements to support growth will need to be adjusted accordingly. According to an QuickFacts from the U.S. Census Bureau, the population of Providence City in 2019 was 7,780. While the official U.S. Census results from the 2020 Census were not available for this study, population projections based on previous census data indicate that Providence's population should be approximately 7,980 in 2020. The total number of building permits issued over the last 3 years is shown in **Table 3.1**.

Table 3.1 2018-2020 Building Permits Issued

Year	*Commercial*	*Single Family*	*Townhouse*
2018	2	45	4
2019	2	47	11
2020	12	79	10
Total	**16**	**171**	**25**

3.3 Land Use

Using the 2020 Land use map provided by Providence City, future wastewater projections were conducted based on land use zones with input from the City's planning and zoning commission and other city personnel. Future annexation areas have been identified by the City and were

included in the planning of future wastewater flows. A map of the existing and future land use is shown in **Exhibit 3.1** *"Providence City Future Land Use/ Zoning Map."*

3.4 Equivalent Residential Units & Equivalent Population

An Equivalent Residential Unit (ERU) is defined as the average monthly wastewater output by a residential unit or single-family dwelling. This unit is commonly used as an index to compare the wastewater output of non-residential connections to that of residential connections. Providence City's Municipal Code 9-1A-8(A)2 defines an ERU as the "unit of demand that has an impact on the wastewater treatment infrastructure of Logan City that is equivalent to a single-family residence with a flow of 245 gallons per day."

Equivalent population is a metric that is determined by multiplying total ERUs by average household size to calculate a population that is representative of the flows being produced. It is significant to note that this equivalent population is generally higher than the actual population due to industrial and commercial connections that translate into a higher number of ERUs.

3.4.1 Existing Equivalent Residential Units and Population

Existing connections in Providence City consist of residential and commercial units. Residential ERUs were determined by adding the existing number of residential sewer connections to the total number of units for all multi-family areas in the City. Commercial ERUs were determined using average winter water meter data to avoid accounting for culinary water used for irrigation. The average winter day flow was divided by 245 gallons per day per ERU to get an equivalent number of ERUs for each commercial connection. **Appendix F** shows the total number of ERUs for all non-single-family connections in the City. The existing number of ERUs, average household size, and equivalent population are given in **Table 3.2.**

Table 3.2 Existing ERUs

Residential ERUs	*Commercial ERUs*	*Total ERUs*	*Average Household Size*	*Equivalent Population*
2,680	236	2,916	2.92	7,830

3.4.2 Projected Equivalent Residential Units and Population

Future wastewater connections are anticipated to closely follow the population growth rate over the next 20 years. Using the respective growth rates determined for Providence, future ERU totals for 2040 and 2070 were calculated with exponential growth equations. Equivalent populations for these years were subsequently calculated using the projected ERUs and average household size.

These metrics for projected ERUs and equivalent population for 2040 and 2070 are summarized in **Table 3.3.**

Table 3.3 Projected ERUs

City	*2020 ERUs*	*Growth Rate (%)*	*2040 ERUs*	*2040 Equivalent Population*	*2070 ERUs*	*2070 Equivalent Population*
Providence City	2,916	2.48	4,960	13,110	10,790	28,000

* 2070 projections used for 2040 infrastructure sizing

3.5 Wastewater Flow Rate

Sunrise installed a portable flow meter in three locations upstream of the existing meter stations used by Logan City for billing purposes. The locations of these flow meters is discussed in **Section 2.2**. These meters were used to double check the accuracy of the Logan meter and verify that Providence was being billed properly. In addition, all of the meters were used to calibrate the wastewater collection model. Comparing the meter results and analyzing several years of meter data shows the following:

- Logan's meters are calibrated correctly. This was determined be comparing the temporary meter readings with culinary water usage and the recorded wastewater flows from Logan's meters with the gathered flow data during this study.
- An increase of wastewater flow was observed in the spring of each year and then it decreased each fall matching the timeline that irrigation canals are operating as discussed in **Section 3.6.**
- Per capita flow rate was calculated to be 78.1 gallons per capita per day. With 2.92 people per ERU, measurements reflect a flow rate of 228 gallons per ERU per day.

Current wastewater flow rates were based on wastewater meter data for the city. Future wastewater flow rates were estimated using average flows per ERU. The per ERU average day flow rate of 245 gallons per day for Providence City was used in the model. The number is based on the ERU definition for Logan City's treatment impact fee and the need to be a little conservative in future projections with an aging collection system. The wastewater inflow data for Logan City were provided by Logan City staff.

3.5.1 Existing Wastewater Flow Rate

Existing average day wastewater flow rates were obtained from flow meter data. Peak hour wastewater flow rates were calculated using a peaking factor of 1.24. This peaking factor is based on the City's wastewater diurnal curve shown in **Figure 2.1**. The average day and peak hour flow rates are shown in **Table 3.4**.

Table 3.4 Existing Wastewater Flow Rate

City	*2020 Equivalent Population*	*Daily Per Capita Flow Rate (gpcd)*	*2020 Average Day Flow Rate (gpm)*	*2020 Peak Hour Flow Rate (gpm)*
Providence City	7,830	78.1	425	527

*The state of Utah uses 100 gpcd when flow data is unavailable

3.5.2 Future Wastewater Flow Rate

Future wastewater flow rates were calculated from projected ERUs. The per ERU average day flow rate of 245 gallons per day was applied to all new ERUs and added to existing flow rates to estimate future flows. Future average day and peak hour flow rates are shown in **Table 3.5**.

Table 3.5 Projected Wastewater Flow Rate

City	*2040 Average Day Flow Rate (gpm)*	*2040 Peak Hour Flow Rate (gpm)*	*2070 Average Day Flow Rate (gpm)*	*2070 Peak Hour Flow Rate (gpm)*
Providence City	772	958	1,764	2,188

* 2070 projections used for 2040 infrastructure sizing

3.6 Infiltration and Inflow

During the evaluation of the meter data gathered from the three temporary metering sites and from the two permanent meters owned by Logan, it was observed there are potential Infiltration and Inflow (I&I) concerns within the existing collection system. As part of this study, Logan City provided Providence City and Sunrise with graphs correlating wastewater flows over the past decade with precipitation data from the National Oceanic and Atmospheric Administration (NOAA).

While evaluating this data, it was found that the general trend of wastewater flow experiences a slight increase during the month of May. This trend continues to rise during the summer months and then begins to decrease in September and returns to average flows in October. This pattern follows the time period that irrigation occurs in and throughout Providence City. The increase in wastewater flows could be from a variety of situations such as:

- Increase of infiltration into the wastewater collection system through improperly sealed joints or failing pipes and manholes due to a raised water table during the irrigation season from seepage loss throughout the canal networks and surface irrigation.
- Increase of residential sump pump usage due to higher water tables. These sump pumps are sometimes plumbed directly into the residential sewer line illegally or they discharge within the roadways which can then infiltrate into the wastewater collection system via manhole lids.
- Increase of infiltration near an intersection of an irrigation system and the wastewater collection system where the wastewater system has been damaged and there is a significant point of infiltration.

There are other situations that could explain the increased wastewater flows during the irrigation season such as pools and splash pads being drained to the sewer, campers dumping into the system, and additional showers and laundry from summer activities. However, these situations are unlikely to account for a significant increase in wastewater flows. Water meter data from 2020 for the splash pad at Alma Leonhardt Park shows that its flows were equal to about 5 ERUs for the highest month. Pools are likely to only be drained once a year and thus do not account for the increase seen all summer long in wastewater flows.

It was observed that during storm events there is a brief sharp increase in wastewater flows which subsides quickly. Small storms do not have a noticeable impact on the wastewater system; however, the larger storms do appear to have a significant impact on the flows during and immediately after the storm event. Often there is a delayed response due to the time it takes for storm water to accumulate and then flow into the wastewater system. This storm water could be entering the system in various ways:

- Inflow from manhole lids.
- Inflow from new storm water systems that were tied into the wastewater system illegally or by accident during construction.
- Inflow from an area in which the storm water system and the wastewater system cross or are in close proximity and there are holes in each system allowing for cross contamination.
- Inflow from sump pumps that have been illegally plumbed directly to the sewer.

Similarly with the infiltration concerns, these methods of inflow entering the wastewater system are not the only possible methods but are the most common. Included in **Appendix B** are graphs illustrating the data provided by Logan City correlating wastewater flows to precipitation data over a given year.

The following figure was developed using the past decade of wastewater flows and NOAA precipitation data. Each month was averaged to project a typical monthly flow. It was assumed wastewater flows in January, December, and November are true wastewater flows primarily unaffected by I&I. This is due to the lack of irrigation use and most of the precipitation being frozen. The difference between measured wastewater flows and the typical monthly wastewater flows is then taken to be I&I from precipitation during the months of February, March, April, and October due to the lack of irrigation use. For the Months of May, June, July, August, and September the I&I from precipitation was determined using the monthly historic averages from NOAA precipitation data.

The estimated irrigation impact was then determined by the flows not accounted for by typical monthly wastewater flows and precipitation impacts. It is estimated that during an average year the Providence wastewater collection system experiences about 24.4 MG of I&I out of the total 242.2 MG measured wastewater (which is 10.1% of total wastewater flows). At the current Logan treatment and collection rate of $3.10 per thousand gallons, this estimated 24.4 MG of I&I equates to approximately $76,000 per year.

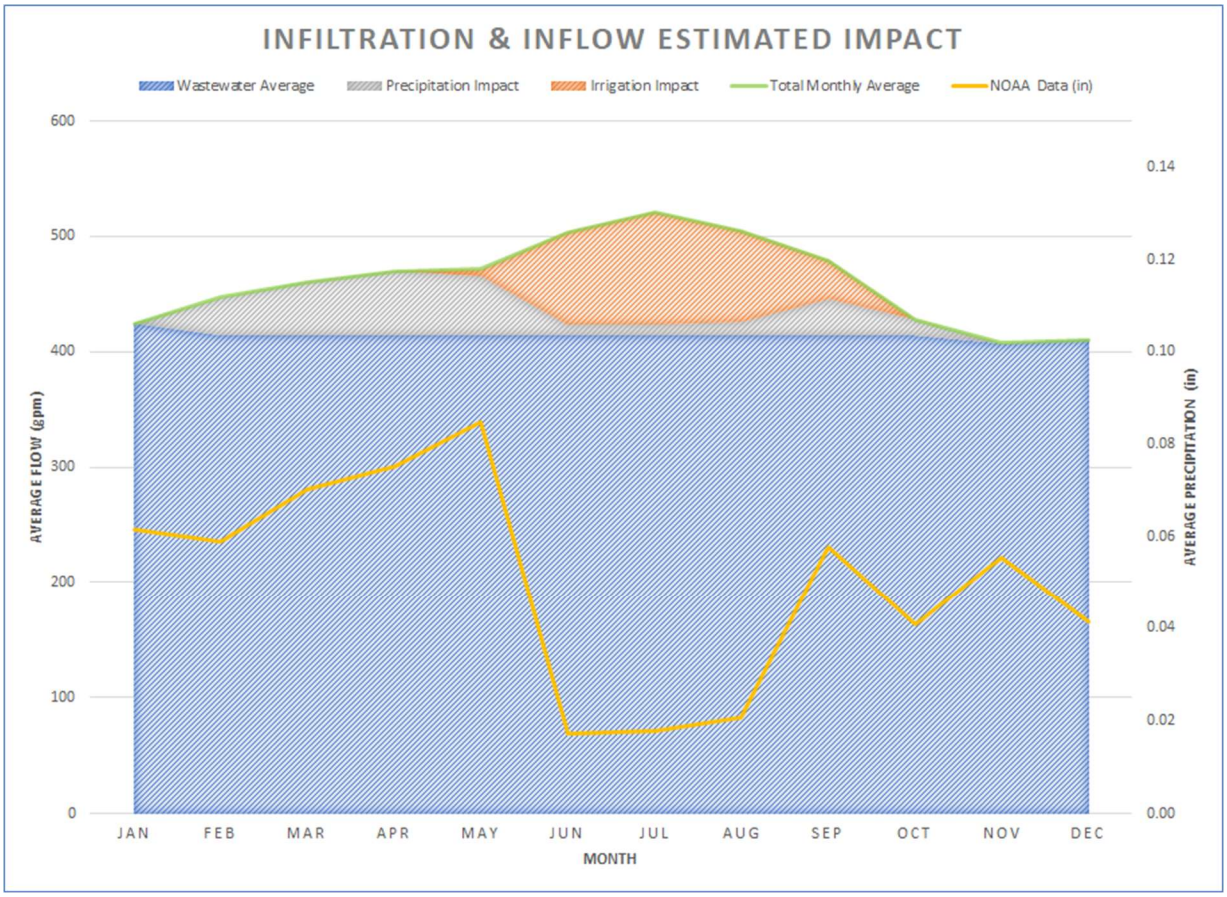

Figure 3.1 Infiltration & Inflow Estimated Impact

The potential I&I concerns have a significant impact on the wastewater collection system. These flows are consuming capacity throughout the collection system but not to the point of causing any major capacity deficiencies. The main concern is that Providence City pays Logan City for every thousand gallons for treatment and pumping. If this I&I flow could be reduced by 33%, the City could save approximately $25,000 annually. I&I flows could be reduced by locating a key area that has a significant impact to the I&I issue (a broken pipe, connected storm water system or sump pump, etc.) and addressing it specifically.

It is to be understood that 100% of I&I cannot be eliminated from a system. Every system has I&I to some degree and the 10% I&I currently being experienced within the Providence collection system is within expected parameters for a system that was primarily built in the 1980's and still has a large amount of concrete pipe. Additional investigation would be needed to determine areas in the system with high I&I that could be addressed. Providence City may need to adopt an ordinance to fine or otherwise penalize people with sump pump connections to the sewer

4.0 SYSTEM MODELING

4.1 Model Selection

Sunrise developed the collection system models in Innovyze® Infosewer, a Geographic Information System (GIS) based software. This software models both simple and complex collection systems created in GIS geodatabases. Flow projections for 2030 and 2040 were developed by using the projected ERU count growth and the current and projected land use maps as directed by the City. The flow projections for 2070 were developed first in an Excel spreadsheet and subsequently imported into Infosewer to be run within the model.

4.2 System Model and Calibration

The City has supplied Sunrise with construction drawings and GIS information for the existing collection system. This data was then augmented using survey data collected on the main sewer laterals that form the backbone of the collection system. On the exhibits illustrating the wastewater collection system, the surveyed lines have been identified. The model created includes all pipes and manholes that were able to be identified by Sunrise and the City.

For the lines that were surveyed, actual depths, inverts, pipe sizes, and lengths were used in the creation of the model. For areas outside of surveyed main laterals, existing GIS data provided by the City, wastewater maps, institutional knowledge from the public works, and data on manhole depth was used to create the model. Although the full city was modeled under these assumptions and information, for purposes of wastewater capital improvements, Sunrise has simplified the layout by removing mid-block manholes and collection lines that branch off the main lines from the capital improvements consideration.

Outside of the main laterals, the minimum standard of 8" pipe is sufficient for wastewater flows. They are often lower in velocity due to a lack of wastewater flows, but as the growth continues, these flows will grow and raise velocities to a proper range. **Exhibit 4.1** *"2020 Existing Critical Infrastructure"* illustrates the wastewater collection system and their sizing.

Due to the significant growth that is anticipated to occur on the west side of Providence within the next 20-year planning period, a future gravity line, force main line, and lift station were included in the 2030 and the 2040 model scenario. A more comprehensive discussion on these force mains and lift stations can be found in **Section 5**. Flow calculations based on zoning criteria and residential development already occurring were carried out to determine loadings that could be implemented into the model. As such, future flows that will occur in these areas have been accounted for and have been distributed into the appropriate manholes and trunk lines to the extent possible.

The gravity wastewater collection system was modeled beginning from the furthest extents of the system within City limits down to the metering station on the west side of Main St (HWY 165) on 1200 South at the city boundary with Logan City. The Golf Course Drive area was modeled to the metering station on Golf Course Road at the city boundary with Logan City. The outfall line through Logan City to the Logan Lift Station on 1000 West was modeled and the line from the Golf Course Drive metering station connecting to the outfall line. The lines from the two Providence metering stations are owned and operated by Logan City. These lines were modeled

using data provided from Logan City. This data included manhole locations, pipe lengths and sizes, and pipe inverts and slopes. This information was provided in a GIS format and has been incorporated into the Providence GIS database.

The zoning map was employed along with a house count using aerial imagery to break up the total wastewater flow over the modeled Providence City collection system. Logan City flows were introduced at the associated manholes in the outfall line and connecting line from the Golf Course Drive metering station. The modeling criteria and values adopted for this study are summarized in **Table 4.1**.

Table 4.1 Modeling Criteria

Criteria	*Values or Assumption*
2020 Average Annual Unit Flows & People Per Household	78.1 gpcpd & 2.92 pph; Commercial connections counted separate
Daily Flow Variation	Unit Flow Hydrographs developed by Sunrise from metered data
Infiltration	Included in metered data
Surface Water Inflow	Not separately modeled Allowed for in excess pipe capacity above recommended maximum flow depth/pipe inner diameter (d/D)
Planning Period	Study Period – (Existing = 2020/ Future = 2040)
Recommendations	Gravity Sewer – Sized to 2070 conditions
Land Use & Population Projections	2020 Providence City study area – Existing zoning map and 2019 Census Bureau estimate with growth factor 2040 Providence City study area – Land use according to future land use plan with input from City and population as estimated by growth factor
Input Pipe Characteristics	Concrete Roughness Coefficient – Gravity Sewer (n = 0.013) PVC Roughness Coefficient – Gravity Sewer (n=0.010) Slope = As surveyed or min. 0.0% if negative Velocity = As hydraulically modeled

Metering data collected from the two existing Providence City meters and the three temporary meters installed was used to calibrate the model within ±1% of observed/measured flows. The City was broken into wastewater tributary areas based on the various meter locations. Wastewater flows feeding to each temporary metering location were calibrated to correlate with the measured flows from the meters. The Golf Course Drive area was calibrated to correlate with the permanent meter accounting for their flows. The main business complex area along the highway was then calibrated using culinary water meter data and the main permanent wastewater meter. The combination of these areas was then compared to the main permanent wastewater meter data to verify the calibration was accurate. **Table 4.2** lists the calibration results using the measured flows from the five metering locations for the 2020 model.

Table 4.2 Model Calibration for the Existing Collection System

FLOW MONITORING LOCATION	FLOW CONDITION	MAX. MEASURED FLOW[1] (gpm)	MAX. MODELED FLOW (gpm)	% DIFFERENCE	CALIBRATION VALUE
Site #1 - MH E19-01	Peak	59.0	59.2	0.3%	1.00
Site #2 - MH S11-01	Peak	136.3	136.4	0.1%	0.78
Site #3 - MH IW-16	Peak	286.7	285.5	0.4%	1.00
Business Complex	Peak	20.3	19.8	2.2%	0.80
Site #4 - Golf Course Meter	Peak	25.5	25.6	0.5%	0.59
Site #5 - Main Providence Me	Peak	502.3	500.9	0.2%	N/A

[1]**Measured Peak Event: Maximum flow recorded over sampling period (minimum 7 days) as recorded in 15 minute intervals.**

Estimated 2030 and 2040 flows were then accomplished by taking the now calibrated 2020 model and then adding ERU counts to growth areas. The ERU count was taken from the population projects and was then distributed across the City based on current zoning areas and projected growth areas as indicated by the City. As discussed in **Section 3.4**, each ERU is equivalent to 245 gpd.

The 2070 model, which is used to size future improvements, was created based on the population projections following the same growth patterns used to establish the 2030 and the 2040 models. However, instead of distributing the growth into specific areas of growth, the growth was evenly distributed across the entire City using a global growth factor based on the 2040 model. The global factor used to grow the 2040 model to the 2070 model was 2.284.

The results of the existing and future models can be found in Sections 4.4 and 4.5. Flow projections for 2070 were used as criteria in sizing future improvements, per State of Utah requirements. Model results for 2020, 2030, and 2040 can be seen in **Appendix A**.

4.3 Deficiency Criteria

The critical infrastructure as described in Section 2.1 was originally installed in 1989. The gravity sewer mains were constructed with reinforced concrete pipe which, under severe conditions (e.g. flat grades, reduced velocities, long detention times, and warm regions), can result in shortened design life due to deterioration of the pipe from excess hydrogen sulfide build up. The physical condition of the existing collection lines was not investigated as a part of this report. Routine inspection of the collection system, especially where velocities are minimal should be considered a vital part of the City's inspection and maintenance program. A portion of the city has been replaced with PVC material and new development is being constructed with PVC material. This has resulted in the core/historic part of Providence still being primarily RCP pipe, whereas the outer shell and new growth is PVC.

4.3.1 Capacity Deficiency

Capacity deficiency is determined by dividing the recommended maximum flow depth by the pipe inner diameter (d/D). The criteria for evaluating the capacity deficiency of gravity wastewater piping are listed in **Table 4.3**.

Table 4.3 Capacity Deficiency Criteria

Criteria	*Assessment Codes*	*Assumptions*
Gravity Pipe Flow Depth	"Good Capacity" – d/D < 0.50	Non-Deficient
	"Fair Capacity" – 0.50 ≤ d/D < 0.70	Non-Deficient
	"Poor Capacity" – d/D ≥ 0.70	Deficient

4.3.2 Conditional Deficiency

Conditional deficiencies are determined by the ability of the wastewater flow to flush grit and harmful gasses from the collection system. The criteria for evaluating the conditional deficiency of gravity wastewater piping are listed in **Table 4.4.**

Table 4.4 Velocity Deficiency Criteria

ELEMENT	*ASSESSMENT CODES*	*ASSUMPTIONS*
Gravity Pipe Velocity	"Good Velocity" – Model peak velocities are greater than 2.0 fps	Non-Deficient
	"Fair Velocity" – Model peak velocities are between 1.0 - 2.0 fps; inability to obtain daily flushing velocity will generate accumulations of organic suspended solids. Inorganic sulfur compounds and organic material present in the waste stream become consumed by complex bacterial communities resulting in increasing concentration of sulfide ions and increasing detention time. This leads to increasing anaerobic conditions, resulting in increasing anaerobic bacterial communities to consume sulfur and organic material with sulfide ions being the by-product. The results of all these conditions create a likelihood of a high concentration of hydrogen sulfide. Net corrosive results are dependent on other factors not covered in the scope of this study.	Deficient
	"Poor Velocity" – Model peak velocities less than 1.0 fps; similar in nature to above condition but accelerating and resulting in likelihood of extremely high concentrations of hydrogen sulfide. Net corrosive results are dependent on other factor not covered in the scope of this study.	Deficient
Gravity Pipe Slope	"Flat Grade" – Average slope between manholes less than recommendations from Utah State Admin Code R317 for a given pipe diameter.	Deficient

4.4 Existing Collection Line Deficiencies

The existing collection system deficiencies are shown in **Exhibit 4.2** *"2020 Existing Collection System - Pipe Capacity Deficiencies"* and **Exhibit 4.3** *"2020 Existing Collection System - Pipe Velocity Deficiencies*." **Table 4.5** summarizes the existing capacity and slope deficiencies according to the criteria established in Section 4.3. Deficiency codes are shown in red.

Table 4.5 Existing Piping Capacity and Condition Assessment

Ownership	*Upstream Junction*	*Downstream Junction*	*Average Slope (%)*	*Peak Velocity (ft/s)*	*d/D*	*Assessment Code*
Logan City	SEMH02112	SEMH03023	0.0%	1.8	1.00	Poor Capacity, Flat Grade
Logan City	SEMH02161	SEMH04165	0.0%	1.4	1.00	Poor Capacity, Flat Grade
Logan City	SEMH02229	SEMH02230	0.0%	0.8	1.00	Poor Capacity, Flat Grade
Providence City	11T-09	11T-07	1.8%	0.6	1.00	Poor Capacity
Logan City	SEMH02154	SEMH02112	0.2%	2.8	0.60	Fair Capacity
Logan City	SEMH02113	SEMH02115	0.2%	2.9	0.60	Fair Capacity

Velocity deficiencies were not included in **Table 4.5** as they are mostly the result of low flows and will improve as Providence City continues to grow. Lines with low velocities as shown in **Exhibit 4.3** should be priority areas for inspection and cleaning operations until flow rates increase to develop velocities over two feet per second.

4.5 2040 Collection Line Deficiencies

The 2040 collection system deficiencies are shown in **Exhibit 4.6** *"2040 Collection System - Pipe Capacity Deficiencies"* and **Exhibit 4.7** *"2040 Collection System - Pipe Velocity Deficiencies."* **Table 4.6** summarizes the future capacity and slope deficiencies according to the criteria established in **Section 4.3**. Deficiencies along with their associated assessment codes are shown in red. Values are not presented for the 2030 model as they only indicate the escalation of the deficiencies from the 2020 model to the 2030 model which are isolated to the wastewater outfall line carrying the wastewater from Providence City to the lift station owned by Logan City. However, the 2030 model visual results can be seen in **Exhibit 4.4** *"2030 Collection System - Pipe Capacity Deficiencies"* and **Exhibit 4.5** *"2030 Collection System - Pipe Velocity Deficiencies."*

Table 4.6 2040 Piping Capacity and Condition Assessment

Ownership	*Upstream Junction*	*Downstream Junction*	*Average Slope (%)*	*Peak Velocity (ft/s)*	*d/D*	*Assessment Code*
Logan City	SEMH02112	SEMH03023	0.0%	3.4	1.00	Poor Capacity, Flat Grade
Logan City	SEMH02161	SEMH04165	0.0%	2.8	1.00	Poor Capacity, Flat Grade
Logan City	SEMH02229	SEMH02230	0.0%	1.5	1.00	Poor Capacity, Flat Grade
Providence City	11T-09	11T-07	1.8%	0.8	1.00	Poor Capacity
Logan City	SEMH02154	SEMH02112	0.2%	3.4	1.00	Poor Capacity
Logan City	SEMH02113	SEMH02115	0.2%	3.4	1.00	Poor Capacity
Logan City	IW-26-METER	IW-26	0.6%	3.5	0.76	Poor Capacity
Logan City	IW-22	IW-26-METER	1.0%	4.3	0.63	Fair Capacity
Logan City	SEMH04007	SEMH02161	0.6%	4.7	0.58	Fair Capacity
Logan City	SEMH02237	SEMH02238	0.1%	2.6	0.57	Fair Capacity, Flat Grade
Logan City	SEMH02244	LOGAN CITY OUTLET	0.1%	2.7	0.57	Fair Capacity, Flat Grade
Logan City	IW-19	IW-22	1.6%	5.1	0.54	Fair Capacity
Logan City	SEMH03023	SEMH02113	1.1%	6.3	0.53	Fair Capacity

Pipe segments found to have only velocity deficiencies were not included in **Table 4.6**, as these deficiencies are mostly the result of low flows and will improve as Providence continues to grow. This trend is demonstrated by comparing velocity deficiencies for the years 2020 and 2040, where the number of segments exhibiting velocity deficiencies in 2040 is vastly lower than 2020.

However, lines with low velocities as shown in **Exhibit 4.7** *"2040 Collection System - Pipe Velocity Deficiencies"* should be priority areas for inspection and cleaning operations until flow rates increase and eventually develop velocities over two feet per second.

Only collection lines with "poor capacity" were shown on the 2040 deficiency list. Lines with "fair capacity" in 2040 may or may not need replacement by 2070. These lines should be monitored for

capacity as the City grows and replaced if the d/D ratio exceeds 0.70. Lines exhibiting capacity deficiencies in the model are shown in **Exhibit 4.6** *"2040 Collection System - Pipe Capacity Deficiencies."*

4.6 Annexation Area Deficiencies

Based on discussion between the City and developers, significant growth is anticipated in the west sector of Providence City (the west side of UT-165). Due to the topography of these western areas, however, gravity flow to the city's collection system backbone will not be viable. Capital improvements such as lift stations and force mains will be needed to provide wastewater facilities to these areas. Alternative analyses were carried out to determine viable solutions for wastewater conveyance in the western regions of Providence City. These alternatives are discussed in **Section 5.8.**

5.0 CAPITAL IMPROVEMENTS AND COST ESTIMATES

In the sections that follow, capital improvement projects and their associated cost estimates will be discussed. The primary objective for each project is to alleviate existing and future system deficiencies in the Providence City wastewater system as shown in **Exhibits 4.2 - 4.7.**

Preliminary evaluations were carried out to determine the viability of the capital improvement alternatives that would address identified deficiencies. These evaluations were performed for the treatment system, collection system, and west side area. The alternatives for the collection system and west side area are dependent on the treatment system alternatives as the collection system will need to be modified to convey the wastewater to the selected treatment plant. This report only includes a high-level discussion on treatment alternatives. A wastewater treatment study would be needed to look at the treatment alternatives in greater detail.

The alternatives included providing sewer infrastructure to the undeveloped area to the west of UT-165 that is currently in City Limits and the adjacent areas to the west and south that could potentially be annexed in the future. Portions of these alternatives are included in the collection alternatives as they would be needed to make the associated treatment alternatives feasible regardless of improvements to help future development on the west side of the City.

Five alternatives were considered to address the outfall line deficiency and concern about treatment options including a "do nothing" alternative. These alternatives group the needed capital improvements together based on treatment option. Two additional improvements address other concerns in the system. These improvements are independent of the other four alternatives. The following alternatives were considered.

- Alternative 1: Logan Treatment – Do Nothing
- Alternative 2A: Logan Treatment Outfall A, **Exhibit 5.1**
- Alternative 2B: Logan Treatment Outfall B, **Exhibit 5.2**
- Alternative 3: Hyrum Treatment, **Exhibit 5.3**
- Alternative 4: Providence Treatment, **Exhibit 5.4**
- Line Replacement – P_11T-09_11T-07, **$103,000**
- Wastewater Master Plan Update, **$50,000**

Estimated project costs for the four considered alternatives are provided. To the extent possible, flow projections for 2070 were modeled to ensure that recommended capital improvements will not require premature replacement due to capacity deficiencies before the life of that improvement is over. Thus, new pipelines and lift stations were sized to account for future flows and follow design guidelines as set forth in the State of Utah Admin Code R317.

Sunrise carried out an analysis of Providence's Infosewer Wastewater Model to determine approximately when the replacement of deficient lines would be necessary. Using the model's output together with best engineering judgement, the collection lines identified for replacement were the outfall line to Logan City and segment P_11T-09_11T-07. The remainder of the City's collection system is shown to have capacity to meet flows for the next 20 years. Additional wastewater modeling should be performed as the new developments are constructed to check the

adequacy of the existing collection system. Capital improvement projects described in the sections that follow are shown in **Exhibits 5.1 - 5.4.**

For the purpose of cost estimation, Sunrise believes that the level of accuracy in project planning can range between plus or minus 25 percent. For example, if a project is estimated at $1,000,000, then the accuracy of reliability of the cost estimate could range between $750,000 and $1,250,000. While such accuracy may be perceived to not be particularly high, the primary purpose of master planning is to develop a list of necessary capital improvements and estimate their associated costs and implementation dates.

These estimated costs will allow for assessment of appropriate impact fees, and estimated implementation dates will allow the City to determine how quickly those fees need to be collected. As capital improvement projects advance through conceptual and final design phases, Providence will work closely with their consultant to develop refined cost estimates with increased levels of accuracy.

Sunrise anticipates that wastewater improvements will be completed utilizing conventional construction techniques. Unit costs for cost estimates were compiled from extensive records of Sunrise project bid tabulations. All costs associated with the estimates are in 2020 dollars. To account for inflation as time goes on, Providence City should adjust cost estimates according to the cost of living and Heavy Construction Cost Index factors.

5.1 Alternative 1: Logan Treatment – Do Nothing

The first alternative evaluated was the "do nothing" alternative. Providence City would continue to send their wastewater flows to Logan City for treatment and pay impact, treatment, and collection fees to Logan City. The existing outfall line going to the Logan lift station is currently exceeding its capacity. Without any improvements to the existing outfall, these conditions will worsen and could cause the pipe to overflow. Since this alternative does not accommodate current and future flow rates, it was not considered viable.

Without any new infrastructure installed on the west side of the highway, new development would have to install their own gravity collection system, lift station, and force main to hook on to the existing sewer system. This includes a bore under UT-165. Without infrastructure in place, the higher potential cost to the first few developers to install the sewer backbone may slow development in that area.

5.2 Alternative 2A: Logan Treatment Outfall Option A

In this alternative, a new outfall line to the Logan Lift Station would be installed that would accommodate 100% of Providence City's wastewater flows. This line would be installed parallel with the existing outfall line and only include connections from Providence City. Logan City would continue to own and operate the existing outfall line which would accommodate their flows and the new line with all of Providence's flows.

Providence City would continue to send their wastewater flows to Logan City for treatment and pay treatment impact fees for new connections and treatment and collection fees to Logan City

per 1000 gallons treated. A new agreement between Providence and Logan would need to be created to address the change in the outfall line so that Providence does not need to pay for the line with Logan City's flows to be replaced in the future.

The northwest corner of the City, referred to as the Golf Course Drive area, has a shared line with Logan City currently that connects onto the shared outfall line. To have an outfall line that accommodates 100% of Providence City's wastewater flows, a lift station and force main would need to be installed to pump the flows from this area to the existing collection system. The City could also continue to pass flows from this area into the Logan outfall line and pay the associated collection fees.

The area around the existing outfall line has high groundwater levels. Logan City has noted that this line has higher than average infiltration due to the high groundwater levels, but the exact amount is unknown. The new outfall line would be installed so that no infiltration would enter the pipe lowering the per 1,000 gallon fee Logan charges. Over time as the line aged, there is potential for infiltration.

To provide sewer service for the west side area, a new gravity line, lift station, and force main would be installed. A gravity trunk line would be installed in the center of this area for developments to connect onto in the future. This gravity line would convey flows to the western edge of the area, near the Black Smith Fork along 1700 South, to a lift station. The lift station would pump flows through a force main to the east under UT-165 and connect into the existing collection system.

5.2.1 Capital Improvement Projects: Logan Treatment 18" Outfall - Option A

18" Outfall Line to Lift Station - 100% Providence Owned

The existing outfall line to the Logan City lift station will remain in place. Providence City will install an 18-inch gravity line parallel with the existing outfall line that will handle all of Providence City's wastewater flows. The 18-inch line is sized for the projected 2070 flows for Providence only. The existing line will continue to convey Providence's flows until the project is completed and brought online.

The project consists of installing a 18-inch gravity sewer pipe with manholes and surface repair between the existing metering station and the Logan lift station on 1000 West. The pipe installation will require boring under two UDOT roads, the railroad, and the Logan River. These bores will require permitting from the respective agencies. It is anticipated that dewatering will be necessary for a majority of the project. The sewer line travels through the golf course which will require additional landscaping. A new Parshall flume meter station will be installed near the existing meter station.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled "*18" Outfall Line to Lift Station*" that can be found within **Appendix C**. The outfall line to Logan City has an estimated overall cost of $4,248,000.

West Side Gravity Collection System

The project consists of installing an 8-inch gravity sewer pipe along 1700 South starting at UT-165 and heading west to the proposed west side lift station near the crossing with Blacksmith Fork. The project will include the installation of manholes, traffic control, and surface repair. The cost estimate assumed that an easement would need to be acquired to install a portion of the gravity collection line.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"West Side Gravity Collection System"* that can be found within **Appendix C**. The west side gravity collection system has an estimated overall cost of $395,000.

West Side Force Main to Existing System

The project consists of installing a 4-inch wastewater force main along 1700 South from the proposed west side lift station to the existing gravity line along UT-165. This will require a bore under UT-165 to connect to the existing gravity line. The project will include the installation of pressure sewer cleanouts, traffic control, and surface repair.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"West Side Force Main to Existing System"* that can be found within **Appendix C**. The west side force main to existing system has an estimated overall cost of $344,000.

West Side Lift Station

The project consists of constructing a lift station near where 1700 South crosses the Blacksmith Fork. The lift station will be sized for maximum flows of about 0.3 MGD. The project will include earthwork, mechanical piping and valves, pumps and motors, electrical work, controls and instrumentation, a wetwell and appurtenances, and a concrete vault to house the mechanical components.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"West Side Lift Station (0.3 MGD)"* that can be found within **Appendix C**. The west side lift station has an estimated overall cost of $180,000.

Golf Course Drive Force Main

The project consists of installing a 4-inch wastewater force main from the proposed Golf Course Drive lift station traveling east along Golf Course Road until it connects to the existing gravity main at the intersection of Golf Course Road and Spring Creek Parkway. The project will include the installation of pressure sewer cleanouts, traffic control, and surface repair.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Golf Course Drive Force Main"* that can be found within **Appendix C**. The Golf Course Drive force main has an estimated overall cost of $137,000.

Golf Course Drive Lift Station

The project consists of constructing a lift station to replace the existing meter station on Golf Course Road. The lift station will be sized for maximum flows of about 0.1 MGD. The project will include earthwork, mechanical piping and valves, pumps and motors, electrical work, controls and instrumentation, a wetwell and appurtenances, and a concrete vault to house the mechanical components.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Golf Course Drive Lift Station (0.1 MGD)"* that can be found within **Appendix C**. The Golf Course Drive lift station has an estimated overall cost of $180,000.

5.2.2 Logan Treatment Outfall Option A - Total Cost Estimate

The total Preliminary Engineer's Opinion of Probable Costs (EOPC) for the Logan Treatment Outfall A alternative capital improvements is $5,484,000.

Table 5.1 Logan Treatment Outfall Option A Costs

18" Outfall Line	$4,248,000
West Side Gravity Collection	$395,000
West Side Force Main	$344,000
West Side Lift Station	$180,000
Golf Course Drive Force Main	$137,000
Golf Course Drive Lift Station	$180,000
Total	**$5,484,000**

5.3 Alternative 2B: Logan Treatment Outfall Option B

In this alternative includes installing a new outfall line to the Logan Lift Station that would be shared with Logan City. This 21" line would be installed parallel with the existing outfall line and include connections from Providence and Logan. With this alternative, Providence City would continue to send their wastewater flows to Logan City for treatment and pay treatment impact, treatment, and collection fees to Logan City.

This line would be owned by Logan City per the City's current agreement. Logan City would maintain the line which should not result in an increase in Providence's collection fee to Logan since the agreement already accounts for this. Logan is currently paying for the inflow in the existing outfall line below the meter due to infiltration and would likely continue to pay for that inflow in this alternative if there were infiltration in the line in the future. This is due to Logan being the owner of the pipeline.

Depending on the condition of the existing outfall line, Providence and Logan may want to consider taking the existing line out of service and combining all of the flow into one line or look at lining the existing line. The existing line would need to be videoed to determine its condition and see if these options are worthwhile. Providence is paying Logan to maintain this line as part

of the collection system fee. The cost to video and maintain the existing pipe should be covered by the fee Providence is currently paying.

To provide sewer service for the west side area, a new gravity line, lift station, and force main would be installed. A gravity trunk line would be installed in the center of this area for developments to connect onto in the future. This gravity line would convey flows to the western edge of the area to a lift station. The lift station would pump flows through a force main to the east under UT-165 and connect into the existing collection system.

5.3.1 Capital Improvement Projects: Logan Treatment 21" Outfall - Option B

21" Outfall Line to Logan City - Shared

Providence City will install a 21-inch gravity sewer line parallel with the existing outfall line. The 21-inch line is sized for the projected 2070 flows assuming the existing line is taken out of service. The existing line will continue to convey all wastewater flows until the project is completed and brought online.

The project consists of installing a 21-inch gravity sewer pipe with manholes and surface repair between the existing metering station and the Logan lift station on 1000 West. The pipe installation will require boring across two UDOT roads, the railroad, and the Logan River. These bores will require permitting from the respective agencies. It is anticipated that dewatering will be necessary for a majority of the project. The sewer line travels through the golf course which will require additional landscaping. A new Parshall flume meter station will be installed near the existing meter station.

The costs for this line were divided between Providence and Logan based on number of connections that feed to the line. The cost for the new meter station and connection to the existing line on the upstream end were assessed only to Providence as these do not benefit Logan City. The connection to the line coming from the Golf Course Drive metering station and the connection to the lift station were shared equaling between Logan and Providence. The remaining items were split 89% to Providence and 11% to Logan based on a count of existing connections. There are 2,320 connections for Providence and 295 connections for Logan. This includes residential and commercial connections.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"21" Outfall Line to Lift Station"* that can be found within **Appendix C**. The outfall line to Logan City has an estimated overall cost of $4,471,000. Providence's portion of this cost is $3,948,000, and Logan's portion of this costs if $523,000.

West Side Gravity Collection System

The project consists of installing an 8-inch gravity sewer pipe along 1700 South starting at UT-165 and heading west to the proposed west side lift station near the crossing with Blacksmith Fork. The project will include the installation of manholes, traffic control, and surface repair.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"West Side Gravity Collection System"* that can be found within **Appendix C**. The west side gravity collection system has an estimated overall cost of $395,000.

West Side Force Main to Existing System

The project consists of installing a 4-inch wastewater force main along 1700 South from the proposed west side lift station to the existing gravity line along UT-165. This will require a bore under UT-165 to connect to the existing line. The project will include the installation of pressure sewer cleanouts, traffic control, and surface repair.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"West Side Force Main to Existing System"* that can be found within **Appendix C**. The west side force main to existing system has an estimated overall cost of $344,000.

West Side Lift Station

The project consists of constructing a lift station near where 1700 South crosses the Blacksmith Fork. The lift station will be sized for maximum flows of about 0.3 MGD. The project will include earthwork, mechanical piping and valves, pumps and motors, electrical work, controls and instrumentation, a wetwell and appurtenances, and a concrete vault to house the mechanical components.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"West Side Lift Station (0.3 MGD)"* that can be found within **Appendix C**. The west side lift station has an estimated overall cost of $180,000.

5.3.2 Logan Treatment Outfall Option B - Total Cost Estimate

The total Preliminary Engineer's Opinion of Probable Costs (EOPC) for the Logan Treatment Outfall B alternative capital improvements is $5,390,000. Providence's portion of these costs is $4,867,000.

Table 5.2 Logan Treatment Outfall Option B Costs

21" Outfall Line	$3,948,000
West Side Gravity Collection	$395,000
West Side Force Main	$344,000
West Side Lift Station	$180,000
Total	**$4,867,000**

5.4 Alternative 3: Hyrum Treatment

The third alternative evaluated was to pump the City's wastewater flows to the Hyrum treatment plant. This would require expansion of the plant to handle the increase in flows. Per a conversation with Hyrum's City Administrator, Providence City could become joint owners with Hyrum and provide their own operator for the plant. Providence would need to buy into the system to pay for the existing land and infrastructure that Hyrum City owns.

Modifications to the existing system would be needed to divert flow to the Hyrum treatment plant. These improvements include a lift station and force main for the Golf Course Drive area on the northwest corner of the City and a lift station, force main, and gravity line to convey the City's entire wastewater flow to Hyrum.

The Golf Course Drive area of the City would not be able to gravity flow to the existing Providence system. To get these flows to the Hyrum treatment plant, a small lift station and force main would need to be installed to service this area. The lift station for the Golf Course Drive area would replace the existing meter station on the west side of this area on Golf Course Road.

The meter station at the start of the existing shared line with Logan would be abandoned and the flow would be diverted to a new gravity line. This new gravity line would travel along the west edge of the City to a new lift station. This line would help service the west side area of the City. This lift station would be sized to pump the entire City's wastewater flow through a force main to the Hyrum treatment plant.

To service the remainder of the west side of the City, a gravity trunk line would be installed in the center of this area for developments to connect onto in the future. This gravity line would convey flows to the western edge of the area to the main lift station.

Providence City could potentially reduce their portion of the total project cost for the force main, gravity line, and treatment plant upgrades by joining with Millville, Nibley, or another City to pump their sewer flows to Hyrum City.

5.4.1 Capital Improvement Projects: Hyrum Treatment

Wastewater Treatment Master Plan

This study was for the wastewater collection system. High level cost estimates were created for potential treatment options to assist Providence City in evaluating whether other treatment options may be worth investigating further. A detailed evaluation of treatment options was not included in the scope of this study. Sunrise recommends that Providence City create a wastewater treatment master plan to evaluate potential treatment options if the City wants to look at alternatives to the Logan WWTP. This will allow the City to evaluate infrastructure needs and the appropriate impact fees and user rates needed for a different treatment option.

Sunrise estimates that the recommended wastewater treatment master plan will have an estimated cost of $15,000 to $25,000.

Hyrum City WWTP Upgrade

This project consists of constructing an expansion to the Hyrum WWTP that would be adjacent to the existing plant. This would include facilities for treatment, biosolid management, and treated water discharge. This would also likely require land acquisition. The cost estimate for the treatment plant upgrades was a high-level approximation. The

design of the plant upgrades would depend on the findings of a wastewater treatment master plan.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Hyrum City WWTP Upgrade"* that can be found within **Appendix C**. The Hyrum City WWTP upgrade has an estimated overall cost of $17,280,000.

West Side Gravity Collection System

The project consists of installing two gravity sewer pipes to service the west side of the City. The existing meter station at the start of the outfall line would be modified to divert flow towards the proposed Providence lift station. A 21-inch gravity pipe would be installed from the existing meter station and travel along the western edge of the future annexation area to the proposed Providence lift station near the crossing of 1700 South and the Blacksmith Fork. An 8-inch gravity sewer pipe would be installed along 1700 South starting at UT-165 and heading west to the proposed Providence lift station. The project will include the installation of manholes, traffic control, and surface repair. The cost estimate assumed that the landowners would provide an easement for any pipe not located in public right-of-way currently.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"West Side Gravity Collection System"* that can be found within **Appendix C**. The west side gravity collection system has an estimated overall cost of $1,423,000.

Providence Force Main

The project consists of installing a 16-inch wastewater force main along 1700 South from the proposed Providence lift station to UT-165. The force main would then bend and head south along UT-165 to Johnson Road in Nibley where the force main would enter the gravity sewer line. The project will include the installation of pressure sewer cleanouts, traffic control, and surface repair.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Providence Force Main"* that can be found within **Appendix C**. The Providence force main has an estimated overall cost of $3,141,000.

Providence Lift Station

The project consists of constructing a lift station near where 1700 South crosses the Blacksmith Fork. The lift station will be sized for maximum flows of about 1.3 MGD. The project will include constructing a lift station building with HVAC equipment, mechanical piping and valves, pumps and motors, electrical work, controls and instrumentation, a wetwell and appurtenances, an interior crane assembly, backup generator, excavation, and landscaping. It was assumed that the City will need to purchase land to construct the lift station on.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Providence Lift Station (1.3 MGD)"* that can be found within **Appendix C**. The Providence lift station has an estimated overall cost of $2,840,000.

Golf Course Drive Force Main

The project consists of installing a 4-inch wastewater force main from the proposed Golf Course Drive lift station traveling east along Golf Course Road until it connects to the existing gravity main at the intersection of Golf Course Road and Spring Creek Parkway. The project will include the installation of pressure sewer cleanouts, traffic control, and surface repair.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Golf Course Drive Force Main"* that can be found within **Appendix C**. The Golf Course Drive force main has an estimated overall cost of $137,000.

Golf Course Drive Lift Station

The project consists of constructing a lift station to replace the existing meter station on Golf Course Road. The lift station will be sized for maximum flows of about 0.1 MGD. The project will include earthwork, mechanical piping and valves, pumps and motors, electrical work, controls and instrumentation, a wetwell and appurtenances, and a concrete vault to house the mechanical components.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Golf Course Drive Lift Station (0.1 MGD)"* that can be found within **Appendix C**. The Golf Course Drive lift station has an estimated overall cost of $180,000.

Gravity Line to Treatment Plant

The project consists of installing a 27-inch wastewater pipe starting at the Providence force main tie in near the intersection of UT-165 and Johnson Road in Nibley. The line would travel south along UT-165 to 4400 South where it would bend to the west and connection the Hyrum treatment plant. The project will include the installation of manholes, traffic control, and surface repair. The project also includes a bore under the railroad and two canal crossings.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Gravity Line to Treatment Plant"* that can be found within **Appendix C**. The gravity line to the treatment plant has an estimated overall cost of $5,663,000.

5.4.2 Hyrum Treatment – Total Cost Estimate

The total Preliminary Engineer's Opinion of Probable Costs (EOPC) for the Hyrum Treatment alternative capital improvements is $30,689,000.

Table 5.3 Hyrum Treatment Costs

Wastewater Master Plan	$25,000
Hyrum City WWTP Upgrade	$17,280,000
West Side Gravity Collection System	$1,423,000
Providence Force Main	$3,141,000
Golf Course Drive Force Main	$137,000
Golf Course Drive Lift Station	$180,000
Gravity Line to Treatment Plant	$5,663,000
Total	**$30,689,000**

5.5 Alternative 4: Providence Treatment

The fourth alternative evaluated was to construct a new 1.5 MGD wastewater treatment plant in Providence. The City would own and operate the plant. Providence City could potentially reduce their portion of the total project cost by allowing a nearby city or cities to be included in the treatment plant. With other cities being in the process or looking at combining with the Hyrum treatment plant, it is unlikely that Providence will have another city included on this treatment plant alternative.

Modifications to the existing system would be needed to divert flow to the Providence treatment plant. These improvements include a lift station and force main for the Golf Course Drive area on the northwest corner of the City and a gravity line to convey the City's entire wastewater flow to the plant.

The Golf Course Drive area of the City would not be able to gravity flow to the existing Providence system. To get these flows to the Hyrum treatment plant, a small lift station would need to be installed to service this area. The lift station for the Golf Course Drive area would replace the existing meter station on the west side of this area on Golf Course Road.

The meter station at the start of the existing shared line with Logan would be abandoned and the flow would be diverted to a new gravity line. This new gravity line would travel along the west edge of the City to the Providence treatment plant. This gravity line would provide service to part of the west side area. Another gravity trunk line would be installed in the center of the west side area from the edge of UT-165 to the west where it would enter the Providence treatment plant. If the treatment plant could not be located on the west side of the City, a lift station would be constructed and a force main to pump the wastewater flows to the plant.

5.5.1 Capital Improvement Projects: Providence Treatment

Wastewater Treatment Master Plan

This study was for the wastewater collection system. High level cost estimates were created for potential treatment options to assist Providence City in evaluating whether other treatment options may be worth investigating further. A detailed evaluation of treatment options was not included in the scope of this study. Sunrise recommends that Providence City create a wastewater treatment master plan to evaluate potential treatment options if

the City wants to look at alternatives to the Logan WWTP. This will allow the City to evaluate infrastructure needs and the appropriate impact fees and user rates needed for a different treatment option.

Sunrise estimates that the recommended wastewater treatment master plan will have an estimated cost of $15,000 to $25,000.

Providence City WWTP – Full Process

This project consists of constructing a 1.5 MGD wastewater treatment plant on the west side of the City near 1700 South and the Blacksmith Fork. This would include facilities for treatment, biosolid management, and treated water discharge. This would also require land acquisition. The cost estimate for the treatment plant upgrades was a high-level approximation. The design of the plant upgrades would depend on the findings of a wastewater treatment master plan.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Providence City WWTP – Full Process"* that can be found within **Appendix C**. The Providence treatment plant has an estimated overall cost of $22,600,000.

West Side Gravity Collection System

The project consists of installing two gravity sewer pipes to service the west side of the City. The existing meter station at the start of the outfall line would be modified to divert flow towards the proposed Providence WWTP. A 21-inch gravity pipe would be installed from the existing meter station and travel along the western edge of the future annexation area to the proposed WWTP near the crossing of 1700 South and the Blacksmith Fork. An 8-inch gravity sewer pipe would be installed along 1700 South starting at UT-165 and heading west to the proposed Providence WWTP. The project will include the installation of manholes, traffic control, and surface repair. The cost estimate assumed that the landowners would provide an easement for any pipe not located in public right-of-way currently.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"West Side Gravity Collection System"* that can be found within **Appendix C**. The west side gravity collection system has an estimated overall cost of $1,423,000.

Golf Course Drive Force Main

The project consists of installing a 4-inch wastewater force main from the proposed Golf Course Drive lift station traveling east along Golf Course Road until it connects to the existing gravity main at the intersection of Golf Course Road and Spring Creek Parkway. The project will include the installation of pressure sewer cleanouts, traffic control, and surface repair.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Golf Course Drive Force Main"* that can be found within **Appendix C**. The Golf Course Drive force main has an estimated overall cost of $137,000.

Golf Course Drive Lift Station

The project consists of constructing a lift station to replace the existing meter station on Golf Course Road. The lift station will be sized for maximum flows of about 0.1 MGD. The project will include earthwork, mechanical piping and valves, pumps and motors, electrical work, controls and instrumentation, a wetwell and appurtenances, and a concrete vault to house the mechanical components.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled *"Golf Course Drive Lift Station (0.1 MGD)"* that can be found within **Appendix C**. The Golf Course Drive lift station has an estimated overall cost of $180,000.

5.5.2 Providence Treatment – Total Cost Estimate

The total Preliminary Engineer's Opinion of Probable Costs (EOPC) for the Providence Treatment alternative capital improvements is $24,365,000.

Table 5.4 Providence Treatment Costs

Wastewater Master Plan	$25,000
Providence WWTP	$22,600,000
West Side Gravity Collection System	$1,423,000
Golf Course Drive Force Main	$137,000
Golf Course Drive Lift Station	$180,000
Total	**$24,365,000**

5.6 Line Replacement – P_11T-09_11T-07

The model shows that the line between manholes 11T-09 and 11T-07 is currently undersized. This line is approximately 28 feet long and is located in the intersection of Main Street and 100 N. The grade of this line is too flat to handle current flows at its diameter of 8 inches. The existing line needs to be replaced with a 15-inch pipe to meet 2070 flows. This project will require bypass pumping around this section of pipe. The existing manholes will need to be core drilled to allow the 15-inch pipe to be installed.

Sunrise has completed a Preliminary Engineer's Opinion of Probable Costs (EOPC) entitled "*Line Replacement - P_11T-09_11T-07*" that can be found within **Appendix C**. The P_11T-09_11T-07 line replacement has an estimated overall cost of $103,000.

5.7 Wastewater Master Plan Update

Sunrise recommends that Providence City update the wastewater master plan in the next five to ten years. This will allow the City to reevaluate infrastructure needs and identify relevant deficiencies. By identifying these deficiencies, it will be possible to begin planning for necessary improvement projects and subsequently calculate impact fees to address the City's wastewater needs. Sunrise estimates that the recommended update of the wastewater master plan will have an estimated cost of $50,000.

5.8 Cash Flow Analysis

A cash flow analysis was performed for all five outfall and treatment alternatives to see the potential impact on user rates by implementing these projects. The assumptions for this analysis were that:

- Residential and commercial connections and ERUs would grow at a 2.48% growth rate,
- Providence City's wastewater operation and maintenance expenses for 2017-2020 reflect what the City's future operating expenses will be,
- Operating expenses will increase by 3% each year,
- The current user rate structure based on water service diameter would continue to be used and rates would be increased in 2022 to fund the improvements,
- The impact fee of $2,433 currently covering the Logan City treatment impact fee would continue to be collected for all alternatives, but this impact fee would go towards the debt service or O&M for the treatment plant for the Hyrum and Providence treatment plant alternatives,
- Hyrum and Providence treatment plant alternatives replace the Logan sewer treatment fee with treatment operating expenses based on Hyrum City's treatment expenses,
- The loan terms include a payment start year of 2025, interest rate of 2.5%, loan length of 30 years,
- A reserve amount equal to 25% of the debt payment is collected each year for the sewer fund reserve account,
- Project costs resulting in a user rate $73.27/user/month equal to or higher would be awarded grant money to cover the remainder of the project costs. This user rate is based on the Median Adjusted Gross Income (MAGI) of Providence, which is currently $62,800, and Utah DEQ guidelines,
- Providence City does not qualify for other grant money to help with these improvements,
- The P_11T-09_11T-07 line replacement would be paid from the wastewater enterprise fund in 2023, and
- The Hyrum treatment alternative would have a $20,000 lift station operation and maintenance cost, and the other alternatives with lift stations would have a $10,000 lift station O&M cost.

The results of the cash flow analysis can be found in **Table 5.5**. The full analysis showing revenues, expenses, debt totals, and sewer fund reserves can be found in **Appendix D**.

Table 5.5 Cash Flow Analysis Results

Treatment Option	New User Rate	User Rate Increase	Project Cost	Loan Amount	Grant
1 - Logan Treatment - Do Nothing	$38.99	$0.00	$0	$0	$0
2A - Logan Treatment A	$47.02	$8.03	$5,484,000	$5,450,000	$0
2B - Logan Treatment B	$46.17	$7.18	$4,377,000	$4,272,000	$0
3 - Hyrum Treatment	$73.27	$34.28	$30,689,000	$21,970,000	$8,719,000
4 - Providence Treatment	$73.27	$34.28	$24,365,000	$20,640,000	$3,725,000

Operation and maintenance (O&M) expenses for each alternative were included in the cashflow analysis. Hyrum City's O&M expenses to operate their wastewater treatment plant were used to estimate the O&M costs for the Hyrum and Providence treatment options. It was assumed that the collection O&M costs for each alternative would be the same. The estimated O&M treatment costs for the Hyrum and Providence treatment options were slightly higher than the projected Logan City treatment cost.

The Hyrum and Providence treatment plant alternatives also have a much higher project cost and result in user rates equal to Providence's max user rate, as set by the MAGI, of $73.27/user/month. The MAGI is used by the State to determine how much a community can afford in terms of a user rate for utilities. Currently the MAGI is $62,800 for Providence, which is in the upper 50% for the state. Projects that will cause a user rate higher than the limit set by the MAGI receive grant money until the user rate is equal to the MAGI limit. The Hyrum treatment alternative has a higher loan amount than the Providence treatment alternative because the Providence treatment alternative has a higher treatment operation and maintenance expense. The Providence treatment plant will require an additional operator which is taken into account in the user rate thus increasing the amount of grant received to pay for the project.

The Logan treatment alternatives do not include any grant money as they all keep the new user rate below the MAGI number. The "do nothing" alternative was shown for reference and not considered a feasible alternative. The Logan treatment B alternative has a user rate that is $1.08 less than the Logan treatment A alternative.

5.9 Preferred Alternative – Alternative 2B – Logan Treatment Outfall B

After an evaluation of all five alternatives, Sunrise recommends that Alternative 2B, continuing with the Logan City treatment plant and installing a new shared outfall line with Logan City, be selected as the preferred alternative. This includes the following improvements:

- Outfall Line to Logan City – Shared,
- West Side Gravity Collection System,
- West Side Force Main to Existing System,
- West Side Lift Station, and
- P_11T-09_11T-07 Line Replacement.

The expense of paying for the capital cost to construct an entire treatment plant for the City and the slight increase to operation and maintenance costs with operating the plant is too high to be considered feasible. The City's user rates and/or impact fees would need to be increased significantly to pay for a new treatment plant compared with continuing to use the Logan WWTP. It is unlikely that the City would be able to obtain a significant amount of grant money as Providence is currently participating in a regional treatment system.

A shared outfall line with Logan City would allow some of the cost of installing that line to be shared with Logan City. This would allow the Golf Course Drive area to continue to gravity feed to the outfall line instead of needing a lift station to connect into Providence's collection system. This option also means that Logan City will likely continue to pay for infiltration flows in the outfall lines in the future. This alternative will result in the lowest impact to the existing user rate.

After the City discusses the outfall line improvements with Logan City, a different variation of Alternatives 2A and 2B may be found to be more beneficial to the City. The City could potentially install their own separate outfall line to the Logan lift station but have the Golf Course Drive area continue to flow to the existing shared outfall line with Logan. This would eliminate the need for the Golf Course Drive force main and lift station from the Alternative 2A improvements.

Also, if the structural condition of the existing outfall line allows, a shared outfall line could be installed while keeping the existing outfall line in operation. This could decrease the size of the new outfall line and provide some cost savings on the project.

This alternative encourages growth in the west side area of the City and would allow the City to annex and provide sewer to the surrounding unincorporated areas. This alternative does not require additional infrastructure for the Golf Course Drive area as it can continue to gravity feed into the shared outfall line. This area could be serviced with a regional lift station placed on 1700 South on the west side of HWY 165 and on the east side of the crossing of the Blacksmith Fork River. This lift station would service the area west of HWY 165 and would lift wastewater to the manhole located at the intersection HWY 165 and 1700 South. A concept layout of the sewer on the west side can be seen in **Exhibit 5.2**.

After reviewing the topography of the west area and possible piping routes to service this area, it is recommended that the incoming pipe invert delivering wastewater to this lift station be at approximately elevation 4472, 11' below surface elevation at 4483. East of the lift station, it is anticipated that the gravity collection line would stay approximately 11 feet deep to service the area to the Highway. The northern area should be serviced using 10" pipe or larger if appropriate, 8" pipe cannot be laid shallow enough to properly hit elevations to service this area. The southern area can be serviced with an 8" pipe, but it is recommended it be serviced with a 10" pipe or larger due to how close the 8" is to its design limits. The area should be surveyed prior to a full design. These elevations also work for other alternatives which utilize other pipe sizes.

The assumptions in this evaluation were that Providence would need to pay for all improvements to change treatment options. However, a more affordable option of changing wastewater

treatment facilities would be to combine efforts with Millville and Nibley to pump wastewater flows to Hyrum and expand the Hyrum WWTP. Additional coordination would need to occur with these cities to determine if this option is feasible.

6.0 USER RATE AND IMPACT FEE ANALYSIS

This section discusses the process of determining impact fees and user rates for the wastewater system. The impact fee analysis is based on the equivalent residential user (ERU) method that Logan City uses for the wastewater treatment impact fee. Three user rate structures were considered as requested by the City.

6.1 Impact Fee Analysis

This section discusses the method of implementing an impact fee and what the impact fee can cover. Currently, Providence City's impact fee only covers the treatment impact fee charged by Logan City per new ERU added to the system. The impact fee in this analysis is based on the same ERU method as that used by Logan City for the treatment impact fee.

6.1.1 Impact Fee Eligibility

An impact fee can only cover the cost of system improvements that are needed for future growth. Current system deficiencies cannot be fixed with impact fee funds. Improvements from the recommended alternative were reviewed to determine which portions of this alternative is impact fee eligible.

Providence's portion of the Logan City Treatment – Option B alternative has a total project cost of $4,867,000. Part of the existing outfall line to the Logan lift station is currently exceeding capacity. This portion consists of approximately 592 feet of the total 7,170 feet or 8.3%. This portion of the project totaling $325,972 is not impact fee eligible. The remainder of the outfall line replacement and the west side lift station, force main, and gravity line are for future growth and thus are impact fee eligible. The total impact fee eligible cost of each of these improvements is as follows:

- 21" Outfall Line to Lift Station (Providence Portion) - $3,622,028
- West Side Gravity Collection System - $395,000
- West Side Force Main to Existing System - $344,000
- West Side Lift Station (0.3 MGD) - $180,000

These improvements total $4,541,028. The improvements were based on the 20-year planning period and will be assessed to new growth in the City over the next 20 years.

6.1.2 Impact Fee Assessment Method

The Logan City treatment impact fee is assessed based on the number of equivalent residential units (ERU) that a connection is equal to. Since this assessment already occurs each time a new connection joins the system to determine the Logan City treatment impact fee, it is recommended that the City use this method for implementing an impact fee to fund wastewater improvements for future growth.

This impact fee assessment method is similar to the ERU based user rate method discussed in **Section 6.1**. An ERU based impact fee is charged by the total number of ERUs for a given connection. New residential connections and individual units in multi-family

connections would be considered one ERU. The sewer flow for new commercial connections would be estimated using flow data for similar connections and dividing the estimated flow by 245 gpd per ERU to get an equivalent ERU number for each commercial connection.

6.1.3 Impact Fee Assumptions

The following assumptions were used for the impact fee calculations:

- A loan amount of $4,541,028 to cover the impact fee eligible portion of the project,
- A grant amount of $0,
- An interest rate of 2.5%,
- A loan term of 20 years,
- A fee implementation year of 2022, and
- A loan start year of 2025.

The total cost of the impact fee eligible improvements including interest is $5,825,879.

6.1.4 Impact Fee Calculation

To calculate the impact fee, the projected ERUs for the planning period need to be estimated. Based on the ERU projection in **Table 3.3**, it is estimated that there will be 2,044 additional ERUs in the City in the next 20 years. It is estimated that there will be 1,810 additional residential ERUs and 234 additional commercial ERUs.

The impact fee was calculated by dividing the total cost of the improvements that were impact fee eligible ($5,825,879) by the number of ERUs (2,044) expected in the 20-year planning period. This results in an impact fee increase of $2,850/ERU for Providence's collection system. Adding the Logan treatment impact fee of $2,433 equals a total impact fee of $5,283/ERU.

6.2 User Rate Structures

This section discusses the three structures for assessing the wastewater user rate. The three user rate structures considered in the analysis were:

1. Water service diameter – current method,
2. Equivalent residential unit (ERU), and
3. Water service capacity.

6.2.1 User Rate – Water Service Diameter

Currently, Providence City is billing sewer connections based on the diameter of their water service connection. The base sewer user rate is for a 1-inch water service. For water service connections greater than 1-inch, the base sewer user rate is multiplied by the water service diameter to get the user rate for that connection size. For example, a user with a 4-inch water service connection would pay four times the base rate for their sewer user

rate. This user rate method means that residential users are being billed disproportionately higher than multi-family and commercial users.

6.2.2 User Rate – Equivalent Residential Unit (ERU)

An ERU based user rate is charged by the total number of ERUs for a given connection. All residential connections and individual units in multi-family areas would be counted as one ERU. All commercial connections and high usage residential connections would be assigned ERUs based on winter water metered flow rates. For commercial users with high flows, it is recommended that this assigned ERU value be reassessed on an annual basis. For other commercial users, it is recommended that this ERU value be reassessed every three years.

6.2.3 User Rate – Water Service Capacity

A water service capacity method is applied similarly to the water service diameter method. The base sewer user rate is for a 1-inch water service. For water service connections greater than 1-inch, the base sewer user rate is multiplied by the potential flow that can pass through the larger water service area compared to the 1-inch water service. Since the base residential water service is 1-inch in diameter, this user rate factor for larger water services is equal to the water service diameter squared. For example, a user with a 4-inch water service connection would pay sixteen times the base rate for their sewer user rate. This user rate charges users based on their potential for their sewer flow potential rather than actual sewer flows. A larger service size means that a user could potentially use water at a higher rate and thus have higher wastewater flows, but this does not account for users with oversized water service lines.

6.2.4 Recommended User Rate Structure

Sunrise recommends for the City to implement the equivalent residential unit (ERU) based user rate structure. The current method of assessing user rates by the water service diameter does not account for flow. This means that connections with higher flows like commercial users with high water usage are paying significantly less per gallon than residential connections. The ERU method addresses this by charging users based on their impact to the system. Connections with higher sewer flows would be charged for their higher flows.

Since winter water flows should be approximately equal to wastewater flows, this method allows the City to approximate wastewater flows per connection without the expense of installing wastewater flow meters on each connection.

6.3 User Rate Analysis

The same assumptions on connections, ERUs, revenues, expenses, and the reserve account from the cash flow analysis were assumed for the user rate analysis. The other assumed parameters for the user rate analysis include:

- A loan amount of $4,451,028 to cover the impact fee eligible portion of the project,
- A down payment from the sewer fund of $325,972 to cover the non-impact fee eligible portion of the project,

- A grant amount of $0,
- An interest rate of 2.5%,
- A loan term of 20 years,
- A rate implementation year of 2022,
- A loan start year of 2025, and
- An impact fee of $5,283.

The user rates for the Logan City Treatment – Option B alternative is given in **Table 6.1**. This table includes the considered user rate structures and associated base user rate. **Appendix E** shows the full impact fee and user rate analysis.

Table 6.1 User Rate and Impact Fee Comparison

User Rate Structure	New Base User Rate	User Rate Change
Water Service Diameter	$41.46	$2.47
ERU	$33.32	($5.67)
Water Service Capacity	$38.66	($0.33)

The ERU based user rate would result in a reduction in residential user rates. This shows that the commercial and multi-family users are underpaying for the wastewater flows they are contributing to the system. The water service capacity based user rate has a lower residential user rate than the water service diameter based rate. **Appendix F** shows what the user rate for each multi-family or non-residential connection would be for each user rate method.

The ERU based user rate assumed that all residential connections were equal to one ERU. However, based on winter water usage data, some households use significantly more water in the winter months and thus account for higher wastewater flows. Some of these high flows may be due to leaks that are not increasing wastewater flows. **Table 6.2** shows the breakdown of residential connections based on ERUs.

Table 6.2 Residential Connection Totals by ERUs

ERUs	# of Connections
1	1900
1.5	134
2	40
2.5	41
3-5	47
5.5-10	10
10.5-20	4
20.5+	3

Approximately 15% of residential connections have a winter water usage above 245 gpd and thus account for more than one ERU. The connection with the highest winter flow equals 35.5 ERUs. Providence could consider a tiered residential sewer wastewater structure based on winter water

usage similar to the water rate tiered structure or charging these users based on ERUs like commercial connections.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusion

After several months of analysis and research, Sunrise has the following conclusions with regards to Providence City's wastewater collection system:

- The majority of the collection system has sufficient capacity for the next 20 years.
- Two pipelines are showing capacity deficiencies. These lines are:
  - The Logan Outfall Line, which is the main outfall line between the main meter and the lift station on 1000 West and 1000 South
  - Pipe segment (pipe P_11T-09_11W)
- There is a need to provide wastewater services to the west side of Highway 165 to the city boundary.
- During the summer, there is an increase in wastewater flows measured that coincides with the time of year that canal water is flowing throughout the city and residents are actively irrigating.
- During this master planning effort, a need to provide a high-level consideration about wastewater treatment options was identified and thus included in the masterplan. These treatment options were as follows:
  - Logan Treatment
  - Hyrum Treatment
  - Providence Treatment
- Providence currently bases the sewer monthly bills on culinary water meter size. It was calculated that the residential users are subsidizing the commercial users.

All recommended improvements to the City's existing wastewater infrastructure are shown in **Exhibit 5.2** *"Alternative 2B: Logan Treatment & 21" Outfall Line."*

7.2 Recommendations

Based on the findings from this study and the results of the cash flow analysis, Sunrise Engineering recommends that Providence City adopt the following recommendations.

- Proceed with Alternative 2B
  - Continue to have Logan treat wastewater
  - Upgrade outfall line between wastewater meter and lift station
- Upgrade pipe segment (pipe P_11T-09-11W) to a 15" line
- Provide the backbone of the collection, lift station, and force main to the unsewered area west of Highway 165
- Base future monthly sewer bills on ERUs instead of culinary meter size
- Start collecting a collection impact fee for the additional capacity built into the improvements listed above that are sized for future growth
- Providence City may need to adopt an ordinance to fine people with sump pump connections to the sewer to potentially reduce I&I

7.2.1 Capital Improvement Projects

The recommended improvement projects and their associated costs are as follows:

- Providence's Portion of 21" Shared Outfall Line to Logan City - $3,948,000 ($3,622,028 Impact Fee Eligible)
- West Side Gravity Collection System - $395,000 (All Impact Fee Eligible)
- West Side Force Main to Existing System - $344,000 (All Impact Fee Eligible)
- West Side Lift Station - $180,000 (All Impact Fee Eligible)
- P_11T-09_11T-07 Line Replacement - $103,000 ($0 Impact Fee Eligible)
- Total - $4,970,000 ($4,541,028 Impact Fee Eligible)

Sunrise has completed a Preliminary Engineer's Opinion of Probable Cost for each improvement project. These cost estimate overviews can be found in **Appendix C**. The unit costs used for all gravity main improvement project cost estimates were compiled from an extensive record of Sunrise project bid tabulations. All costs associated with the estimates are in 2020 dollars. To account for inflation as time goes on, Providence City should adjust all cost estimates according to the cost of living and Heavy Construction Cost Index factors.

7.2.2 Impact Fee and User Rate

An impact fee and user rate analysis were performed for the recommended alternative. The impact fee eligible portion of the project including interest equals $5,825,879. The total number of new ERUs projected in the next 20 years is 2044 ERUs. Sunrise recommends that Providence City implement an ERU based impact fee and an ERU based user rate. The current and proposed impact fees and user rates per ERU are shown in **Table 7.1**.

Table 7.1 Existing and Proposed Impact Fees and User Rates

	Treatment Impact Fee	Collection Impact Fee	Total Impact Fee	User Rate
Existing	$2,433	$0	$2,433	$38.99
Proposed	$2,433	$2,850	$5,283	$33.32

Note: Fees above are based on 1 ERU, which equals 245 gpd.

Exhibits

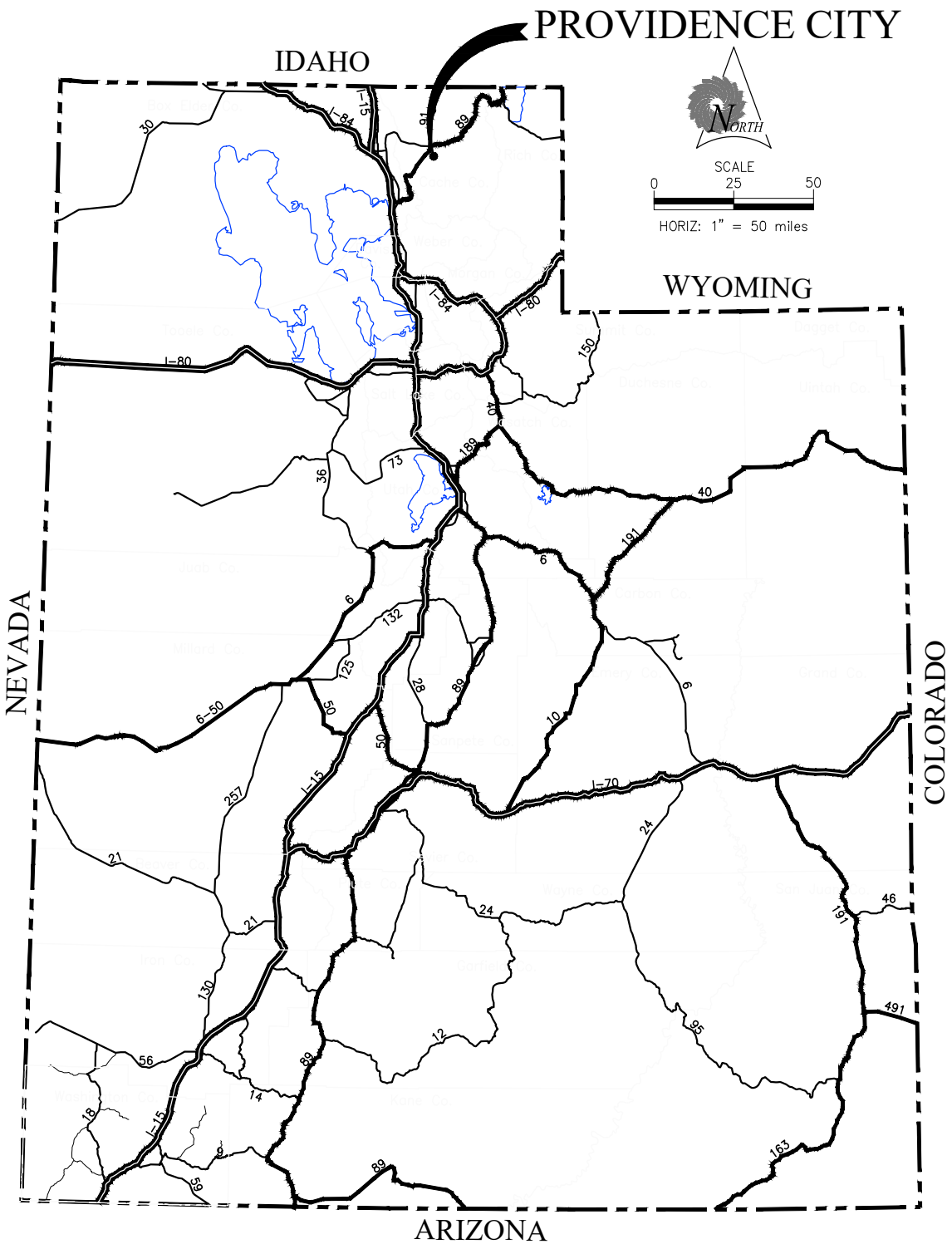

EXHIBIT 1.1
AREA MAP
PROVIDENCE CITY WASTEWATER
MASTER PLAN

SUNRISE ENGINEERING
2100 NORTH MAIN STREET
NORTH LOGAN, UTAH 84341
TEL 435.563.3734
www.sunrise-eng.com

P:\Providence\07618 WW Masterplan 2020\DWG\Sheets\STATE MAP.dwg May 03, 2021 8:42pm sdwood

N

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0 375 750 1,500

Feet

EXHIBIT 2.1

2020 EXISTING WASTEWATER COLLECTION SYSTEM

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

LEGEND

Gravity Main

RUN_DIAM

- 8" SEWER LINE
- 10" SEWER LINE
- 12" SEWER LINE
- 15" SEWER LINE
- 18" SEWER LINE
- City Limits
- Future City Limits

SUNRISE ENGINEERING

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NORTH LOGAN, UT 84341
TEL 435.563.3734
www.sunrise-eng.com

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, ...

LEGEND

- City Limits
- Future City Limits
- AGR - AGRICULTURAL DISTRICT
- SFE - SINGLE FAMILY ESTATE DISTRICT
- SFL - SINGLE FAMILY LARGE DISTRICT
- SFT - SINGLE FAMILY TRADITIONAL DISTRICT
- SFR - SINGLE FAMILY RESIDENTIAL DENSITY DISTRICT
- SFM - SINGLE FAMILY MEDIUM DENSITY DISTRICT
- SFH - SINGLE FAMILY HIGH DENSITY DISTRICT
- SMH - SINGLE FAMILY MOBILE HOME DISTRICT
- MFR - MULTIFAMILY RESIDENTIAL DENSITY DISTRICT
- MFM - MULTIFAMILY MEDIUM DENSITY DISTRICT
- MFH - MULTIFAMILY HIGH DENSITY DISTRICT
- MXD - MIXED USE DISTRICT
- LCR - LIFE CYCLE RESIDENTIAL
- CND - COMMERCIAL NEIGHBORHOOD DISTRICT
- CGD - COMMERCIAL GENERAL DISTRICT
- CHD - COMMERCIAL HIGHWAY DISTRICT
- PUB - PUBLIC USE DISTRICT

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Feet

Providence City
Utah

EXHIBIT 3.1

2020 PROVIDENCE FUTURE LAND USE / ZONING MAP

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

SUNRISE ENGINEERING

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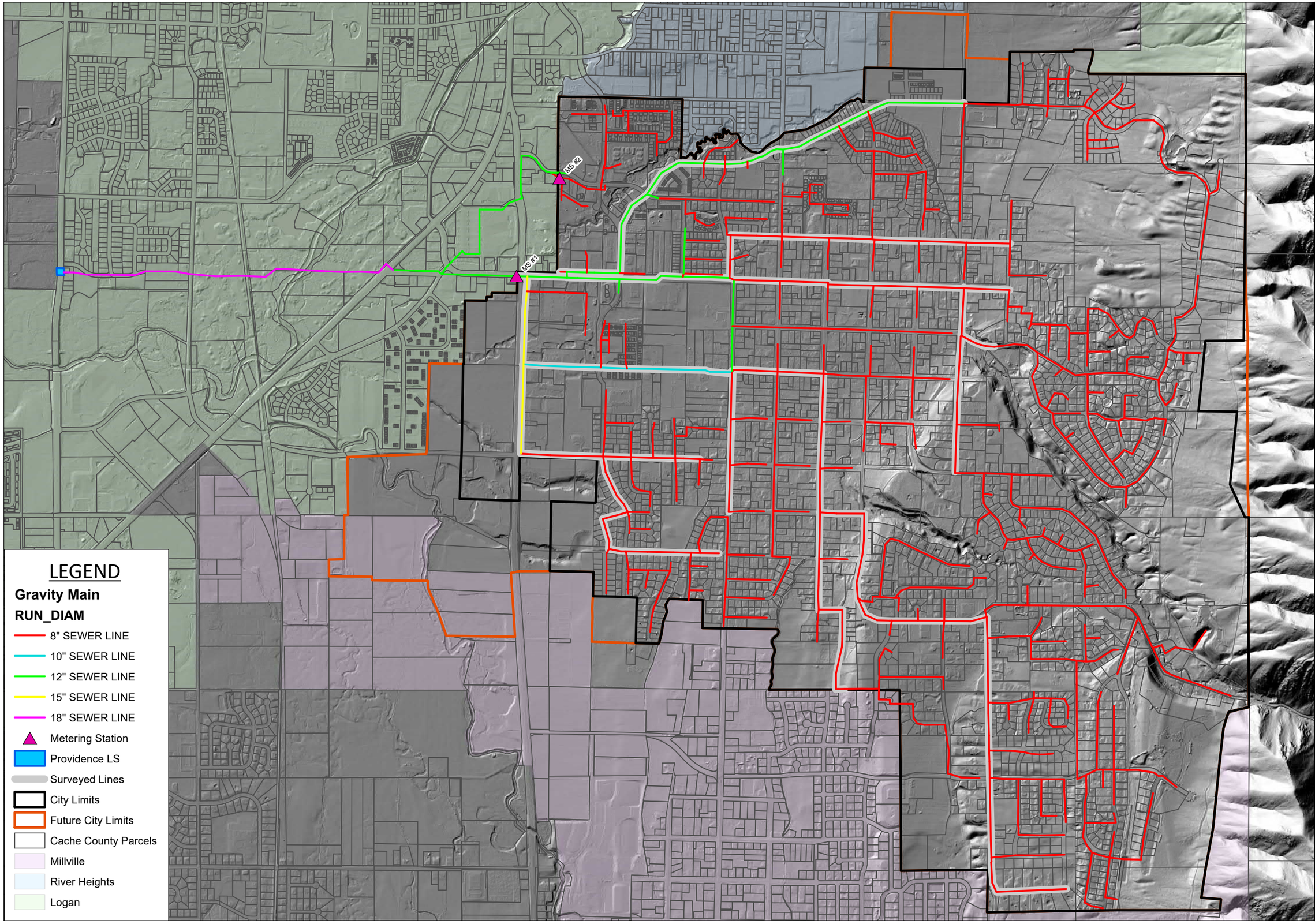
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, ...



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Feet

Providence City
Utah

EXHIBIT 4.1
2020 EXISTING CRITICAL INFRASTRUCTURE
PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

LEGEND

Gravity Main

RUN_DIAM

- 8" SEWER LINE
- 10" SEWER LINE
- 12" SEWER LINE
- 15" SEWER LINE
- 18" SEWER LINE
- Metering Station
- Providence LS
- Surveyed Lines
- City Limits
- Future City Limits
- Cache County Parcels
- Millville
- River Heights
- Logan

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Feet

EXHIBIT 4.2

2020 EXISTING COLLECTION SYSTEM - PIPE CAPACITY DEFICIENES

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

LEGEND

Gravity Main

MAX_DOVERD

- d/D < 0.50
- 0.50 < d/D < 0.70
- d/D > 0.70

- Providence LS
- City Limits
- Future City Limits
- Surveyed Lines
- Cache County Parcels
- Millville
- River Heights
- Logan

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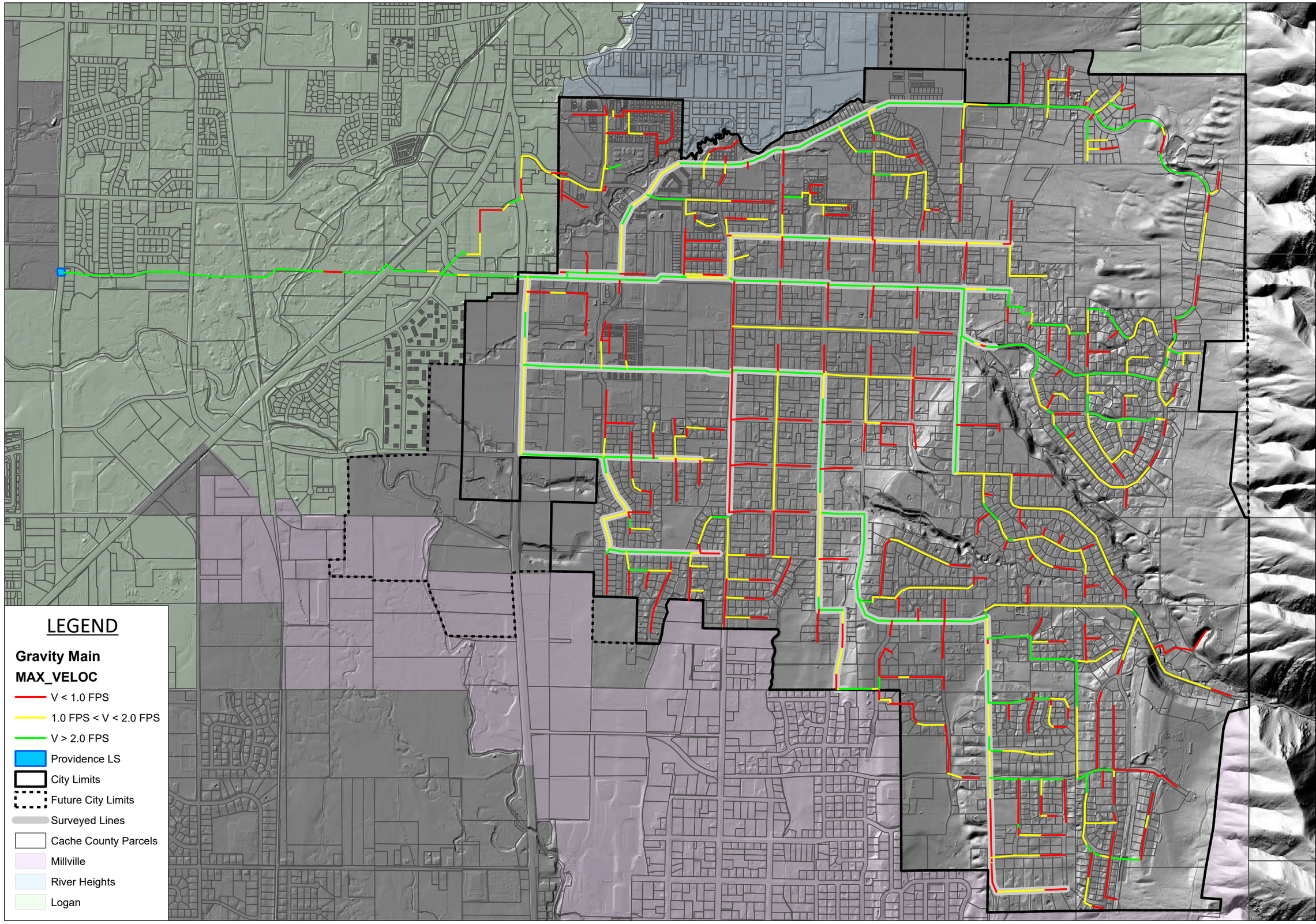

EXHIBIT 4.3

2020 EXISTING COLLECTION SYSTEM - PIPE VELOCITY DEFICIENCIES

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

SUNRISE ENGINEERING

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NORTH LOGAN, UT 84341
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www.sunrise-eng.com

N

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0 375 750 1,500

Feet

Providence City
Utah

EXHIBIT 4.4

2030 COLLECTION SYSTEM - PIPE CAPACITY DEFICIENCIES

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

LEGEND

Gravity Main

MAX_DOVERD

- d/D < 0.50
- 0.50 < d/D < 0.70
- d/D > 0.70
- Providence LS
- City Limits
- Future City Limits
- Surveyed Lines
- Cache County Parcels
- Projected Growth Areas
- Millville
- River Heights
- Logan

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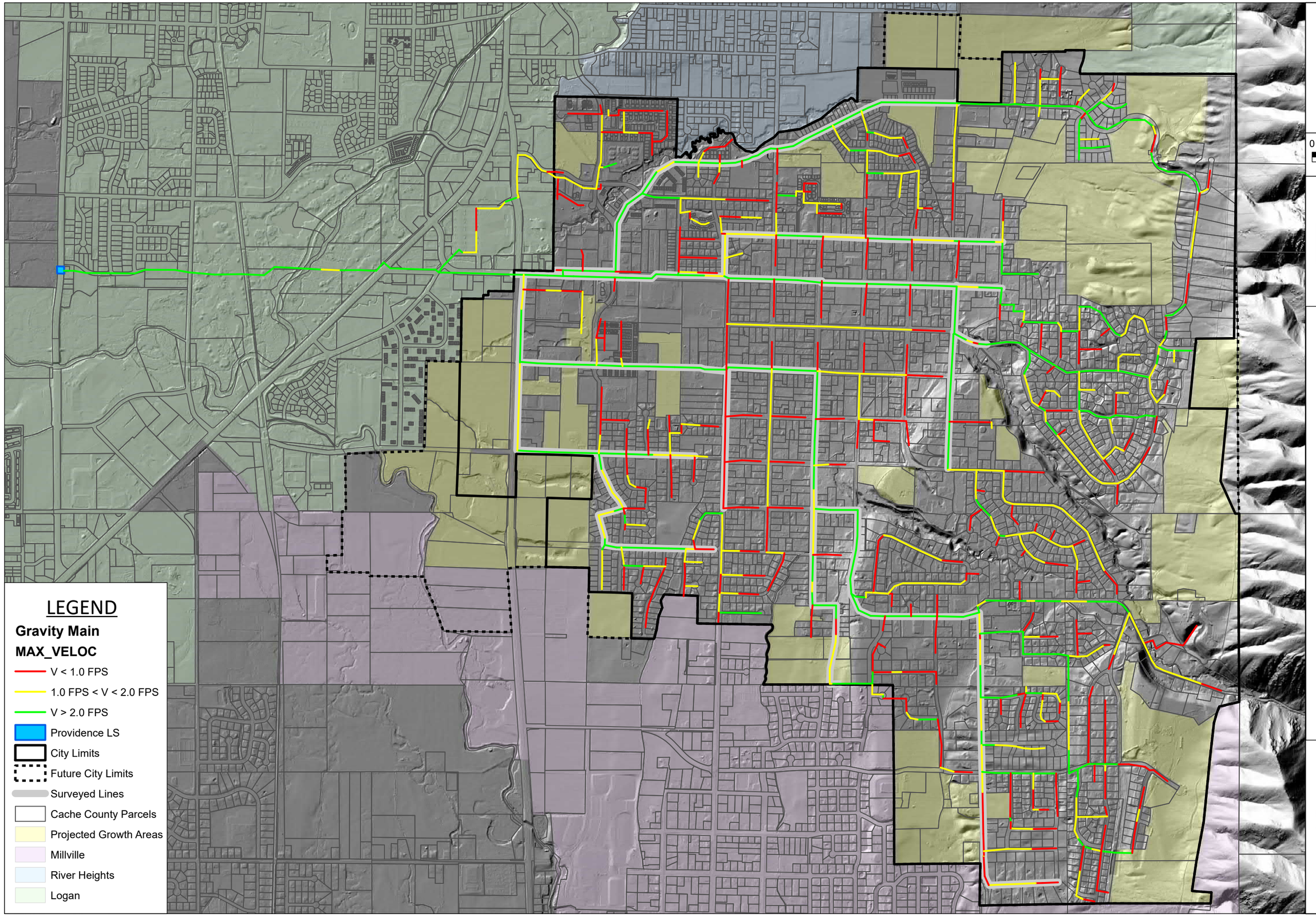

EXHIBIT 4.5

2030 COLLECTION SYSTEM - PIPE VELOCITY DEFICIENCIES

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

SUNRISE ENGINEERING

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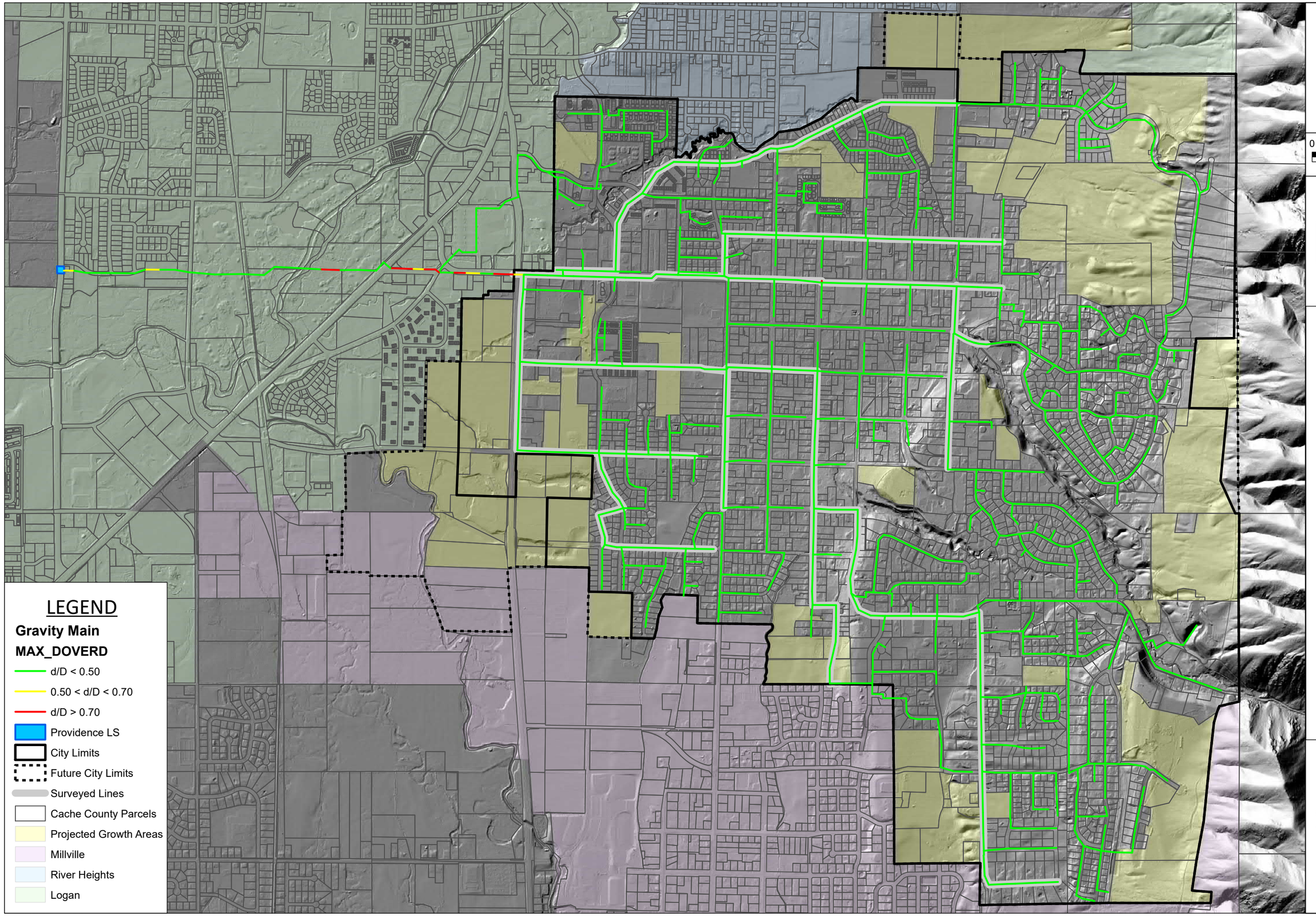

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Feet

Providence City
Utah

EXHIBIT 4.6

2040 COLLECTION SYSTEM - PIPE CAPACITY DEFICIENCIES

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

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N

W E

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0 375 750 1,500

Feet

Providence City
Utah

EXHIBIT 4.7

2040 COLLECTION SYSTEM - PIPE VELOCITY DEFICIENCIES

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

LEGEND

Gravity Main

MAX_DOVERD

- d/D < 0.50
- 0.50 < d/D < 0.70
- d/D > 0.70
- Providence LS
- City Limits
- Future City Limits
- Surveyed Lines
- Cache County Parcels
- Projected Growth Areas
- Millville
- River Heights
- Logan

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ENGINEERING

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LOGAN CITY
LIFT STATION
- SeMH02245

IW-26

IW-19

IW-26-METER

N13-11

S19-21

LEGEND

- ! Critical Manholes
- West Side Force Main
- West Side Gravity Lines
- West Side Gravity Lines (Development Driven)
- New OutFall Line
- Golf Course Force Main
- P_11T-09_11T-07 Line
- Existing Collection System
- West Side LS
- Providence LS
- Golf Course LS
- City Limits
- Future City Limits
- Millville
- River Heights
- Logan

N

W E

S

0 375 750 1,500

Feet

EXHIBIT 5.1

ALTERNATIVE 2A: LOGAN TREATMENT & 18" OUTFALL LINE

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

SUNRISE ENGINEERING

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www.sunrise-eng.com

LOGAN CITY LIFT STATION - SeMH02245

IW-26

IW-19

IW-26-METER

S19-21

LEGEND

- ! Critical Manholes
- West Side Force Main
- West Side Gravity Lines
- West Side Gravity Lines (Development Driven)
- New OutFall Line
- P_11T-09_11T-07 Line
- Existing Collection System
- West Side LS
- Providence LS
- City Limits
- Future City Limits
- Millville
- River Heights
- Logan

N

W E

S

0 375 750 1,500

Feet

Providence City Utah

EXHIBIT 5.2

ALTERNATIVE 2B: LOGAN TREATMENT & 21" OUTFALL LINE

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

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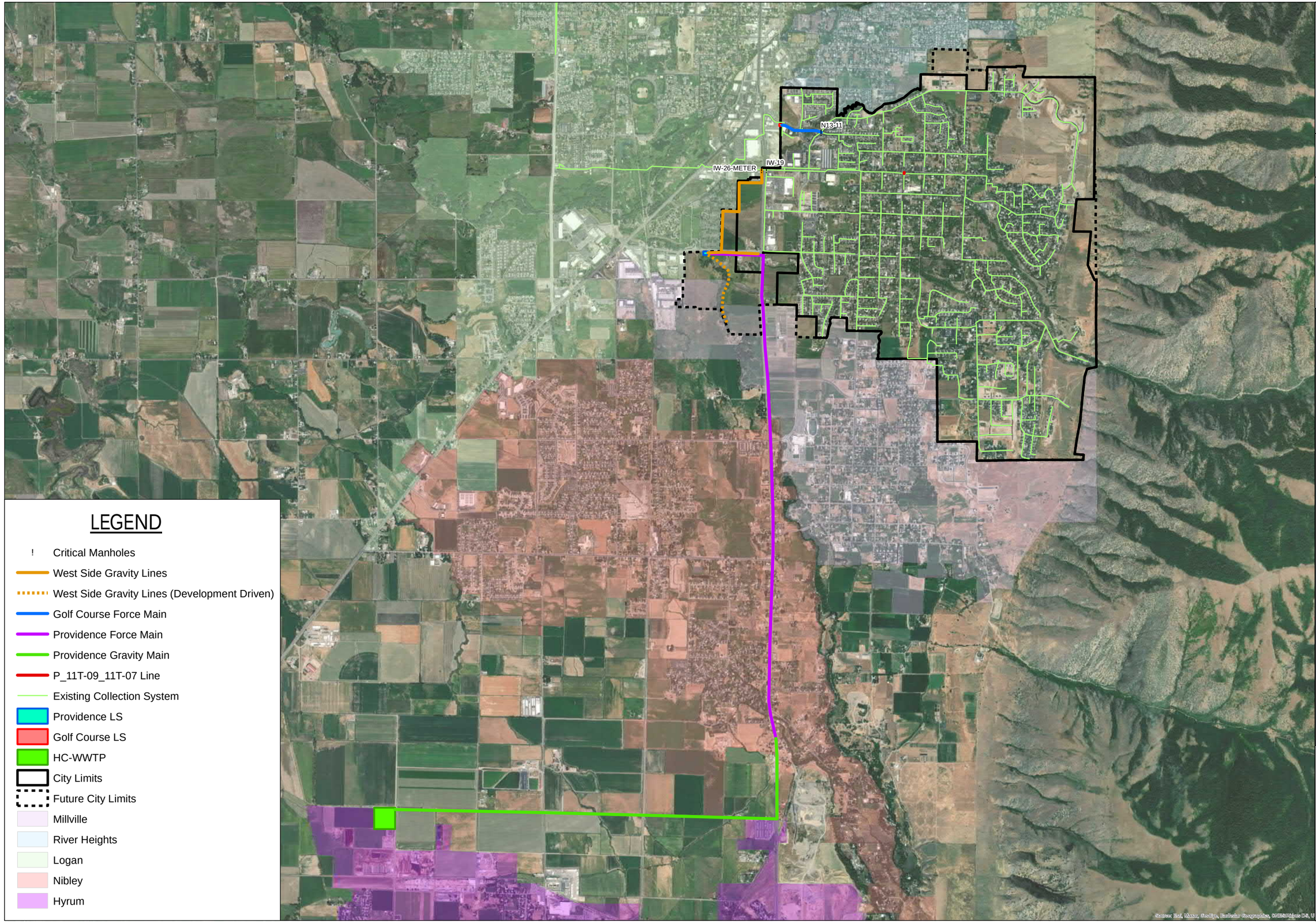

LEGEND

- ! Critical Manholes
- West Side Gravity Lines
- West Side Gravity Lines (Development Driven)
- Golf Course Force Main
- Providence Force Main
- Providence Gravity Main
- P_11T-09_11T-07 Line
- Existing Collection System
- Providence LS
- Golf Course LS
- HC-WWTP
- City Limits
- Future City Limits
- Millville
- River Heights
- Logan
- Nibley
- Hyrum

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Feet

Providence City
Utah

EXHIBIT 5.3
ALTERNATIVE 3: HYRUM TREATMENT
PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

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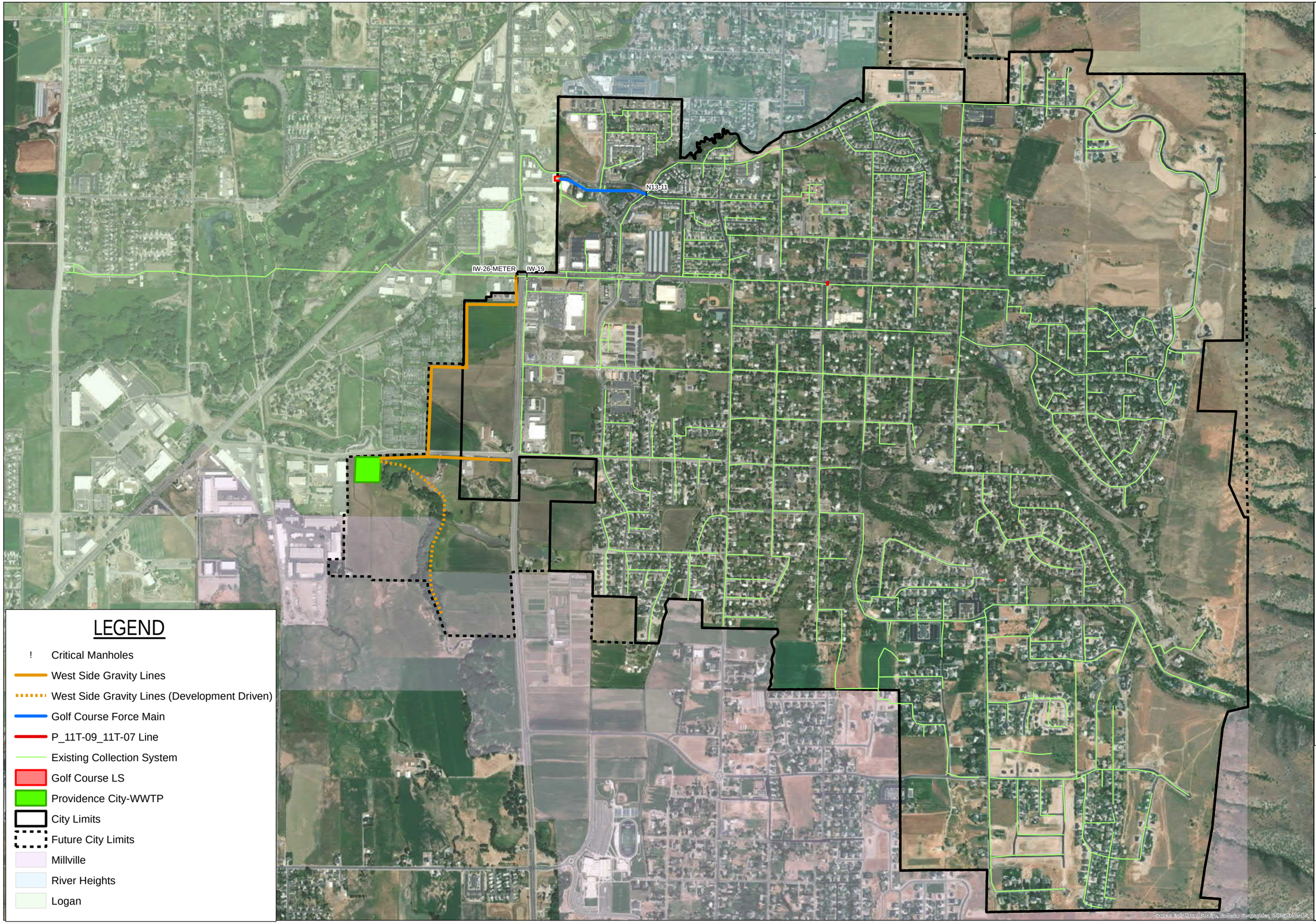

LEGEND

- ! Critical Manholes
- West Side Gravity Lines
- West Side Gravity Lines (Development Driven)
- Golf Course Force Main
- P_11T-09_11T-07 Line
- Existing Collection System
- Golf Course LS
- Providence City-WWTP
- City Limits
- Future City Limits
- Millville
- River Heights
- Logan

N

W E

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0 375 750 1,500

Feet

Providence City Utah

EXHIBIT 5.4

ALTERNATIVE 4: PROVIDENCE TREATMENT - 1.5 MGD WWTP

PROVIDENCE CITY WASTEWATER/ SEWER MASTER PLAN

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NORTH LOGAN, UT 84341
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Appendix A – Model Results

2020 Model Results for Surveyed Lines and Outfall Line

		ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
1	✓	P_E19-18_E19-20	E19-20	E19-18	0.005	00:02 hr	1.471
2	✓	P_E19-18_E19-17	E19-18	E19-17	0.006	00:03 hr	1.308
3	✓	P_E19-17_E19-15	E19-17	E19-15	0.019	00:07 hr	1.928
4	✓	P_E19-15_E19-14	E19-15	E19-14	0.019	00:07 hr	2.186
5	✓	P_E19-14_E19-11	E19-14	E19-11	0.026	00:09 hr	2.373
6	✓	P_E19-11_E19-08	E19-11	E19-08	0.037	00:11 hr	2.286
7	✓	P_E19-08_E19-05	E19-08	E19-05	0.131	00:42 hr	2.173
8	✓	P_E19-05_E19-02	E19-05	E19-02	0.131	00:44 hr	2.473
9	✓	P_E19-02_E19-01	E19-02	E19-01	0.132	00:46 hr	2.331
10	✓	P_E19-01_S19-21	E19-01	S19-21	0.132	00:48 hr	2.189
11	✓	P_S19-21_S19-19	S19-21	S19-19	0.132	00:49 hr	1.329
12	✓	P_S19-19_S19-15	S19-19	S19-15	0.133	00:53 hr	1.180
13	✓	P_S19-15_S19-13	S19-15	S19-13	0.134	00:57 hr	1.175
14	✓	P_S19-13_S19-12	S19-13	S19-12	0.135	01:01 hr	1.239
15	✓	P_S19-12_S19-11	S19-12	S19-11	0.135	01:02 hr	3.342
16	✓	P_S11-21_S11-19	S11-21	S11-19	0.240	09:03 hr	3.199
17	✓	P_S11-19_S11-17	S11-19	S11-17	0.253	09:04 hr	4.654
18	✓	P_S11-17_S11-15	S11-17	S11-15	0.253	09:05 hr	5.976
19	✓	P_S11-15_S11-13	S11-15	S11-13	0.254	09:06 hr	4.023
20	✓	P_S11-13_S11-11	S11-13	S11-11	0.262	09:08 hr	3.991
21	✓	P_S11-11_S11-09	S11-11	S11-09	0.263	09:10 hr	4.002
22	✓	P_S11-09_S11-07	S11-09	S11-07	0.291	09:12 hr	3.052
23	✓	P_S11-07_S11-05	S11-07	S11-05	0.304	09:15 hr	2.439
24	✓	P_S11-05_S11-03	S11-05	S11-03	0.304	09:17 hr	2.835
25	✓	P_S11-03_S11-01	S11-03	S11-01	0.304	09:18 hr	3.477
26	✓	P_S11-01_S19-11	S11-01	S19-11	0.305	09:20 hr	3.024
27	✓	P_B11-01_S11-09	B11-01	S11-09	0.019	00:00 hr	1.231
28	✓	P_19B-01_E19-08	19B-01	E19-08	0.083	00:39 hr	2.671
29	✓	P_19M-07_19M-05	19M-07	19M-05	0.064	00:28 hr	1.907
30	✓	P_19M-05_19M-03	19M-05	19M-03	0.066	00:30 hr	1.716
31	✓	P_19M-08_19M-07	19M-08	19M-07	0.058	00:26 hr	3.105
32	✓	P_19-01_19M-07	19-01	19M-07	0.006	00:04 hr	2.017
33	✓	P_19D-15_19D-13	19D-15	19D-13	0.000	00:00 hr	0.000
34	✓	P_19D-13_19M-15	19D-13	19M-15	0.031	00:21 hr	1.471
35	✓	P_19M-15_19M-13	19M-15	19M-13	0.037	00:22 hr	2.525
36	✓	P_19M-13_19M-11	19M-13	19M-11	0.037	00:24 hr	3.014
37	✓	P_19M-11_19M-09	19M-11	19M-09	0.038	00:25 hr	2.678
38	✓	P_19M-09_19M-08	19M-09	19M-08	0.058	00:25 hr	3.024
39	✓	P_METER-NO-FLOW_19D-13	METER-NO-FLOW	19D-13	0.029	00:21 hr	1.075
40	✓	P_19T-11_19T-09	19T-11	19T-09	0.001	00:04 hr	0.638
41	✓	P_19T-09_19T-07	19T-09	19T-07	0.003	00:07 hr	0.800
42	✓	P_19T-07_19T-05	19T-07	19T-05	0.005	00:10 hr	0.896
43	✓	P_19T-05_19T-03	19T-05	19T-03	0.007	00:13 hr	0.929
44	✓	P_19T-03_19T-01	19T-03	19T-01	0.009	00:17 hr	0.682
45	✓	P_19T-01_S11-19	19T-01	S11-19	0.012	09:03 hr	0.774
46	✓	P_I-27_I-25	I-27	I-25	0.215	01:10 hr	3.444
47	✓	P_I-25_I-23	I-25	I-23	0.216	01:12 hr	3.479
48	✓	P_I-23_I-21	I-23	I-21	0.237	01:14 hr	3.501
49	✓	P_I-21_S11-21	I-21	S11-21	0.240	09:02 hr	2.963
50	✓	P_19B-05_19B-03	19B-05	19B-03	0.079	00:35 hr	1.797
51	✓	P_19B-03_19B-01	19B-03	19B-01	0.081	00:38 hr	1.775
52	✓	P_19M-03_19M-01	19M-03	19M-01	0.069	00:31 hr	1.658
53	✓	P_19M-01_19B-07	19M-01	19B-07	0.069	00:32 hr	1.881
54	✓	P_19S-01_19B-07	19S-01	19B-07	0.005	00:02 hr	0.801
55	✓	P_19B-07_19B-05	19B-07	19B-05	0.078	00:34 hr	1.469
56	✓	P_IW-19_IW-22	IW-19	IW-22	1.115	10:04 hr	4.278
57	✓	P_IW-22_IW-26-METER	IW-22	IW-26-METER	1.115	10:04 hr	3.595
58	✓	P_S19-11_S19-07	S19-11	S19-07	0.440	09:23 hr	1.877
59	✓	P_S19-07_S19-04	S19-07	S19-04	0.440	09:26 hr	2.019
60	✓	P_S19-04_S19-03	S19-04	S19-03	0.461	09:28 hr	1.659
61	✓	P_S19-03_S19-02	S19-03	S19-02	0.463	09:30 hr	1.737
62	✓	P_S19-02_S19-01	S19-02	S19-01	0.463	09:29 hr	1.295
63	✓	P_S19-01_IW-19	S19-01	IW-19	0.475	09:32 hr	1.463
64	✓	P_IW-12_IW-13	IW-12	IW-13	0.636	10:00 hr	3.910
65	✓	P_IW-13_IW-16	IW-13	IW-16	0.636	10:03 hr	3.194
66	✓	P_IW-16_IW-19	IW-16	IW-19	0.638	10:06 hr	3.105
67	✓	P_IW-04_IW-05	IW-04	IW-05	0.370	09:57 hr	3.404
68	✓	P_IW-05_IW-09	IW-05	IW-09	0.370	10:02 hr	2.920
69	✓	P_IW-09_IW-12	IW-09	IW-12	0.370	10:01 hr	2.722
70	✓	P_W13-05_W13-03	W13-05	W13-03	0.261	01:04 hr	2.401

		ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
71	✓	P_W13-03_W13-01	W13-03	W13-01	0.263	01:09 hr	2.342
72	✓	P_13B-01_W13-01	13B-01	W13-01	0.001	00:00 hr	0.540
73	✓	P_W13-01_IW-12	W13-01	IW-12	0.265	01:07 hr	2.567
74	✓	P_N13-07_N13-04	N13-07	N13-04	0.249	00:58 hr	1.831
75	✓	P_N13-04_W13-07	N13-04	W13-07	0.252	01:02 hr	1.883
76	✓	P_IW-01_IW-04	IW-01	IW-04	0.369	09:57 hr	3.053
77	✓	P_W13-07_W13-05	W13-07	W13-05	0.261	01:06 hr	2.846
78	✓	P_I-03_I-01	I-03	I-01	0.367	09:53 hr	2.717
79	✓	P_I-01_IW-01	I-01	IW-01	0.368	09:55 hr	3.223
80	✓	P_N13-09_N13-07	N13-09	N13-07	0.239	00:55 hr	2.172
81	✓	P_N13-11_N13-09	N13-11	N13-09	0.235	00:52 hr	1.888
82	✓	P_N13-13_N13-11	N13-13	N13-11	0.203	00:49 hr	1.805
83	✓	P_N13-15_N13-13	N13-15	N13-13	0.179	00:46 hr	1.574
84	✓	P_N13-23_N13-21	N13-23	N13-21	0.166	00:39 hr	3.764
85	✓	P_N13-21_N13-19	N13-21	N13-19	0.166	00:40 hr	3.318
86	✓	P_N13-19_N13-17	N13-19	N13-17	0.171	00:41 hr	2.116
87	✓	P_N13-17_N13-15	N13-17	N13-15	0.179	00:43 hr	2.776
88	✓	P_N13-29_N13-27	N13-29	N13-27	0.166	00:37 hr	3.050
89	✓	P_N13-27_N13-25	N13-27	N13-25	0.166	00:39 hr	3.130
90	✓	P_N13-31_N13-29	N13-31	N13-29	0.163	00:35 hr	3.500
91	✓	P_N13-25_N13-23	N13-25	N13-23	0.166	00:38 hr	2.341
92	✓	P_Z-17_Z-15	Z-17	Z-15	0.060	00:26 hr	2.694
93	✓	P_Z-15_Z-13	Z-15	Z-13	0.060	00:26 hr	2.403
94	✓	P_Z-13_Z-11	Z-13	Z-11	0.079	00:28 hr	2.241
95	✓	P_N13-37_N13-35	N13-37	N13-35	0.158	00:33 hr	3.071
96	✓	P_N13-35_N13-33	N13-35	N13-33	0.161	00:34 hr	3.124
97	✓	P_N13-33_N13-31	N13-33	N13-31	0.163	00:35 hr	2.866
98	✓	P_Z-07_Z-05	Z-07	Z-05	0.116	00:31 hr	2.090
99	✓	P_Z-05_N13-37	Z-05	N13-37	0.119	00:34 hr	2.520
100	✓	P_Z-11_Z-09	Z-11	Z-09	0.081	00:29 hr	2.556
101	✓	P_Z-09_Z-07	Z-09	Z-07	0.081	00:29 hr	1.579
102	✓	P_9T-35_9T-34	9T-35	9T-34	0.008	00:09 hr	0.644
103	✓	P_9T-34_9T-33	9T-34	9T-33	0.008	00:10 hr	1.829
104	✓	P_9T-33_9T-31	9T-33	9T-31	0.010	00:12 hr	1.597
105	✓	P_9T-31_9T-29	9T-31	9T-29	0.012	00:12 hr	1.815
106	✓	P_9T-29_9T-27	9T-29	9T-27	0.013	00:15 hr	1.092
107	✓	P_9T-27_9T-25	9T-27	9T-25	0.014	00:18 hr	1.176
108	✓	P_9T-25_9T-23	9T-25	9T-23	0.018	00:20 hr	1.527
109	✓	P_9T-23_9T-21	9T-23	9T-21	0.020	00:22 hr	1.596
110	✓	P_9T-21_9T-19	9T-21	9T-19	0.024	00:23 hr	3.862
111	✓	P_9T-19_9T-17	9T-19	9T-17	0.028	00:26 hr	1.038
112	✓	P_9T-17_9T-15	9T-17	9T-15	0.030	00:29 hr	1.429
113	✓	P_9T-15_9T-13	9T-15	9T-13	0.035	00:31 hr	2.080
114	✓	P_9T-13_9T-11	9T-13	9T-11	0.073	00:33 hr	3.231
115	✓	P_9T-11_9T-07	9T-11	9T-07	0.100	00:36 hr	1.564
116	✓	P_9T-07_9T-05	9T-07	9T-05	0.100	00:40 hr	1.676
117	✓	P_3T-01_9T-05	3T-01	9T-05	0.005	00:06 hr	0.884
118	✓	P_9T-05_9T-03	9T-05	9T-03	0.107	00:45 hr	1.450
119	✓	P_9T-03_9T-02	9T-03	9T-02	0.107	00:44 hr	1.613
120	✓	P_9T-02_I-09	9T-02	I-09	0.110	00:47 hr	1.442
121	✓	P_11T-03_11T-01	11T-03	11T-01	0.215	09:40 hr	3.217
122	✓	P_11T-01_I-11	11T-01	I-11	0.216	09:42 hr	2.797
123	✓	P_I-11_I-09	I-11	I-09	0.237	09:43 hr	2.135
124	✓	P_11T-21_11T-19	11T-21	11T-19	0.194	09:26 hr	3.070
125	✓	P_11T-19_11T-17	11T-19	11T-17	0.195	09:28 hr	3.143
126	✓	P_11T-17_11T-15	11T-17	11T-15	0.198	09:30 hr	3.523
127	✓	P_11T-15_11T-13	11T-15	11T-13	0.200	09:31 hr	3.238
128	✓	P_11T-13_11T-11	11T-13	11T-11	0.205	09:32 hr	3.688
129	✓	P_11T-11_11T-09	11T-11	11T-09	0.205	09:37 hr	3.454
130	✓	P_11T-09_11T-05	11T-07	11T-05	0.209	09:39 hr	3.720
131	✓	P_11T-05_11T-03	11T-05	11T-03	0.211	09:39 hr	3.797
132	✓	P_11T-09_11T-07	11T-09	11T-07	0.209	09:36 hr	0.597
133	✓	P_I-04_I-03	I-04	I-03	0.366	09:55 hr	2.399
134	✓	P_W5A-01_I-04	W5A-01	I-04	0.019	00:10 hr	2.734
135	✓	P_I-09_I-07	I-09	I-07	0.347	09:51 hr	1.754
136	✓	P_I-07_I-05	I-07	I-05	0.347	09:51 hr	1.950
137	✓	P_I-05_I-04	I-05	I-04	0.347	09:51 hr	2.482
138	✓	P_W5B-03_W5B-01	W5B-03	W5B-01	0.000	00:01 hr	0.620
139	✓	P_11E-03_11E-01	11E-03	11E-01	0.025	00:19 hr	2.699
140	✓	P_11E-01_11T-21	11E-01	11T-21	0.027	00:20 hr	1.559

		ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
141	✓	P_11T-26_11T-25	11T-26	11T-25	0.071	00:31 hr	3.146
142	✓	P_11T-25_11T-23	11T-25	11T-23	0.164	09:22 hr	3.849
143	✓	P_11T-23_11T-21	11T-23	11T-21	0.165	09:26 hr	3.736
144	✓	P_11F-01_11T-25	11F-01	11T-25	0.092	09:21 hr	3.548
145	✓	P_11T-27_11T-26	11T-27	11T-26	0.071	00:31 hr	2.200
146	✓	P_11F-03_11F-01	11F-02	11F-01	0.092	09:21 hr	1.519
147	✓	P_11F-03_11F-02	11F-03	11F-02	0.092	09:19 hr	1.339
148	✓	P_11F-02_11F-03	11F-03	11F-02	0.000	00:00 hr	0.000
149	✓	P_11F-03_11F-04	11F-04	11F-03	0.092	09:21 hr	5.107
150	✓	P_11T-37_11T-35	11T-37	11T-35	0.063	00:25 hr	2.184
151	✓	P_11T-35_11T-33	11T-35	11T-33	0.067	00:27 hr	2.849
152	✓	P_11T-33_11T-31	11T-33	11T-31	0.069	00:28 hr	4.526
153	✓	P_11T-31_11T-29	11T-31	11T-29	0.069	00:31 hr	2.716
154	✓	P_11T-29_11T-27	11T-29	11T-27	0.071	00:30 hr	4.070
155	✓	P_11T-39_11T-37	11T-39	11T-37	0.061	00:23 hr	2.396
156	✓	P_I-31_I-29	I-31	I-29	0.191	01:04 hr	3.574
157	✓	P_I-29_I-27	I-29	I-27	0.191	01:08 hr	1.859
158	✓	P_I-35_I-33	I-35	I-33	0.187	01:01 hr	3.629
159	✓	P_I-33_I-31	I-33	I-31	0.189	01:03 hr	3.694
160	✓	P_I-39_I-37	I-39	I-37	0.185	00:57 hr	1.660
161	✓	P_I-37_I-35	I-37	I-35	0.186	00:59 hr	3.192
162	✓	P_39T-03_39T-01	39T-03	39T-01	0.023	00:37 hr	1.448
163	✓	P_39T-01_I-39	39T-01	I-39	0.024	00:41 hr	1.049
164	✓	P_39T-09_39T-06	39T-09	39T-06	0.017	00:33 hr	2.323
165	✓	P_39T-06_39T-05	39T-06	39T-05	0.019	00:35 hr	1.354
166	✓	P_39T-05_39T-03	39T-05	39T-03	0.020	00:36 hr	1.963
167	✓	P_39B-01_39T-09	39B-01	39T-09	0.016	00:33 hr	2.034
168	✓	P_I-43_I-41	I-43	I-41	0.158	00:53 hr	4.970
169	✓	P_I-41_I-39	I-41	I-39	0.160	00:54 hr	4.730
170	✓	P_I-45_I-43	I-45	I-43	0.157	00:51 hr	3.080
171	✓	P_I-47_I-45	I-47	I-45	0.157	00:50 hr	4.245
172	✓	P_I-49_I-47	I-49	I-47	0.157	00:49 hr	4.194
173	✓	P_39B-15_39B-13	39B-15	39B-13	0.013	00:21 hr	3.629
174	✓	P_39B-13_39B-11	39B-13	39B-11	0.013	00:22 hr	1.424
175	✓	P_39B-11_39B-09	39B-11	39B-09	0.013	00:23 hr	0.983
176	✓	P_39B-09_39B-07	39B-09	39B-07	0.013	00:27 hr	1.002
177	✓	P_39B-07_39B-05	39B-07	39B-05	0.013	00:28 hr	0.944
178	✓	P_39B-05_39B-03	39B-05	39B-03	0.014	00:30 hr	0.756
179	✓	P_39B-03_39B-01	39B-03	39B-01	0.015	00:31 hr	1.649
180	✓	P_I-51_I-49	I-51	I-49	0.157	00:47 hr	4.304
181	✓	P_51T-00_I-51	51T-00	I-51	0.021	00:18 hr	2.376
182	✓	P_I-53_I-51	I-53	I-51	0.135	00:46 hr	4.124
183	✓	P_I-55_I-53	I-55	I-53	0.135	00:45 hr	3.070
184	✓	P_I-65_I-63	I-65	I-63	0.126	00:38 hr	2.735
185	✓	P_I-63_I-61	I-63	I-61	0.127	00:40 hr	3.447
186	✓	P_I-61_I-59	I-61	I-59	0.131	00:41 hr	2.955
187	✓	P_I-59_I-57	I-59	I-57	0.133	00:43 hr	3.402
188	✓	P_I-57_I-56	I-57	I-56	0.134	00:44 hr	2.918
189	✓	P_I-56_I-55	I-56	I-55	0.134	00:44 hr	2.853
190	✓	P_I-73_I-72	I-73	I-72	0.040	00:25 hr	1.847
191	✓	P_I-72_I-71	I-72	I-71	0.055	00:26 hr	2.084
192	✓	P_I-71_I-69	I-71	I-69	0.056	00:28 hr	2.051
193	✓	P_I-69_I-67	I-69	I-67	0.056	00:32 hr	1.143
194	✓	P_I-67_I-66	I-67	I-66	0.058	00:32 hr	0.689
195	✓	P_I-66_I-65	I-66	I-65	0.109	00:37 hr	1.452
196	✓	P_I-85_I-83	I-85	I-83	0.009	00:14 hr	0.885
197	✓	P_I-83_I-81	I-83	I-81	0.010	00:16 hr	0.926
198	✓	P_I-81_I-79	I-81	I-79	0.011	00:18 hr	1.627
199	✓	P_I-79_I-78	I-79	I-78	0.030	00:19 hr	1.362
200	✓	P_I-77_I-75	I-77	I-75	0.037	00:22 hr	2.033
201	✓	P_I-75_I-73	I-75	I-73	0.037	00:24 hr	1.339
202	✓	P_I-78_I-77	I-78	I-77	0.031	00:20 hr	1.879
203	✓	P_I-92_I-90	I-92	I-90	0.004	00:06 hr	0.791
204	✓	P_I-90_I-88	I-90	I-88	0.005	00:08 hr	0.712
205	✓	P_I-88_I-87	I-88	I-87	0.005	00:08 hr	1.415
206	✓	P_I-87_I-86	I-87	I-86	0.005	00:09 hr	0.641
207	✓	P_I-86_I-85	I-86	I-85	0.009	00:11 hr	0.909
208	✓	P_I-102_I-100	I-102	I-100	0.000	00:00 hr	0.000
209	✓	P_I-100_I-98	I-100	I-98	0.001	00:01 hr	0.825
210	✓	P_I-98_I-96	I-98	I-96	0.002	00:02 hr	1.674

		ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
211	✓	P_I-96_I-94	I-96	I-94	0.003	00:03 hr	1.856
212	✓	P_I-94_I-92	I-94	I-92	0.004	00:04 hr	1.850
213	✓	OUTLET_PIPE	SEMH02244	LOGAN_CITY_OUTLET	1.526	10:04 hr	2.339
214	✓	SEMH02124_SEMH02125	SEMH02124	SEMH02125	1.402	10:06 hr	2.766
215	✓	SEMH02243_SEMH02244	SEMH02243	SEMH02244	1.526	10:03 hr	3.749
216	✓	SEMH01336_SEMH02236	SEMH01336	SEMH02236	1.402	10:21 hr	5.227
217	✓	SEMH02235_SEMH01336	SEMH02235	SEMH01336	1.402	10:20 hr	2.805
218	✓	SEMH02234_SEMH02235	SEMH02234	SEMH02235	1.402	10:18 hr	3.254
219	✓	SEMH02232_SEMH02233	SEMH02232	SEMH02233	1.402	10:14 hr	5.340
220	✓	SEMH02233_SEMH02234	SEMH02233	SEMH02234	1.402	10:16 hr	3.220
221	✓	SEMH02231_SEMH02232	SEMH02231	SEMH02232	1.402	10:14 hr	2.878
222	✓	SEMH02230_SEMH02231	SEMH02230	SEMH02231	1.402	10:12 hr	4.189
223	✓	SEMH02229_SEMH02230	SEMH02229	SEMH02230	1.402	10:10 hr	0.794
224	✓	SEMH02237_SEMH02238	SEMH02237	SEMH02238	1.402	10:24 hr	2.169
225	✓	SEMH02236_SEMH02237	SEMH02236	SEMH02237	1.402	10:22 hr	3.223
226	✓	SEMH02125_SEMH02229	SEMH02125	SEMH02229	1.402	10:08 hr	3.964
227	✓	SEMH02114_SEMH02124	SEMH02114	SEMH02124	1.402	10:05 hr	4.119
228	✓	SEMH02115_SEMH02114	SEMH02115	SEMH02114	1.402	10:05 hr	4.997
229	✓	SEMH02238_SEMH02239	SEMH02238	SEMH02239	1.402	10:25 hr	4.092
230	✓	SEMH02240_SEMH02243	SEMH02240	SEMH02243	1.526	10:03 hr	4.170
231	✓	SEMH02239_SEMH02240	SEMH02239	SEMH02240	1.526	10:01 hr	3.431
232	✓	SEMH02113_SEMH02115	SEMH02113	SEMH02115	1.403	10:04 hr	2.869
233	✓	SEMH03023_SEMH02113	SEMH03023	SEMH02113	1.403	10:01 hr	5.338
234	✓	SEMH02112_SEMH03023	SEMH02112	SEMH03023	1.403	10:01 hr	1.786
235	✓	P_IW-26-METER_IW-26	IW-26-METER	IW-26	1.116	10:09 hr	3.014
236	✓	SEMH04165_SEMH02154	SEMH04165	SEMH02154	1.116	10:13 hr	5.315
237	✓	SEMH04007_SEMH02161	SEMH04007	SEMH02161	1.116	10:10 hr	3.950
238	✓	SEMH02154_SEMH02112	SEMH02154	SEMH02112	1.403	10:00 hr	2.841
239	✓	SEMH02161_SEMH04165	SEMH02161	SEMH04165	1.116	10:11 hr	1.421
240	✓	P_IW-26_SEMH04007	IW-26	SEMH04007	1.116	10:10 hr	4.980

		ID	Maximum Water Depth (ft)	Maximum Froude Number	Maximum d/D	Maximum Overflow (cfs)	Maximum Adjusted Depth (ft)
1	✓	P_E19-18_E19-20	0.020	2.227	0.030	-2.770	0.023
2	✓	P_E19-18_E19-17	0.025	1.767	0.038	-2.120	0.035
3	✓	P_E19-17_E19-15	0.044	1.971	0.066	-2.171	0.044
4	✓	P_E19-15_E19-14	0.041	2.317	0.061	-2.580	0.044
5	✓	P_E19-14_E19-11	0.047	2.333	0.071	-2.539	0.054
6	✓	P_E19-11_E19-08	0.061	1.972	0.092	-2.060	0.107
7	✓	P_E19-08_E19-05	0.152	1.168	0.229	-1.009	0.152
8	✓	P_E19-05_E19-02	0.140	1.393	0.210	-1.234	0.143
9	✓	P_E19-02_E19-01	0.146	1.283	0.219	-1.123	0.149
10	✓	P_E19-01_S19-21	0.153	1.176	0.229	-1.015	0.161
11	✓	P_S19-21_S19-19	0.169	0.686	0.136	-3.227	0.177
12	✓	P_S19-19_S19-15	0.184	0.583	0.148	-2.698	0.185
13	✓	P_S19-15_S19-13	0.186	0.578	0.149	-2.671	0.186
14	✓	P_S19-13_S19-12	0.180	0.621	0.144	-2.886	0.180
15	✓	P_S19-12_S19-11	0.092	2.366	0.073	-12.341	0.199
16	✓	P_S11-21_S11-19	0.178	1.581	0.268	-1.293	0.178
17	✓	P_S11-19_S11-17	0.130	2.737	0.156	-4.541	0.130
18	✓	P_S11-17_S11-15	0.110	3.841	0.131	-6.591	0.127
19	✓	P_S11-15_S11-13	0.144	2.242	0.173	-3.638	0.146
20	✓	P_S11-13_S11-11	0.148	2.192	0.178	-3.536	0.148
21	✓	P_S11-11_S11-09	0.148	2.197	0.178	-3.543	0.170
22	✓	P_S11-09_S11-07	0.192	1.460	0.231	-2.197	0.213
23	✓	P_S11-07_S11-05	0.233	1.053	0.279	-1.479	0.233
24	✓	P_S11-05_S11-03	0.209	1.298	0.251	-1.899	0.209
25	✓	P_S11-03_S11-01	0.181	1.718	0.217	-2.630	0.191
26	✓	P_S11-01_S19-11	0.200	1.417	0.240	-2.105	0.204
27	✓	P_B11-01_S11-09	0.059	1.079	0.089	-1.133	0.059
28	✓	P_19B-01_E19-08	0.096	1.828	0.144	-1.764	0.096
29	✓	P_19M-07_19M-05	0.102	1.267	0.153	-1.208	0.107
30	✓	P_19M-05_19M-03	0.112	1.088	0.167	-1.018	0.114
31	✓	P_19M-08_19M-07	0.068	2.543	0.102	-2.611	0.085
32	✓	P_19-01_19M-07	0.020	3.084	0.030	-3.847	0.061
33	✓	P_19D-15_19D-13	0.000	0.000	0.000	-3.965	0.037
34	✓	P_19D-13_19M-15	0.073	1.158	0.110	-1.175	0.073
35	✓	P_19M-15_19M-13	0.057	2.255	0.086	-2.381	0.057
36	✓	P_19M-13_19M-11	0.051	2.861	0.076	-3.080	0.054
37	✓	P_19M-11_19M-09	0.057	2.407	0.085	-2.547	0.063
38	✓	P_19M-09_19M-08	0.069	2.454	0.104	-2.513	0.069
39	✓	P_METER-NO-FLOW_19D-13	0.088	0.772	0.132	-0.758	0.088
40	✓	P_19T-11_19T-09	0.017	1.066	0.025	-1.367	0.020
41	✓	P_19T-09_19T-07	0.023	1.141	0.034	-1.393	0.027
42	✓	P_19T-07_19T-05	0.031	1.088	0.047	-1.263	0.033
43	✓	P_19T-05_19T-03	0.035	1.067	0.052	-1.218	0.044
44	✓	P_19T-03_19T-01	0.053	0.634	0.080	-0.677	0.056
45	✓	P_19T-01_S11-19	0.059	0.683	0.088	-0.718	0.069
46	✓	P_I-27_I-25	0.156	1.827	0.234	-1.566	0.156
47	✓	P_I-25_I-23	0.156	1.848	0.234	-1.584	0.161
48	✓	P_I-23_I-21	0.166	1.799	0.249	-1.512	0.177
49	✓	P_I-21_S11-21	0.188	1.422	0.282	-1.139	0.188
50	✓	P_19B-05_19B-03	0.123	1.084	0.184	-0.993	0.124
51	✓	P_19B-03_19B-01	0.125	1.058	0.188	-0.964	0.125
52	✓	P_19M-03_19M-01	0.117	1.024	0.176	-0.948	0.117
53	✓	P_19M-01_19B-07	0.108	1.211	0.163	-1.140	0.108
54	✓	P_19S-01_19B-07	0.034	0.937	0.051	-1.075	0.087
55	✓	P_19B-07_19B-05	0.140	0.827	0.210	-0.733	0.140
56	✓	P_IW-19_IW-22	0.366	1.456	0.366	-2.778	0.392
57	✓	P_IW-22_IW-26-METER	0.417	1.141	0.417	-1.952	0.981
58	✓	P_S19-11_S19-07	0.307	0.709	0.246	-2.879	0.307
59	✓	P_S19-07_S19-04	0.292	0.784	0.233	-3.238	0.319
60	✓	P_S19-04_S19-03	0.347	0.587	0.278	-2.276	0.347
61	✓	P_S19-03_S19-02	0.337	0.625	0.269	-2.455	0.376
62	✓	P_S19-02_S19-01	0.416	0.415	0.333	-1.474	0.416
63	✓	P_S19-01_IW-19	0.388	0.487	0.311	-1.795	0.388
64	✓	P_IW-12_IW-13	0.260	1.601	0.260	-3.646	0.281
65	✓	P_IW-13_IW-16	0.301	1.208	0.301	-2.591	0.304
66	✓	P_IW-16_IW-19	0.308	1.160	0.308	-2.460	0.337
67	✓	P_IW-04_IW-05	0.196	1.621	0.196	-4.029	0.196
68	✓	P_IW-05_IW-09	0.218	1.314	0.218	-3.171	0.224
69	✓	P_IW-09_IW-12	0.229	1.193	0.229	-2.838	0.245
70	✓	P_W13-05_W13-03	0.196	1.143	0.196	-2.839	0.198

		ID	Maximum Water Depth (ft)	Maximum Froude Number	Maximum d/D	Maximum Overflow (cfs)	Maximum Adjusted Depth (ft)
71	✓	P_W13-03_W13-01	0.200	1.103	0.200	-2.724	0.200
72	✓	P_13B-01_W13-01	0.017	0.885	0.026	-1.128	0.053
73	✓	P_W13-01_IW-12	0.189	1.246	0.189	-3.123	0.225
74	✓	P_N13-07_N13-04	0.229	0.803	0.229	-1.910	0.229
75	✓	P_N13-04_W13-07	0.227	0.830	0.227	-1.980	0.227
76	✓	P_IW-01_IW-04	0.211	1.398	0.211	-3.406	0.211
77	✓	P_W13-07_W13-05	0.174	1.442	0.174	-3.684	0.185
78	✓	P_I-03_I-01	0.228	1.194	0.228	-2.844	0.228
79	✓	P_I-01_IW-01	0.203	1.507	0.203	-3.709	0.557
80	✓	P_N13-09_N13-07	0.198	1.030	0.198	-2.555	0.213
81	✓	P_N13-11_N13-09	0.216	0.856	0.216	-2.072	0.216
82	✓	P_N13-13_N13-11	0.201	0.848	0.201	-2.095	0.208
83	✓	P_N13-15_N13-13	0.203	0.737	0.203	-1.816	0.203
84	✓	P_N13-23_N13-21	0.105	2.474	0.105	-6.964	0.110
85	✓	P_N13-21_N13-19	0.115	2.087	0.115	-5.788	0.137
86	✓	P_N13-19_N13-17	0.159	1.123	0.159	-2.928	0.159
87	✓	P_N13-17_N13-15	0.137	1.597	0.137	-4.292	0.170
88	✓	P_N13-29_N13-27	0.121	1.864	0.121	-5.119	0.121
89	✓	P_N13-27_N13-25	0.119	1.930	0.119	-5.318	0.132
90	✓	P_N13-31_N13-29	0.109	2.256	0.109	-6.309	0.115
91	✓	P_N13-25_N13-23	0.146	1.303	0.146	-3.459	0.146
92	✓	P_Z-17_Z-15	0.066	2.245	0.066	-6.812	0.069
93	✓	P_Z-15_Z-13	0.072	1.921	0.072	-5.754	0.081
94	✓	P_Z-13_Z-11	0.091	1.592	0.091	-4.594	0.091
95	✓	P_N13-37_N13-35	0.117	1.911	0.117	-5.280	0.117
96	✓	P_N13-35_N13-33	0.117	1.944	0.117	-5.374	0.121
97	✓	P_N13-33_N13-31	0.125	1.723	0.125	-4.705	0.125
98	✓	P_Z-07_Z-05	0.123	1.267	0.123	-3.467	0.123
99	✓	P_Z-05_N13-37	0.110	1.619	0.110	-4.524	0.114
100	✓	P_Z-11_Z-09	0.084	1.884	0.084	-5.501	0.101
101	✓	P_Z-09_Z-07	0.117	0.982	0.117	-2.714	0.120
102	✓	P_9T-35_9T-34	0.050	0.619	0.074	-0.669	0.050
103	✓	P_9T-34_9T-33	0.026	2.430	0.039	-2.901	0.029
104	✓	P_9T-33_9T-31	0.032	1.915	0.048	-2.215	0.033
105	✓	P_9T-31_9T-29	0.034	2.118	0.051	-2.429	0.042
106	✓	P_9T-29_9T-27	0.050	1.048	0.075	-1.132	0.050
107	✓	P_9T-27_9T-25	0.051	1.115	0.076	-1.200	0.051
108	✓	P_9T-25_9T-23	0.050	1.461	0.075	-1.576	0.051
109	✓	P_9T-23_9T-21	0.051	1.508	0.077	-1.621	0.051
110	✓	P_9T-21_9T-19	0.032	4.650	0.048	-5.387	0.059
111	✓	P_9T-19_9T-17	0.087	0.750	0.130	-0.738	0.087
112	✓	P_9T-17_9T-15	0.073	1.129	0.109	-1.147	0.073
113	✓	P_9T-15_9T-13	0.063	1.769	0.095	-1.839	0.070
114	✓	P_9T-13_9T-11	0.077	2.478	0.116	-2.491	0.118
115	✓	P_9T-11_9T-07	0.159	0.822	0.239	-0.700	0.159
116	✓	P_9T-07_9T-05	0.152	0.904	0.227	-0.782	0.164
117	✓	P_3T-01_9T-05	0.032	1.070	0.047	-1.241	0.104
118	✓	P_9T-05_9T-03	0.177	0.720	0.265	-0.592	0.177
119	✓	P_9T-03_9T-02	0.164	0.835	0.245	-0.705	0.172
120	✓	P_9T-02_I-09	0.180	0.709	0.270	-0.578	0.240
121	✓	P_11T-03_11T-01	0.164	1.661	0.247	-1.400	0.667
122	✓	P_11T-01_I-11	0.182	1.366	0.273	-1.108	0.210
123	✓	P_I-11_I-09	0.237	0.903	0.355	-0.640	0.237
124	✓	P_11T-21_11T-19	0.158	1.621	0.236	-1.386	0.158
125	✓	P_11T-19_11T-17	0.156	1.669	0.234	-1.431	0.156
126	✓	P_11T-17_11T-15	0.146	1.941	0.218	-1.700	0.151
127	✓	P_11T-15_11T-13	0.156	1.723	0.233	-1.479	0.156
128	✓	P_11T-13_11T-11	0.144	2.043	0.216	-1.794	0.148
129	✓	P_11T-11_11T-09	0.151	1.866	0.227	-1.616	0.667
130	✓	P_11T-09_11T-05	0.145	2.054	0.218	-1.800	0.145
131	✓	P_11T-05_11T-03	0.144	2.104	0.216	-1.848	0.154
132	✓	P_11T-09_11T-07	0.667	0.129	1.000	0.068	0.667
133	✓	P_I-04_I-03	0.249	1.007	0.249	-2.331	0.249
134	✓	P_W5A-01_I-04	0.034	3.171	0.051	-3.632	0.141
135	✓	P_I-09_I-07	0.300	0.665	0.300	-1.428	0.300
136	✓	P_I-07_I-05	0.278	0.771	0.278	-1.712	0.278
137	✓	P_I-05_I-04	0.234	1.077	0.234	-2.544	0.241
138	✓	P_W5B-03_W5B-01	0.007	1.620	0.010	-2.398	0.009
139	✓	P_11E-03_11E-01	0.043	2.801	0.064	-3.100	0.054
140	✓	P_11E-01_11T-21	0.065	1.306	0.098	-1.351	0.111

		ID	Maximum Water Depth (ft)	Maximum Froude Number	Maximum d/D	Maximum Overflow (cfs)	Maximum Adjusted Depth (ft)
141	✓	P_11T-26_11T-25	0.077	2.409	0.116	-2.419	0.099
142	✓	P_11T-25_11T-23	0.120	2.353	0.179	-2.168	0.121
143	✓	P_11T-23_11T-21	0.123	2.252	0.184	-2.061	0.140
144	✓	P_11F-01_11T-25	0.085	2.586	0.128	-2.553	0.102
145	✓	P_11T-27_11T-26	0.099	1.483	0.149	-1.423	0.099
146	✓	P_11F-03_11F-01	0.154	0.813	0.230	-0.701	0.154
147	✓	P_11F-03_11F-02	0.168	0.683	0.252	-0.572	0.168
148	✓	P_11F-02_11F-03	0.000	0.000	0.000	-0.919	0.000
149	✓	P_11F-03_11F-04	0.066	4.236	0.099	-4.369	0.117
150	✓	P_11T-37_11T-35	0.091	1.536	0.137	-1.497	0.091
151	✓	P_11T-35_11T-33	0.080	2.147	0.120	-2.144	0.080
152	✓	P_11T-33_11T-31	0.059	3.986	0.088	-4.191	0.072
153	✓	P_11T-31_11T-29	0.084	1.993	0.126	-1.973	0.084
154	✓	P_11T-29_11T-27	0.065	3.422	0.097	-3.545	0.082
155	✓	P_11T-39_11T-37	0.084	1.756	0.126	-1.737	0.088
156	✓	P_I-31_I-29	0.141	2.007	0.211	-1.775	0.182
157	✓	P_I-29_I-27	0.224	0.810	0.336	-0.595	0.224
158	✓	P_I-35_I-33	0.137	2.066	0.205	-1.840	0.137
159	✓	P_I-33_I-31	0.136	2.110	0.204	-1.882	0.138
160	✓	P_I-39_I-37	0.237	0.700	0.356	-0.497	0.237
161	✓	P_I-37_I-35	0.149	1.737	0.223	-1.511	0.149
162	✓	P_39T-03_39T-01	0.060	1.259	0.091	-1.318	0.069
163	✓	P_39T-01_I-39	0.078	0.801	0.117	-0.804	0.158
164	✓	P_39T-09_39T-06	0.037	2.604	0.055	-2.951	0.046
165	✓	P_39T-06_39T-05	0.055	1.233	0.083	-1.311	0.055
166	✓	P_39T-05_39T-03	0.045	1.989	0.067	-2.185	0.053
167	✓	P_39B-01_39T-09	0.038	2.247	0.057	-2.534	0.038
168	✓	P_I-43_I-41	0.098	3.373	0.147	-3.245	0.100
169	✓	P_I-41_I-39	0.102	3.141	0.153	-2.996	0.170
170	✓	P_I-45_I-43	0.136	1.760	0.204	-1.570	0.136
171	✓	P_I-47_I-45	0.109	2.727	0.163	-2.566	0.122
172	✓	P_I-49_I-47	0.110	2.682	0.165	-2.520	0.110
173	✓	P_39B-15_39B-13	0.023	5.190	0.034	-6.341	0.033
174	✓	P_39B-13_39B-11	0.042	1.481	0.064	-1.640	0.042
175	✓	P_39B-11_39B-09	0.055	0.901	0.082	-0.958	0.055
176	✓	P_39B-09_39B-07	0.054	0.924	0.081	-0.986	0.055
177	✓	P_39B-07_39B-05	0.056	0.852	0.084	-0.903	0.056
178	✓	P_39B-05_39B-03	0.067	0.622	0.101	-0.640	0.067
179	✓	P_39B-03_39B-01	0.042	1.729	0.063	-1.919	0.042
180	✓	P_I-51_I-49	0.108	2.780	0.161	-2.623	0.109
181	✓	P_51T-00_I-51	0.041	2.508	0.062	-2.790	0.041
182	✓	P_I-53_I-51	0.100	2.769	0.150	-2.652	0.104
183	✓	P_I-55_I-53	0.122	1.856	0.183	-1.701	0.122
184	✓	P_I-65_I-63	0.126	1.624	0.190	-1.476	0.126
185	✓	P_I-63_I-61	0.108	2.217	0.163	-2.088	0.116
186	✓	P_I-61_I-59	0.123	1.780	0.185	-1.629	0.123
187	✓	P_I-59_I-57	0.113	2.143	0.169	-2.000	0.120
188	✓	P_I-57_I-56	0.126	1.734	0.189	-1.577	0.127
189	✓	P_I-56_I-55	0.128	1.680	0.193	-1.522	0.128
190	✓	P_I-73_I-72	0.075	1.441	0.112	-1.456	0.081
191	✓	P_I-72_I-71	0.086	1.509	0.130	-1.486	0.087
192	✓	P_I-71_I-69	0.088	1.474	0.131	-1.448	0.110
193	✓	P_I-69_I-67	0.132	0.663	0.198	-0.596	0.163
194	✓	P_I-67_I-66	0.193	0.326	0.289	-0.258	0.193
195	✓	P_I-66_I-65	0.178	0.718	0.267	-0.588	0.178
196	✓	P_I-85_I-83	0.047	0.879	0.070	-0.960	0.047
197	✓	P_I-83_I-81	0.048	0.906	0.072	-0.985	0.048
198	✓	P_I-81_I-79	0.034	1.894	0.051	-2.171	0.667
199	✓	P_I-79_I-78	0.075	1.058	0.113	-1.068	0.075
200	✓	P_I-77_I-75	0.066	1.686	0.099	-1.738	0.078
201	✓	P_I-75_I-73	0.089	0.953	0.134	-0.933	0.089
202	✓	P_I-78_I-77	0.062	1.611	0.093	-1.680	0.062
203	✓	P_I-92_I-90	0.030	0.980	0.045	-1.145	0.032
204	✓	P_I-90_I-88	0.034	0.832	0.051	-0.955	0.034
205	✓	P_I-88_I-87	0.021	2.087	0.032	-2.574	0.029
206	✓	P_I-87_I-86	0.036	0.722	0.054	-0.820	0.041
207	✓	P_I-86_I-85	0.046	0.911	0.069	-0.998	0.046
208	✓	P_I-102_I-100	0.000	0.000	0.000	-4.367	0.006
209	✓	P_I-100_I-98	0.012	1.617	0.018	-2.183	0.012
210	✓	P_I-98_I-96	0.010	3.636	0.015	-5.070	0.011

		ID	Maximum Water Depth (ft)	Maximum Froude Number	Maximum d/D	Maximum Overflow (cfs)	Maximum Adjusted Depth (ft)
211	✓	P_I-96_I-94	0.013	3.516	0.019	-4.693	0.014
212	✓	P_I-94_I-92	0.015	3.291	0.022	-4.305	0.022
213	✓	OUTLET_PIPE	0.595	0.622	0.396	-3.077	0.595
214	✓	SEMH02124_SEMH02125	0.494	0.814	0.329	-4.586	0.494
215	✓	SEMH02243_SEMH02244	0.421	1.203	0.281	-7.326	0.508
216	✓	SEMH01336_SEMH02236	0.314	1.964	0.209	-13.219	0.378
217	✓	SEMH02235_SEMH01336	0.489	0.830	0.326	-4.704	0.489
218	✓	SEMH02234_SEMH02235	0.439	1.021	0.293	-6.107	0.464
219	✓	SEMH02232_SEMH02233	0.309	2.023	0.206	-13.670	0.376
220	✓	SEMH02233_SEMH02234	0.442	1.006	0.295	-5.998	0.442
221	✓	SEMH02231_SEMH02232	0.480	0.860	0.320	-4.925	0.480
222	✓	SEMH02230_SEMH02231	0.367	1.449	0.244	-9.299	0.423
223	✓	SEMH02229_SEMH02230	1.500	0.114	1.000	0.970	1.500
224	✓	SEMH02237_SEMH02238	0.591	0.578	0.394	-2.879	0.591
225	✓	SEMH02236_SEMH02237	0.442	1.007	0.295	-6.007	0.516
226	✓	SEMH02125_SEMH02229	0.381	1.342	0.254	-8.500	0.956
227	✓	SEMH02114_SEMH02124	0.371	1.415	0.247	-9.048	0.433
228	✓	SEMH02115_SEMH02114	0.324	1.847	0.216	-12.317	0.348
229	✓	SEMH02238_SEMH02239	0.373	1.402	0.249	-8.951	0.411
230	✓	SEMH02240_SEMH02243	0.391	1.394	0.260	-8.749	0.406
231	✓	SEMH02239_SEMH02240	0.449	1.063	0.299	-6.296	0.449
232	✓	SEMH02113_SEMH02115	0.597	0.770	0.597	-0.702	0.597
233	✓	SEMH03023_SEMH02113	0.369	1.814	0.369	-3.440	0.483
234	✓	SEMH02112_SEMH03023	1.000	0.315	1.000	0.731	1.000
235	✓	P_IW-26-METER_IW-26	0.478	0.890	0.478	-1.299	1.000
236	✓	SEMH04165_SEMH02154	0.313	1.969	0.313	-4.141	0.674
237	✓	SEMH04007_SEMH02161	0.389	1.304	0.389	-2.371	0.708
238	✓	SEMH02154_SEMH02112	0.602	0.766	0.602	-0.676	1.000
239	✓	SEMH02161_SEMH04165	1.000	0.298	1.000	0.163	1.000
240	✓	P_IW-26_SEMH04007	0.328	1.798	0.328	-3.686	0.358

		ID	Maximum Adjusted d/D	Maximum Adjusted Velocity (ft/s)	Maximum q/Q	Maximum Critical Depth (ft)
1	☑	P_E19-18_E19-20	0.034	0.013	0.002	0.030
2	☑	P_E19-18_E19-17	0.052	0.016	0.003	0.034
3	☑	P_E19-17_E19-15	0.066	1.928	0.009	0.062
4	☑	P_E19-15_E19-14	0.066	0.055	0.007	0.063
5	☑	P_E19-14_E19-11	0.082	0.075	0.010	0.073
6	☑	P_E19-11_E19-08	0.160	0.105	0.018	0.087
7	☑	P_E19-08_E19-05	0.229	2.173	0.115	0.165
8	☑	P_E19-05_E19-02	0.214	0.376	0.096	0.166
9	☑	P_E19-02_E19-01	0.224	0.377	0.105	0.166
10	☑	P_E19-01_S19-21	0.242	0.378	0.115	0.166
11	☑	P_S19-21_S19-19	0.142	0.108	0.039	0.140
12	☑	P_S19-19_S19-15	0.148	0.108	0.047	0.140
13	☑	P_S19-15_S19-13	0.149	1.175	0.048	0.141
14	☑	P_S19-13_S19-12	0.144	1.239	0.045	0.141
15	☑	P_S19-12_S19-11	0.160	0.110	0.011	0.141
16	☑	P_S11-21_S11-19	0.268	3.199	0.157	0.226
17	☑	P_S11-19_S11-17	0.156	4.654	0.053	0.217
18	☑	P_S11-17_S11-15	0.152	0.464	0.037	0.218
19	☑	P_S11-15_S11-13	0.175	0.465	0.065	0.218
20	☑	P_S11-13_S11-11	0.178	3.748	0.069	0.221
21	☑	P_S11-11_S11-09	0.204	0.482	0.069	0.222
22	☑	P_S11-09_S11-07	0.255	0.533	0.117	0.234
23	☑	P_S11-07_S11-05	0.279	2.439	0.170	0.239
24	☑	P_S11-05_S11-03	0.251	2.835	0.138	0.239
25	☑	P_S11-03_S11-01	0.229	0.558	0.104	0.239
26	☑	P_S11-01_S19-11	0.244	2.664	0.126	0.239
27	☑	P_B11-01_S11-09	0.089	1.231	0.016	0.062
28	☑	P_19B-01_E19-08	0.144	2.671	0.045	0.131
29	☑	P_19M-07_19M-05	0.160	0.185	0.051	0.115
30	☑	P_19M-05_19M-03	0.172	0.189	0.061	0.116
31	☑	P_19M-08_19M-07	0.127	0.166	0.022	0.109
32	☑	P_19-01_19M-07	0.091	1.494	0.002	0.035
33	☑	P_19D-15_19D-13	0.055	0.000	0.000	0.000
34	☑	P_19D-13_19M-15	0.110	1.471	0.025	0.079
35	☑	P_19M-15_19M-13	0.086	2.525	0.015	0.087
36	☑	P_19M-13_19M-11	0.081	0.105	0.012	0.087
37	☑	P_19M-11_19M-09	0.094	0.110	0.015	0.088
38	☑	P_19M-09_19M-08	0.104	3.024	0.023	0.109
39	☑	P_METER-NO-FLOW_19D-13	0.132	1.075	0.037	0.077
40	☑	P_19T-11_19T-09	0.030	0.004	0.001	0.017
41	☑	P_19T-09_19T-07	0.041	0.008	0.002	0.024
42	☑	P_19T-07_19T-05	0.050	0.015	0.004	0.033
43	☑	P_19T-05_19T-03	0.066	0.019	0.005	0.036
44	☑	P_19T-03_19T-01	0.084	0.025	0.013	0.042
45	☑	P_19T-01_S11-19	0.104	0.033	0.016	0.049
46	☑	P_I-27_I-25	0.234	3.444	0.120	0.213
47	☑	P_I-25_I-23	0.241	0.620	0.120	0.214
48	☑	P_I-23_I-21	0.265	0.680	0.136	0.225
49	☑	P_I-21_S11-21	0.282	2.963	0.174	0.226
50	☑	P_19B-05_19B-03	0.186	0.227	0.074	0.128
51	☑	P_19B-03_19B-01	0.188	1.775	0.077	0.129
52	☑	P_19M-03_19M-01	0.176	1.658	0.068	0.119
53	☑	P_19M-01_19B-07	0.163	1.881	0.057	0.119
54	☑	P_19S-01_19B-07	0.130	0.442	0.005	0.033
55	☑	P_19B-07_19B-05	0.210	1.469	0.096	0.127
56	☑	P_IW-19_IW-22	0.392	1.419	0.286	0.444
57	☑	P_IW-22_IW-26-METER	0.981	1.420	0.364	0.445
58	☑	P_S19-11_S19-07	0.246	1.877	0.132	0.258
59	☑	P_S19-07_S19-04	0.256	0.358	0.120	0.258
60	☑	P_S19-04_S19-03	0.278	1.659	0.168	0.264
61	☑	P_S19-03_S19-02	0.301	0.377	0.159	0.264
62	☑	P_S19-02_S19-01	0.333	1.295	0.239	0.264
63	☑	P_S19-01_IW-19	0.311	1.463	0.209	0.268
64	☑	P_IW-12_IW-13	0.281	0.810	0.149	0.332
65	☑	P_IW-13_IW-16	0.304	0.810	0.197	0.332
66	☑	P_IW-16_IW-19	0.337	0.812	0.206	0.332
67	☑	P_IW-04_IW-05	0.196	3.404	0.084	0.251
68	☑	P_IW-05_IW-09	0.224	0.471	0.104	0.251
69	☑	P_IW-09_IW-12	0.245	0.471	0.115	0.251
70	☑	P_W13-05_W13-03	0.198	0.333	0.084	0.210

		ID	Maximum Adjusted d/D	Maximum Adjusted Velocity (ft/s)	Maximum q/Q	Maximum Critical Depth (ft)
71	☑	P_W13-03_W13-01	0.200	2.342	0.088	0.211
72	☑	P_13B-01_W13-01	0.080	0.540	0.001	0.016
73	☑	P_W13-01_IW-12	0.225	0.491	0.078	0.212
74	☑	P_N13-07_N13-04	0.229	1.831	0.115	0.205
75	☑	P_N13-04_W13-07	0.227	1.883	0.113	0.206
76	☑	P_IW-01_IW-04	0.211	3.053	0.098	0.251
77	☑	P_W13-07_W13-05	0.185	0.333	0.066	0.210
78	☑	P_I-03_I-01	0.228	2.717	0.114	0.250
79	☑	P_I-01_IW-01	0.557	0.469	0.090	0.251
80	☑	P_N13-09_N13-07	0.213	0.304	0.085	0.201
81	☑	P_N13-11_N13-09	0.216	1.888	0.102	0.199
82	☑	P_N13-13_N13-11	0.208	0.259	0.088	0.185
83	☑	P_N13-15_N13-13	0.203	1.574	0.090	0.173
84	☑	P_N13-23_N13-21	0.110	0.211	0.023	0.167
85	☑	P_N13-21_N13-19	0.137	0.211	0.028	0.167
86	☑	P_N13-19_N13-17	0.159	2.116	0.055	0.169
87	☑	P_N13-17_N13-15	0.170	0.228	0.040	0.173
88	☑	P_N13-29_N13-27	0.121	3.050	0.031	0.167
89	☑	P_N13-27_N13-25	0.132	0.211	0.030	0.167
90	☑	P_N13-31_N13-29	0.115	0.208	0.025	0.165
91	☑	P_N13-25_N13-23	0.146	2.341	0.046	0.167
92	☑	P_Z-17_Z-15	0.069	0.076	0.009	0.099
93	☑	P_Z-15_Z-13	0.081	0.077	0.010	0.100
94	☑	P_Z-13_Z-11	0.091	2.241	0.017	0.115
95	☑	P_N13-37_N13-35	0.117	3.071	0.029	0.163
96	☑	P_N13-35_N13-33	0.121	0.205	0.029	0.164
97	☑	P_N13-33_N13-31	0.125	2.866	0.033	0.165
98	☑	P_Z-07_Z-05	0.123	2.090	0.032	0.139
99	☑	P_Z-05_N13-37	0.114	0.151	0.026	0.141
100	☑	P_Z-11_Z-09	0.101	0.103	0.015	0.116
101	☑	P_Z-09_Z-07	0.120	0.104	0.029	0.116
102	☑	P_9T-35_9T-34	0.074	0.644	0.011	0.039
103	☑	P_9T-34_9T-33	0.044	0.024	0.003	0.041
104	☑	P_9T-33_9T-31	0.049	0.028	0.004	0.045
105	☑	P_9T-31_9T-29	0.063	0.880	0.005	0.049
106	☑	P_9T-29_9T-27	0.076	0.037	0.011	0.051
107	☑	P_9T-27_9T-25	0.076	1.176	0.012	0.054
108	☑	P_9T-25_9T-23	0.076	0.052	0.011	0.061
109	☑	P_9T-23_9T-21	0.077	1.596	0.012	0.063
110	☑	P_9T-21_9T-19	0.089	1.669	0.004	0.069
111	☑	P_9T-19_9T-17	0.130	1.038	0.036	0.075
112	☑	P_9T-17_9T-15	0.109	1.429	0.025	0.077
113	☑	P_9T-15_9T-13	0.105	0.100	0.019	0.084
114	☑	P_9T-13_9T-11	0.177	0.209	0.028	0.122
115	☑	P_9T-11_9T-07	0.239	1.564	0.125	0.144
116	☑	P_9T-07_9T-05	0.246	0.287	0.113	0.144
117	☑	P_3T-01_9T-05	0.156	0.015	0.004	0.033
118	☑	P_9T-05_9T-03	0.265	1.450	0.153	0.149
119	☑	P_9T-03_9T-02	0.258	0.307	0.132	0.149
120	☑	P_9T-02_I-09	0.360	0.314	0.159	0.151
121	☑	P_11T-03_11T-01	1.000	0.617	0.133	0.214
122	☑	P_11T-01_I-11	0.314	0.620	0.163	0.214
123	☑	P_I-11_I-09	0.355	2.135	0.270	0.224
124	☑	P_11T-21_11T-19	0.236	3.070	0.123	0.202
125	☑	P_11T-19_11T-17	0.234	3.143	0.120	0.203
126	☑	P_11T-17_11T-15	0.226	0.569	0.105	0.205
127	☑	P_11T-15_11T-13	0.233	3.238	0.119	0.206
128	☑	P_11T-13_11T-11	0.221	0.587	0.102	0.208
129	☑	P_11T-11_11T-09	1.000	0.588	0.113	0.208
130	☑	P_11T-09_11T-05	0.218	3.720	0.104	0.210
131	☑	P_11T-05_11T-03	0.231	0.604	0.102	0.211
132	☑	P_11T-09_11T-07	1.000	0.597	1.486	0.210
133	☑	P_I-04_I-03	0.249	2.399	0.136	0.250
134	☑	P_W5A-01_I-04	0.212	1.508	0.005	0.061
135	☑	P_I-09_I-07	0.300	1.754	0.195	0.243
136	☑	P_I-07_I-05	0.278	1.950	0.169	0.243
137	☑	P_I-05_I-04	0.241	0.442	0.120	0.243
138	☑	P_W5B-03_W5B-01	0.014	0.001	0.000	0.009
139	☑	P_11E-03_11E-01	0.081	0.073	0.008	0.072
140	☑	P_11E-01_11T-21	0.167	0.078	0.020	0.074

		ID	Maximum Adjusted d/D	Maximum Adjusted Velocity (ft/s)	Maximum q/Q	Maximum Critical Depth (ft)
141	☑	P_11T-26_11T-25	0.148	0.204	0.029	0.121
142	☑	P_11T-25_11T-23	0.182	0.469	0.070	0.185
143	☑	P_11T-23_11T-21	0.210	0.473	0.074	0.186
144	☑	P_11F-01_11T-25	0.154	0.265	0.035	0.138
145	☑	P_11T-27_11T-26	0.149	2.200	0.048	0.121
146	☑	P_11F-03_11F-01	0.230	1.519	0.116	0.138
147	☑	P_11F-03_11F-02	0.252	1.339	0.139	0.138
148	☑	P_11F-02_11F-03	0.000	0.000	0.000	0.000
149	☑	P_11F-03_11F-04	0.176	0.263	0.021	0.138
150	☑	P_11T-37_11T-35	0.137	2.184	0.040	0.114
151	☑	P_11T-35_11T-33	0.120	2.849	0.031	0.118
152	☑	P_11T-33_11T-31	0.107	0.197	0.016	0.119
153	☑	P_11T-31_11T-29	0.126	2.716	0.034	0.119
154	☑	P_11T-29_11T-27	0.123	0.202	0.020	0.120
155	☑	P_11T-39_11T-37	0.132	0.176	0.034	0.112
156	☑	P_I-31_I-29	0.273	0.548	0.097	0.201
157	☑	P_I-29_I-27	0.336	1.859	0.244	0.201
158	☑	P_I-35_I-33	0.205	3.629	0.092	0.199
159	☑	P_I-33_I-31	0.207	0.542	0.091	0.200
160	☑	P_I-39_I-37	0.356	1.660	0.271	0.197
161	☑	P_I-37_I-35	0.223	3.192	0.110	0.198
162	☑	P_39T-03_39T-01	0.104	0.065	0.017	0.068
163	☑	P_39T-01_I-39	0.236	0.069	0.029	0.070
164	☑	P_39T-09_39T-06	0.069	0.050	0.006	0.059
165	☑	P_39T-06_39T-05	0.083	1.354	0.014	0.061
166	☑	P_39T-05_39T-03	0.079	0.057	0.009	0.063
167	☑	P_39B-01_39T-09	0.057	2.034	0.006	0.057
168	☑	P_I-43_I-41	0.150	0.453	0.046	0.182
169	☑	P_I-41_I-39	0.254	0.458	0.051	0.183
170	☑	P_I-45_I-43	0.204	3.080	0.091	0.182
171	☑	P_I-47_I-45	0.184	0.451	0.058	0.182
172	☑	P_I-49_I-47	0.165	4.194	0.059	0.182
173	☑	P_39B-15_39B-13	0.049	0.038	0.002	0.052
174	☑	P_39B-13_39B-11	0.064	1.424	0.008	0.052
175	☑	P_39B-11_39B-09	0.082	0.983	0.014	0.052
176	☑	P_39B-09_39B-07	0.082	0.038	0.013	0.052
177	☑	P_39B-07_39B-05	0.084	0.944	0.015	0.052
178	☑	P_39B-05_39B-03	0.101	0.756	0.021	0.053
179	☑	P_39B-03_39B-01	0.063	1.649	0.008	0.055
180	☑	P_I-51_I-49	0.163	0.450	0.057	0.182
181	☑	P_51T-00_I-51	0.062	2.376	0.008	0.066
182	☑	P_I-53_I-51	0.156	0.388	0.049	0.168
183	☑	P_I-55_I-53	0.183	3.070	0.073	0.168
184	☑	P_I-65_I-63	0.190	2.735	0.079	0.162
185	☑	P_I-63_I-61	0.174	0.365	0.057	0.163
186	☑	P_I-61_I-59	0.185	2.955	0.074	0.165
187	☑	P_I-59_I-57	0.179	0.382	0.062	0.167
188	☑	P_I-57_I-56	0.191	0.455	0.078	0.167
189	☑	P_I-56_I-55	0.193	2.853	0.081	0.167
190	☑	P_I-73_I-72	0.121	0.114	0.026	0.090
191	☑	P_I-72_I-71	0.130	0.158	0.036	0.106
192	☑	P_I-71_I-69	0.165	0.159	0.037	0.107
193	☑	P_I-69_I-67	0.244	0.161	0.086	0.107
194	☑	P_I-67_I-66	0.289	0.689	0.182	0.109
195	☑	P_I-66_I-65	0.267	1.452	0.156	0.150
196	☑	P_I-85_I-83	0.071	0.027	0.010	0.044
197	☑	P_I-83_I-81	0.072	0.926	0.010	0.046
198	☑	P_I-81_I-79	1.000	0.031	0.005	0.047
199	☑	P_I-79_I-78	0.113	1.362	0.027	0.077
200	☑	P_I-77_I-75	0.117	0.105	0.021	0.086
201	☑	P_I-75_I-73	0.134	1.339	0.038	0.087
202	☑	P_I-78_I-77	0.093	1.879	0.018	0.079
203	☑	P_I-92_I-90	0.048	0.013	0.004	0.030
204	☑	P_I-90_I-88	0.051	0.712	0.005	0.031
205	☑	P_I-88_I-87	0.043	0.014	0.002	0.031
206	☑	P_I-87_I-86	0.061	0.014	0.006	0.031
207	☑	P_I-86_I-85	0.069	0.027	0.009	0.044
208	☑	P_I-102_I-100	0.009	0.001	0.000	0.008
209	☑	P_I-100_I-98	0.018	0.825	0.001	0.015
210	☑	P_I-98_I-96	0.017	0.005	0.000	0.019

		ID	Maximum Adjusted d/D	Maximum Adjusted Velocity (ft/s)	Maximum q/Q	Maximum Critical Depth (ft)
211	✓	P_I-96_I-94	0.021	0.008	0.001	0.024
212	✓	P_I-94_I-92	0.034	0.010	0.001	0.027
213	✓	OUTLET_PIPE	0.396	2.339	0.332	0.464
214	✓	SEMH02124_SEMH02125	0.329	2.766	0.234	0.444
215	✓	SEMH02243_SEMH02244	0.339	0.864	0.172	0.464
216	✓	SEMH01336_SEMH02236	0.252	0.793	0.096	0.444
217	✓	SEMH02235_SEMH01336	0.326	2.805	0.230	0.444
218	✓	SEMH02234_SEMH02235	0.309	0.793	0.187	0.444
219	✓	SEMH02232_SEMH02233	0.250	0.793	0.093	0.444
220	✓	SEMH02233_SEMH02234	0.295	3.220	0.190	0.444
221	✓	SEMH02231_SEMH02232	0.320	2.878	0.222	0.444
222	✓	SEMH02230_SEMH02231	0.282	0.793	0.131	0.444
223	✓	SEMH02229_SEMH02230	1.000	0.794	3.239	0.444
224	✓	SEMH02237_SEMH02238	0.394	2.169	0.328	0.444
225	✓	SEMH02236_SEMH02237	0.344	0.793	0.189	0.444
226	✓	SEMH02125_SEMH02229	0.637	0.794	0.142	0.444
227	✓	SEMH02114_SEMH02124	0.288	0.794	0.134	0.444
228	✓	SEMH02115_SEMH02114	0.232	0.794	0.102	0.444
229	✓	SEMH02238_SEMH02239	0.274	0.793	0.135	0.444
230	✓	SEMH02240_SEMH02243	0.271	0.864	0.149	0.464
231	✓	SEMH02239_SEMH02240	0.299	3.432	0.195	0.464
232	✓	SEMH02113_SEMH02115	0.597	2.869	0.666	0.501
233	✓	SEMH03023_SEMH02113	0.483	1.786	0.290	0.501
234	✓	SEMH02112_SEMH03023	1.000	1.786	2.087	0.501
235	✓	P_IW-26-METER_IW-26	1.000	1.421	0.462	0.445
236	✓	SEMH04165_SEMH02154	0.674	1.421	0.212	0.445
237	✓	SEMH04007_SEMH02161	0.708	1.421	0.320	0.445
238	✓	SEMH02154_SEMH02112	1.000	1.786	0.675	0.501
239	✓	SEMH02161_SEMH04165	1.000	1.421	1.171	0.445
240	✓	P_IW-26_SEMH04007	0.358	1.421	0.232	0.445

2030 Model Results for Surveyed Lines and Outfall Line

	ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
1	OUTLET_PIPE	SEMH02244	LOGAN_CITY_OUTLET	2.124	10:31 hr	2.552
2	SEMH02124_SEMH02125	SEMH02124	SEMH02125	1.970	10:08 hr	3.038
3	SEMH02243_SEMH02244	SEMH02243	SEMH02244	2.124	10:30 hr	4.116
4	SEMH01336_SEMH02236	SEMH01336	SEMH02236	1.970	10:24 hr	5.770
5	SEMH02235_SEMH01336	SEMH02235	SEMH01336	1.970	10:23 hr	3.081
6	SEMH02234_SEMH02235	SEMH02234	SEMH02235	1.970	10:21 hr	3.580
7	SEMH02232_SEMH02233	SEMH02232	SEMH02233	1.970	10:17 hr	5.895
8	SEMH02233_SEMH02234	SEMH02233	SEMH02234	1.970	10:18 hr	3.542
9	SEMH02231_SEMH02232	SEMH02231	SEMH02232	1.970	10:16 hr	3.162
10	SEMH02113_SEMH02115	SEMH02113	SEMH02115	1.970	10:06 hr	3.046
11	SEMH02230_SEMH02231	SEMH02230	SEMH02231	1.970	10:15 hr	4.618
12	SEMH02229_SEMH02230	SEMH02229	SEMH02230	1.970	10:12 hr	1.115
13	SEMH02237_SEMH02238	SEMH02237	SEMH02238	1.970	10:28 hr	2.372
14	SEMH02236_SEMH02237	SEMH02236	SEMH02237	1.970	10:25 hr	3.545
15	SEMH02125_SEMH02229	SEMH02125	SEMH02229	1.970	10:10 hr	4.369
16	SEMH02114_SEMH02124	SEMH02114	SEMH02124	1.970	10:07 hr	4.541
17	SEMH02115_SEMH02114	SEMH02115	SEMH02114	1.970	10:06 hr	5.515
18	SEMH03023_SEMH02113	SEMH03023	SEMH02113	1.970	10:02 hr	5.849
19	SEMH02238_SEMH02239	SEMH02238	SEMH02239	1.970	10:28 hr	4.510
20	SEMH02240_SEMH02243	SEMH02240	SEMH02243	2.124	10:29 hr	4.582
21	SEMH02239_SEMH02240	SEMH02239	SEMH02240	2.124	10:28 hr	3.764
22	P_IW-19_IW-22	IW-19	IW-22	1.600	10:20 hr	4.714
23	P_IW-22_IW-26-METER	IW-22	IW-26-METER	1.601	10:20 hr	3.947
24	P_IW-26-METER_IW-26	IW-26-METER	IW-26	1.602	10:23 hr	3.289
25	P_S19-04_S19-03	S19-04	S19-03	0.683	10:18 hr	1.853
26	P_S19-03_S19-02	S19-03	S19-02	0.684	10:18 hr	1.941
27	P_S19-02_S19-01	S19-02	S19-01	0.684	10:19 hr	1.442
28	P_S19-01_IW-19	S19-01	IW-19	0.707	10:20 hr	1.634
29	SEMH04165_SEMH02154	SEMH04165	SEMH02154	1.602	10:27 hr	5.876
30	SEMH04007_SEMH02161	SEMH04007	SEMH02161	1.602	10:25 hr	4.345
31	SEMH02155_SEMH02154	SEMH02155	SEMH02154	0.072	09:29 hr	2.370
32	SEMH02154_SEMH02112	SEMH02154	SEMH02112	1.970	10:00 hr	3.011
33	SEMH02112_SEMH03023	SEMH02112	SEMH03023	1.970	10:01 hr	2.508
34	SEMH02161_SEMH04165	SEMH02161	SEMH04165	1.602	10:26 hr	2.040
35	P_IW-26_SEMH04007	IW-26	SEMH04007	1.602	10:23 hr	5.501
36	P_IW-16_IW-19	IW-16	IW-19	0.892	10:07 hr	3.409
37	P_S11-01_S19-11	S11-01	S19-11	0.386	10:12 hr	3.237
38	P_S19-11_S19-07	S19-11	S19-07	0.661	10:13 hr	2.110
39	P_S19-07_S19-04	S19-07	S19-04	0.661	10:16 hr	2.271
40	P_E19-02_E19-01	E19-02	E19-01	0.192	09:43 hr	2.598
41	P_E19-01_S19-21	E19-01	S19-21	0.192	09:44 hr	2.439
42	P_S19-21_S19-19	S19-21	S19-19	0.263	09:45 hr	1.629
43	P_S19-19_S19-15	S19-19	S19-15	0.264	09:51 hr	1.444
44	P_S19-15_S19-13	S19-15	S19-13	0.264	09:54 hr	1.437
45	P_S19-13_S19-12	S19-13	S19-12	0.275	09:58 hr	1.532
46	P_S19-12_S19-11	S19-12	S19-11	0.276	09:58 hr	4.148
47	P_S20-01_S19-01	S20-01	S19-01	0.023	09:12 hr	0.212
48	P_S11-03_S11-01	S11-03	S11-01	0.385	10:10 hr	3.724
49	P_S11-21_S11-19	S11-21	S11-19	0.309	10:03 hr	3.437
50	P_S11-19_S11-17	S11-19	S11-17	0.322	10:03 hr	4.998
51	P_S11-17_S11-15	S11-17	S11-15	0.322	10:04 hr	6.422
52	P_S11-15_S11-13	S11-15	S11-13	0.323	10:05 hr	4.318
53	P_S11-13_S11-11	S11-13	S11-11	0.331	10:06 hr	4.275
54	P_S11-11_S11-09	S11-11	S11-09	0.344	10:02 hr	4.332
55	P_S11-09_S11-07	S11-09	S11-07	0.372	10:04 hr	3.277
56	P_S11-07_S11-05	S11-07	S11-05	0.385	10:07 hr	2.608
57	P_S11-05_S11-03	S11-05	S11-03	0.385	10:09 hr	3.034
58	P_B11-01_S11-09	B11-01	S11-09	0.019	00:00 hr	1.231
59	P_I-17_I-19	I-19	I-17	0.000	00:00 hr	0.000
60	P_19T-11_19T-09	19T-11	19T-09	0.001	00:04 hr	0.638
61	P_19T-09_19T-07	19T-09	19T-07	0.003	00:07 hr	0.800
62	P_19T-07_19T-05	19T-07	19T-05	0.005	00:10 hr	0.896
63	P_19T-05_19T-03	19T-05	19T-03	0.007	00:13 hr	0.929

2030 Model Results for Surveyed Lines and Outfall Line

	ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
64	P_19T-03_19T-01	19T-03	19T-01	0.009	00:17 hr	0.682
65	P_19T-01_S11-19	19T-01	S11-19	0.012	09:03 hr	0.774
66	P_19C-01_19T-11	19C-01	19T-11	0.001	00:01 hr	0.681
67	P_19M-07_19M-05	19M-07	19M-05	0.092	09:25 hr	2.122
68	P_19M-05_19M-03	19M-05	19M-03	0.094	09:28 hr	1.904
69	P_19-01_19M-07	19-01	19M-07	0.013	09:04 hr	2.553
70	P_19D-15_19D-13	19D-15	19D-13	0.000	00:00 hr	0.000
71	P_19D-13_19M-15	19D-13	19M-15	0.041	09:19 hr	1.602
72	P_19M-15_19M-13	19M-15	19M-13	0.047	09:20 hr	2.717
73	P_19M-13_19M-11	19M-13	19M-11	0.047	09:21 hr	3.244
74	P_19M-11_19M-09	19M-11	19M-09	0.048	09:23 hr	2.875
75	P_19M-09_19M-08	19M-09	19M-08	0.068	09:23 hr	3.175
76	P_19M-08_19M-07	19M-08	19M-07	0.068	09:24 hr	3.259
77	P_METER-NO-FLOW_19D-13	METER-NO-FLOW	19D-13	0.039	09:18 hr	1.175
78	P_19D-11_METER-NO-FLOW	19D-11	METER-NO-FLOW	0.039	09:18 hr	0.924
79	P_E19-18_E19-20	E19-20	E19-18	0.005	00:02 hr	1.471
80	P_E19-18_E19-17	E19-18	E19-17	0.006	00:03 hr	1.308
81	P_E19-17_E19-15	E19-17	E19-15	0.019	00:07 hr	1.928
82	P_E19-15_E19-14	E19-15	E19-14	0.019	00:07 hr	2.186
83	P_E19-14_E19-11	E19-14	E19-11	0.026	00:09 hr	2.373
84	P_E19-11_E19-08	E19-11	E19-08	0.037	00:11 hr	2.286
85	P_E19-08_E19-05	E19-08	E19-05	0.159	09:39 hr	2.298
86	P_19B-01_E19-08	19B-01	E19-08	0.111	09:37 hr	2.911
87	P_E19-20_E19-24	E19-24	E19-20	0.001	00:00 hr	1.057
88	P_E19-05_E19-02	E19-05	E19-02	0.160	09:41 hr	2.621
89	P_19M-03_19M-01	19M-03	19M-01	0.097	09:29 hr	1.834
90	P_19M-01_19B-07	19M-01	19B-07	0.097	09:29 hr	2.079
91	P_19B-07_19B-05	19B-07	19B-05	0.106	09:31 hr	1.606
92	P_19B-05_19B-03	19B-05	19B-03	0.107	09:32 hr	1.964
93	P_19B-03_19B-01	19B-03	19B-01	0.109	09:35 hr	1.936
94	P_19S-01_19B-07	19S-01	19B-07	0.005	00:02 hr	0.801
95	P_I-27_I-25	I-27	I-25	0.283	10:01 hr	3.732
96	P_I-25_I-23	I-25	I-23	0.285	10:02 hr	3.768
97	P_I-23_I-21	I-23	I-21	0.306	10:04 hr	3.767
98	P_I-21_S11-21	I-21	S11-21	0.309	10:02 hr	3.183
99	P_I-39_I-37	I-39	I-37	0.253	09:49 hr	1.807
100	P_I-37_I-35	I-37	I-35	0.254	09:51 hr	3.493
101	P_I-35_I-33	I-35	I-33	0.256	09:51 hr	3.976
102	P_I-33_I-31	I-33	I-31	0.258	09:58 hr	4.044
103	P_I-31_I-29	I-31	I-29	0.260	09:55 hr	3.909
104	P_I-29_I-27	I-29	I-27	0.260	09:58 hr	2.022
105	P_39T-09_39T-06	39T-09	39T-06	0.048	09:25 hr	3.166
106	P_39T-06_39T-05	39T-06	39T-05	0.050	09:27 hr	1.818
107	P_39T-05_39T-03	39T-05	39T-03	0.051	09:29 hr	2.609
108	P_39T-03_39T-01	39T-03	39T-01	0.054	09:29 hr	1.874
109	P_39T-01_I-39	39T-01	I-39	0.055	09:33 hr	1.344
110	P_39T-11_39T-09	39T-11	39T-09	0.011	09:04 hr	0.890
111	P_I-43_I-41	I-43	I-41	0.195	09:44 hr	5.290
112	P_I-41_I-39	I-41	I-39	0.197	09:44 hr	5.031
113	P_I-51_I-49	I-51	I-49	0.194	09:38 hr	4.583
114	P_I-49_I-47	I-49	I-47	0.194	09:40 hr	4.465
115	P_I-47_I-45	I-47	I-45	0.194	09:40 hr	4.519
116	P_I-45_I-43	I-45	I-43	0.194	09:42 hr	3.276
117	P_51T-00_I-51	51T-00	I-51	0.021	00:18 hr	2.376
118	P_51T-01_51T-00	51T-01	51T-00	0.021	00:17 hr	2.590
119	P_51T-02_51T-01	51T-02	51T-01	0.021	00:16 hr	1.742
120	P_39B-01_39T-09	39B-01	39T-09	0.037	09:25 hr	2.620
121	P_39B-15_39B-13	39B-15	39B-13	0.034	09:13 hr	4.837
122	P_39B-13_39B-11	39B-13	39B-11	0.034	09:14 hr	1.893
123	P_39B-11_39B-09	39B-11	39B-09	0.034	09:15 hr	1.305
124	P_39B-09_39B-07	39B-09	39B-07	0.034	09:19 hr	1.331
125	P_39B-07_39B-05	39B-07	39B-05	0.034	09:20 hr	1.253
126	P_39B-05_39B-03	39B-05	39B-03	0.035	09:22 hr	0.994

2030 Model Results for Surveyed Lines and Outfall Line

	ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
127	P_39B-03_39B-01	39B-03	39B-01	0.036	09:23 hr	2.145
128	P_I-55_I-53	I-55	I-53	0.172	09:36 hr	3.298
129	P_I-53_I-51	I-53	I-51	0.172	09:38 hr	4.432
130	P_51T-03_51T-02	51T-03	51T-02	0.021	00:15 hr	1.218
131	P_I-65_I-63	I-65	I-63	0.163	09:30 hr	2.950
132	P_I-63_I-61	I-63	I-61	0.164	09:31 hr	3.717
133	P_I-61_I-59	I-61	I-59	0.168	09:34 hr	3.180
134	P_I-59_I-57	I-59	I-57	0.170	09:34 hr	3.658
135	P_I-57_I-56	I-57	I-56	0.171	09:34 hr	3.135
136	P_58A-01_I-59	58A-01	I-59	0.001	00:00 hr	0.909
137	P_I-65_65T-01	65T-01	I-65	0.029	09:11 hr	2.734
138	P_I-56_I-55	I-56	I-55	0.171	09:35 hr	3.064
139	P_I-92_I-90	I-92	I-90	0.004	00:06 hr	0.791
140	P_I-90_I-88	I-90	I-88	0.005	00:08 hr	0.712
141	P_I-88_I-87	I-88	I-87	0.005	00:08 hr	1.415
142	P_I-87_I-86	I-87	I-86	0.005	00:09 hr	0.641
143	P_I-86_I-85	I-86	I-85	0.009	00:11 hr	0.909
144	P_I-85_I-83	I-85	I-83	0.009	00:14 hr	0.885
145	P_I-83_I-81	I-83	I-81	0.010	00:16 hr	0.926
146	P_I-81_I-79	I-81	I-79	0.016	09:01 hr	1.843
147	P_I-79_I-78	I-79	I-78	0.035	09:03 hr	1.434
148	P_I-77_I-75	I-77	I-75	0.042	09:05 hr	2.121
149	P_I-75_I-73	I-75	I-73	0.043	09:08 hr	1.396
150	P_I-73_I-72	I-73	I-72	0.045	09:08 hr	1.921
151	P_I-72_I-71	I-72	I-71	0.063	09:09 hr	2.164
152	P_I-71_I-69	I-71	I-69	0.063	09:11 hr	2.129
153	P_I-69_I-67	I-69	I-67	0.064	09:15 hr	1.186
154	P_I-67_I-66	I-67	I-66	0.065	09:16 hr	0.713
155	P_I-66_I-65	I-66	I-65	0.134	09:28 hr	1.540
156	P_72A-01_I-72	72A-01	I-72	0.016	09:03 hr	2.732
157	P_72A-03_72A-01	72A-03	72A-01	0.000	00:00 hr	0.000
158	P_I-66_66A-01	66A-01	I-66	0.068	09:25 hr	3.635
159	P_76-01_I-77	76-01	I-77	0.005	00:04 hr	2.157
160	P_I-78_I-77	I-78	I-77	0.036	09:04 hr	1.975
161	P_I-79_79A-01	79A-01	I-79	0.018	00:10 hr	2.313
162	P_I-102_I-100	I-102	I-100	0.000	00:00 hr	0.000
163	P_I-100_I-98	I-100	I-98	0.001	00:01 hr	0.825
164	P_I-98_I-96	I-98	I-96	0.002	00:02 hr	1.674
165	P_I-96_I-94	I-96	I-94	0.003	00:03 hr	1.856
166	P_I-94_I-92	I-94	I-92	0.004	00:04 hr	1.850
167	P_Z-17_Z-15	Z-17	Z-15	0.181	09:13 hr	3.762
168	P_Z-15_Z-13	Z-15	Z-13	0.181	09:14 hr	3.348
169	P_Z-13_Z-11	Z-13	Z-11	0.208	09:15 hr	2.995
170	P_Z-11_Z-09	Z-11	Z-09	0.251	09:19 hr	3.589
171	P_Z-09_Z-07	Z-09	Z-07	0.251	09:17 hr	2.206
172	P_Z-17_Z-19	Z-19	Z-17	0.106	09:11 hr	2.491
173	P_9T-05_9T-03	9T-05	9T-03	0.157	09:43 hr	1.616
174	P_9T-03_9T-02	9T-03	9T-02	0.157	09:42 hr	1.800
175	P_9T-02_I-09	9T-02	I-09	0.160	09:45 hr	1.604
176	P_3T-01_9T-05	3T-01	9T-05	0.005	00:06 hr	0.884
177	P_I-11_I-09	I-11	I-09	0.261	09:44 hr	2.191
178	P_11E-03_11E-01	11E-03	11E-01	0.025	00:19 hr	2.699
179	P_11E-01_11T-21	11E-01	11T-21	0.027	00:20 hr	1.559
180	P_11T-21_11T-19	11T-21	11T-19	0.217	09:27 hr	3.173
181	P_11T-19_11T-17	11T-19	11T-17	0.219	09:28 hr	3.249
182	P_11T-17_11T-15	11T-17	11T-15	0.222	09:30 hr	3.640
183	P_11T-15_11T-13	11T-15	11T-13	0.224	09:31 hr	3.344
184	P_11T-13_11T-11	11T-13	11T-11	0.228	09:32 hr	3.806
185	P_11T-11_11T-09	11T-11	11T-09	0.229	09:34 hr	3.565
186	P_11T-09_11T-05	11T-07	11T-05	0.232	09:39 hr	3.837
187	P_11T-05_11T-03	11T-05	11T-03	0.234	09:39 hr	3.916
188	P_11T-03_11T-01	11T-03	11T-01	0.239	09:40 hr	3.315
189	P_11T-01_I-11	11T-01	I-11	0.240	09:42 hr	2.880

2030 Model Results for Surveyed Lines and Outfall Line

	ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
190	P_11T-09_11T-07	11T-09	11T-07	0.232	09:36 hr	0.665
191	P_11B-01_11T-09	11B-01	11T-09	0.003	00:03 hr	0.749
192	P_11A-01_11T-03	11A-01	11T-03	0.003	00:04 hr	0.828
193	P_11T-39_11T-37	11T-39	11T-37	0.061	00:23 hr	2.396
194	P_11T-37_11T-35	11T-37	11T-35	0.063	00:25 hr	2.184
195	P_11T-35_11T-33	11T-35	11T-33	0.069	09:05 hr	2.866
196	P_11T-33_11T-31	11T-33	11T-31	0.070	09:06 hr	4.554
197	P_11T-31_11T-29	11T-31	11T-29	0.071	09:08 hr	2.733
198	P_11T-29_11T-27	11T-29	11T-27	0.072	09:08 hr	4.095
199	P_11T-27_11T-26	11T-27	11T-26	0.073	09:09 hr	2.213
200	P_11T-26_11T-25	11T-26	11T-25	0.073	09:09 hr	3.165
201	P_11T-25_11T-23	11T-25	11T-23	0.187	09:22 hr	4.005
202	P_11T-23_11T-21	11T-23	11T-21	0.189	09:27 hr	3.885
203	P_11F-03_11F-01	11F-02	11F-01	0.114	09:22 hr	1.616
204	P_11F-01_11T-25	11F-01	11T-25	0.114	09:21 hr	3.782
205	P_11F-03_11F-02	11F-03	11F-02	0.114	09:19 hr	1.424
206	P_11F-02_11F-03	11F-03	11F-02	0.000	00:00 hr	0.000
207	P_11F-03_11F-04	11F-04	11F-03	0.114	09:21 hr	5.448
208	P_9T-35_9T-34	9T-35	9T-34	0.058	09:09 hr	1.183
209	P_9T-34_9T-33	9T-34	9T-33	0.058	09:10 hr	3.304
210	P_9T-33_9T-31	9T-33	9T-31	0.060	09:12 hr	2.760
211	P_9T-31_9T-29	9T-31	9T-29	0.062	09:12 hr	2.979
212	P_9T-29_9T-27	9T-29	9T-27	0.063	09:15 hr	1.758
213	P_9T-27_9T-25	9T-27	9T-25	0.064	09:17 hr	1.845
214	P_9T-25_9T-23	9T-25	9T-23	0.068	09:19 hr	2.273
215	P_9T-23_9T-21	9T-23	9T-21	0.070	09:21 hr	2.334
216	P_9T-21_9T-19	9T-21	9T-19	0.074	09:21 hr	5.462
217	P_9T-19_9T-17	9T-19	9T-17	0.078	09:25 hr	1.409
218	P_9T-17_9T-15	9T-17	9T-15	0.080	09:27 hr	1.921
219	P_9T-15_9T-13	9T-15	9T-13	0.085	09:29 hr	2.717
220	P_9T-13_9T-11	9T-13	9T-11	0.123	09:30 hr	3.779
221	P_9T-11_9T-07	9T-11	9T-07	0.150	09:34 hr	1.758
222	P_9T-07_9T-05	9T-07	9T-05	0.150	09:38 hr	1.884
223	P_9B-01_9T-15	9B-01	9T-15	0.003	00:03 hr	0.671
224	P_9D-01A_9T-21	9D-01A	9T-21	0.002	00:02 hr	0.874
225	P_W13-07_W13-05	W13-07	W13-05	0.442	09:51 hr	3.319
226	P_W13-05_W13-03	W13-05	W13-03	0.442	09:54 hr	2.797
227	P_W13-03_W13-01	W13-03	W13-01	0.443	09:56 hr	2.726
228	P_13B-01_W13-01	13B-01	W13-01	0.001	00:00 hr	0.540
229	P_W13-01_IW-12	W13-01	IW-12	0.445	09:55 hr	2.987
230	P_IW-12_IW-13	IW-12	IW-13	0.890	10:03 hr	4.303
231	P_IW-13_IW-16	IW-13	IW-16	0.890	10:04 hr	3.509
232	P_I-09_I-07	I-09	I-07	0.421	09:50 hr	1.851
233	P_I-07_I-05	I-07	I-05	0.421	09:52 hr	2.059
234	P_I-05_I-04	I-05	I-04	0.421	09:54 hr	2.624
235	P_I-04_I-03	I-04	I-03	0.439	09:57 hr	2.529
236	P_I-03_I-01	I-03	I-01	0.440	09:55 hr	2.865
237	P_I-01_IW-01	I-01	IW-01	0.442	09:57 hr	3.399
238	P_IW-04_IW-05	IW-04	IW-05	0.444	09:59 hr	3.590
239	P_IW-05_IW-09	IW-05	IW-09	0.444	10:02 hr	3.078
240	P_IW-09_IW-12	IW-09	IW-12	0.444	10:02 hr	2.869
241	P_W5B-01_W5A-01	W5B-01	W5A-01	0.002	00:01 hr	1.118
242	P_W5A-01_I-04	W5A-01	I-04	0.019	00:10 hr	2.734
243	P_W13-09_W13-07	W13-09	W13-07	0.000	00:02 hr	0.374
244	P_IW-01_IW-04	IW-01	IW-04	0.442	09:58 hr	3.219
245	P_W5B-03_W5B-01	W5B-03	W5B-01	0.000	00:01 hr	0.620
246	P_S20-03_S20-01	S20-03	S20-01	0.023	09:09 hr	1.335
247	P_N13-17_N13-15	N13-17	N13-15	0.359	09:32 hr	3.413
248	P_17A-01_N13-17	17A-01	N13-17	0.005	00:03 hr	1.259
249	P_N13-15_N13-13	N13-15	N13-13	0.360	09:33 hr	1.925
250	P_N13-13_N13-11	N13-13	N13-11	0.383	09:37 hr	2.170
251	P_N13-11_N13-09	N13-11	N13-09	0.415	09:41 hr	2.226
252	P_N13-11_E13-01	E13-01	N13-11	0.031	00:09 hr	2.229

		ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
253		P_N13-09_N13-07	N13-09	N13-07	0.419	09:43 hr	2.558
254		P_N13-07_N13-04	N13-07	N13-04	0.429	09:47 hr	2.142
255		P_N13-04_W13-07	N13-04	W13-07	0.432	09:49 hr	2.199
256		P_N13-23_N13-21	N13-23	N13-21	0.346	09:27 hr	4.690
257		P_N13-21_N13-19	N13-21	N13-19	0.346	09:27 hr	4.132
258		P_N13-19_N13-17	N13-19	N13-17	0.351	09:29 hr	2.616
259		P_E13B-03_N13-19	E13B-03	N13-19	0.002	00:00 hr	0.680
260		P_NA13-01_N13-23	NA13-01	N13-23	0.000	00:00 hr	0.000
261		P_N13-31_N13-29	N13-31	N13-29	0.333	09:23 hr	4.332
262		P_N13-29_N13-27	N13-29	N13-27	0.346	09:24 hr	3.798
263		P_N13-27_N13-25	N13-27	N13-25	0.346	09:24 hr	3.898
264		P_N13-37_N13-35	N13-37	N13-35	0.328	09:20 hr	3.817
265		P_N13-35_N13-33	N13-35	N13-33	0.331	09:24 hr	3.873
266		P_N13-33_N13-31	N13-33	N13-31	0.333	09:24 hr	3.544
267		P_N13-25_N13-23	N13-25	N13-23	0.346	09:26 hr	2.911
268		P_Z-07_Z-05	Z-07	Z-05	0.286	09:19 hr	2.732
269		P_Z-05_N13-37	Z-05	N13-37	0.289	09:20 hr	3.286
270		P_N13-39_N13-37	N13-39	N13-37	0.036	00:12 hr	1.747

2030 Model Results for Surveyed Lines and Outfall Line

	ID	Maximum Water Depth (ft)	Maximum Froude Number	Maximum d/D	Maximum Overflow (cfs)	Maximum Adjusted Depth (ft)
1	OUTLET_PIPE	0.716	0.619	0.477	-2.479	0.716
2	SEMH02124_SEMH02125	0.592	0.813	0.395	-4.018	0.592
3	SEMH02243_SEMH02244	0.500	1.203	0.333	-6.728	0.607
4	SEMH01336_SEMH02236	0.372	1.980	0.248	-12.651	0.449
5	SEMH02235_SEMH01336	0.586	0.828	0.391	-4.137	0.586
6	SEMH02234_SEMH02235	0.524	1.020	0.350	-5.539	0.554
7	SEMH02232_SEMH02233	0.366	2.040	0.244	-13.102	0.447
8	SEMH02233_SEMH02234	0.528	1.006	0.352	-5.431	0.528
9	SEMH02231_SEMH02232	0.575	0.858	0.383	-4.358	0.575
10	SEMH02113_SEMH02115	0.768	0.750	0.768	-0.134	0.768
11	SEMH02230_SEMH02231	0.436	1.454	0.291	-8.731	0.505
12	SEMH02229_SEMH02230	1.500	0.160	1.000	1.537	1.500
13	SEMH02237_SEMH02238	0.715	0.578	0.476	-2.311	0.715
14	SEMH02236_SEMH02237	0.528	1.007	0.352	-5.439	0.620
15	SEMH02125_SEMH02229	0.454	1.346	0.302	-7.932	1.007
16	SEMH02114_SEMH02124	0.441	1.420	0.294	-8.480	0.516
17	SEMH02115_SEMH02114	0.384	1.860	0.256	-11.750	0.413
18	SEMH03023_SEMH02113	0.444	1.810	0.444	-2.873	0.606
19	SEMH02238_SEMH02239	0.443	1.407	0.296	-8.383	0.488
20	SEMH02240_SEMH02243	0.463	1.397	0.309	-8.151	0.481
21	SEMH02239_SEMH02240	0.534	1.063	0.356	-5.698	0.534
22	P_IW-19_IW-22	0.447	1.446	0.447	-2.292	0.893
23	P_IW-22_IW-26-METER	0.513	1.126	0.513	-1.466	1.000
24	P_IW-26-METER_IW-26	0.595	0.871	0.595	-0.813	1.000
25	P_S19-04_S19-03	0.425	0.587	0.340	-2.055	0.426
26	P_S19-03_S19-02	0.412	0.626	0.330	-2.233	0.470
27	P_S19-02_S19-01	0.513	0.415	0.411	-1.252	0.513
28	P_S19-01_IW-19	0.479	0.487	0.383	-1.563	0.479
29	SEMH04165_SEMH02154	0.379	1.969	0.379	-3.656	0.812
30	SEMH04007_SEMH02161	0.476	1.294	0.476	-1.885	0.801
31	SEMH02155_SEMH02154	0.082	1.776	0.082	-5.214	0.663
32	SEMH02154_SEMH02112	0.776	0.772	0.776	-0.109	1.000
33	SEMH02112_SEMH03023	1.000	0.442	1.000	1.298	1.000
34	SEMH02161_SEMH04165	1.000	0.359	1.000	0.649	1.000
35	P_IW-26_SEMH04007	0.398	1.796	0.398	-3.200	0.437
36	P_IW-16_IW-19	0.367	1.158	0.367	-2.207	0.512
37	P_S11-01_S19-11	0.225	1.422	0.270	-2.024	0.252
38	P_S19-11_S19-07	0.378	0.712	0.303	-2.658	0.378
39	P_S19-07_S19-04	0.359	0.788	0.287	-3.016	0.392
40	P_E19-02_E19-01	0.176	1.293	0.264	-1.063	0.180
41	P_E19-01_S19-21	0.184	1.183	0.277	-0.955	0.211
42	P_S19-21_S19-19	0.237	0.707	0.189	-3.096	0.247
43	P_S19-19_S19-15	0.258	0.599	0.206	-2.567	0.258
44	P_S19-15_S19-13	0.259	0.594	0.207	-2.541	0.259
45	P_S19-13_S19-12	0.255	0.639	0.204	-2.745	0.255
46	P_S19-12_S19-11	0.128	2.471	0.103	-12.200	0.255
47	P_S20-01_S19-01	0.232	0.091	0.348	-0.065	0.232
48	P_S11-03_S11-01	0.204	1.727	0.245	-2.549	0.215
49	P_S11-21_S11-19	0.203	1.582	0.305	-1.224	0.203
50	P_S11-19_S11-17	0.146	2.764	0.175	-4.472	0.146
51	P_S11-17_S11-15	0.123	3.886	0.148	-6.522	0.143
52	P_S11-15_S11-13	0.162	2.262	0.195	-3.569	0.164
53	P_S11-13_S11-11	0.166	2.211	0.199	-3.467	0.168
54	P_S11-11_S11-09	0.169	2.219	0.203	-3.462	0.193
55	P_S11-09_S11-07	0.218	1.467	0.261	-2.116	0.240
56	P_S11-07_S11-05	0.263	1.053	0.315	-1.398	0.263
57	P_S11-05_S11-03	0.236	1.301	0.283	-1.818	0.236
58	P_B11-01_S11-09	0.059	1.079	0.089	-1.133	0.059
59	P_I-17_I-19	0.000	0.000	0.000	-2.207	0.010
60	P_19T-11_19T-09	0.017	1.066	0.025	-1.367	0.020
61	P_19T-09_19T-07	0.023	1.141	0.034	-1.393	0.027
62	P_19T-07_19T-05	0.031	1.088	0.047	-1.263	0.033
63	P_19T-05_19T-03	0.035	1.067	0.052	-1.218	0.044

2030 Model Results for Surveyed Lines and Outfall Line

	ID	Maximum Water Depth (ft)	Maximum Froude Number	Maximum d/D	Maximum Overflow (cfs)	Maximum Adjusted Depth (ft)
64	P_19T-03_19T-01	0.053	0.634	0.080	-0.677	0.056
65	P_19T-01_S11-19	0.059	0.683	0.088	-0.718	0.078
66	P_19C-01_19T-11	0.014	1.252	0.021	-1.656	0.014
67	P_19M-07_19M-05	0.122	1.286	0.182	-1.180	0.127
68	P_19M-05_19M-03	0.133	1.102	0.199	-0.990	0.136
69	P_19-01_19M-07	0.028	3.257	0.043	-3.840	0.075
70	P_19D-15_19D-13	0.000	0.000	0.000	-3.965	0.042
71	P_19D-13_19M-15	0.084	1.176	0.126	-1.164	0.084
72	P_19M-15_19M-13	0.064	2.288	0.097	-2.371	0.064
73	P_19M-13_19M-11	0.057	2.904	0.086	-3.069	0.060
74	P_19M-11_19M-09	0.063	2.441	0.095	-2.537	0.069
75	P_19M-09_19M-08	0.075	2.477	0.112	-2.503	0.075
76	P_19M-08_19M-07	0.073	2.566	0.110	-2.601	0.097
77	P_METER-NO-FLOW_19D-13	0.101	0.783	0.152	-0.748	0.101
78	P_19D-11_METER-NO-FLOW	0.120	0.564	0.179	-0.520	0.120
79	P_E19-18_E19-20	0.020	2.227	0.030	-2.770	0.023
80	P_E19-18_E19-17	0.025	1.767	0.038	-2.120	0.035
81	P_E19-17_E19-15	0.044	1.971	0.066	-2.171	0.044
82	P_E19-15_E19-14	0.041	2.317	0.061	-2.580	0.044
83	P_E19-14_E19-11	0.047	2.333	0.071	-2.539	0.054
84	P_E19-11_E19-08	0.061	1.972	0.092	-2.060	0.115
85	P_E19-08_E19-05	0.168	1.173	0.252	-0.981	0.168
86	P_19B-01_E19-08	0.111	1.852	0.166	-1.736	0.111
87	P_E19-20_E19-24	0.010	2.284	0.015	-3.180	0.667
88	P_E19-05_E19-02	0.154	1.400	0.231	-1.205	0.165
89	P_19M-03_19M-01	0.139	1.036	0.208	-0.920	0.139
90	P_19M-01_19B-07	0.128	1.227	0.192	-1.113	0.128
91	P_19B-07_19B-05	0.163	0.834	0.244	-0.705	0.163
92	P_19B-05_19B-03	0.142	1.095	0.214	-0.965	0.144
93	P_19B-03_19B-01	0.145	1.069	0.218	-0.936	0.145
94	P_19S-01_19B-07	0.034	0.937	0.051	-1.075	0.098
95	P_I-27_I-25	0.180	1.836	0.270	-1.497	0.180
96	P_I-25_I-23	0.179	1.856	0.269	-1.516	0.184
97	P_I-23_I-21	0.189	1.805	0.283	-1.443	0.202
98	P_I-21_S11-21	0.214	1.423	0.322	-1.070	0.214
99	P_I-39_I-37	0.281	0.696	0.422	-0.429	0.281
100	P_I-37_I-35	0.174	1.748	0.261	-1.443	0.174
101	P_I-35_I-33	0.160	2.083	0.240	-1.771	0.160
102	P_I-33_I-31	0.159	2.127	0.238	-1.813	0.161
103	P_I-31_I-29	0.164	2.022	0.246	-1.706	0.214
104	P_I-29_I-27	0.264	0.807	0.396	-0.526	0.264
105	P_39T-09_39T-06	0.059	2.780	0.089	-2.921	0.074
106	P_39T-06_39T-05	0.088	1.304	0.132	-1.280	0.088
107	P_39T-05_39T-03	0.070	2.107	0.105	-2.154	0.080
108	P_39T-03_39T-01	0.091	1.320	0.137	-1.288	0.104
109	P_39T-01_I-39	0.116	0.833	0.174	-0.773	0.199
110	P_39T-11_39T-09	0.052	0.834	0.078	-0.894	0.056
111	P_I-43_I-41	0.108	3.405	0.163	-3.208	0.111
112	P_I-41_I-39	0.113	3.170	0.169	-2.959	0.197
113	P_I-51_I-49	0.119	2.805	0.179	-2.585	0.120
114	P_I-49_I-47	0.122	2.705	0.182	-2.483	0.122
115	P_I-47_I-45	0.121	2.750	0.181	-2.529	0.136
116	P_I-45_I-43	0.151	1.770	0.227	-1.533	0.151
117	P_51T-00_I-51	0.041	2.508	0.062	-2.790	0.041
118	P_51T-01_51T-00	0.039	2.829	0.058	-3.180	0.040
119	P_51T-02_51T-01	0.050	1.660	0.076	-1.789	0.050
120	P_39B-01_39T-09	0.056	2.370	0.084	-2.513	0.056
121	P_39B-15_39B-13	0.035	5.540	0.053	-6.320	0.051
122	P_39B-13_39B-11	0.066	1.570	0.099	-1.620	0.066
123	P_39B-11_39B-09	0.085	0.950	0.128	-0.938	0.085
124	P_39B-09_39B-07	0.084	0.976	0.126	-0.965	0.086
125	P_39B-07_39B-05	0.088	0.898	0.132	-0.882	0.088
126	P_39B-05_39B-03	0.104	0.653	0.156	-0.620	0.104

2040 Model Results for Surveyed Lines and Outfall Line

	ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
1	OUTLET_PIPE	SEMH02244	LOGAN_CITY_OUTLET	2.888	10:31 hr	2.751
2	SEMH02124_SEMH02125	SEMH02124	SEMH02125	2.478	10:10 hr	3.228
3	SEMH04165_SEMH02154	SEMH04165	SEMH02154	2.061	10:29 hr	6.288
4	SEMH02243_SEMH02244	SEMH02243	SEMH02244	2.888	10:30 hr	4.480
5	SEMH01336_SEMH02236	SEMH01336	SEMH02236	2.478	10:26 hr	6.163
6	SEMH02235_SEMH01336	SEMH02235	SEMH01336	2.478	10:26 hr	3.275
7	SEMH02234_SEMH02235	SEMH02234	SEMH02235	2.478	10:23 hr	3.812
8	SEMH02232_SEMH02233	SEMH02232	SEMH02233	2.478	10:19 hr	6.297
9	SEMH02233_SEMH02234	SEMH02233	SEMH02234	2.478	10:21 hr	3.772
10	SEMH02231_SEMH02232	SEMH02231	SEMH02232	2.478	10:18 hr	3.363
11	SEMH02113_SEMH02115	SEMH02113	SEMH02115	2.478	10:08 hr	3.155
12	SEMH02230_SEMH02231	SEMH02230	SEMH02231	2.478	10:17 hr	4.927
13	SEMH02155_SEMH02154	SEMH02155	SEMH02154	0.071	09:29 hr	2.362
14	SEMH02229_SEMH02230	SEMH02229	SEMH02230	2.478	10:14 hr	1.402
15	SEMH02237_SEMH02238	SEMH02237	SEMH02238	2.478	10:30 hr	2.511
16	SEMH02236_SEMH02237	SEMH02236	SEMH02237	2.478	10:28 hr	3.775
17	SEMH02125_SEMH02229	SEMH02125	SEMH02229	2.478	10:12 hr	4.659
18	SEMH02114_SEMH02124	SEMH02114	SEMH02124	2.478	10:09 hr	4.844
19	SEMH02154_SEMH02112	SEMH02154	SEMH02112	2.478	10:02 hr	3.155
20	SEMH03084_SEMH02155	SEMH03084	SEMH02155	0.071	09:28 hr	2.230
21	SEMH02115_SEMH02114	SEMH02115	SEMH02114	2.478	10:08 hr	5.888
22	SEMH03023_SEMH02113	SEMH03023	SEMH02113	2.478	10:04 hr	6.201
23	SEMH02112_SEMH03023	SEMH02112	SEMH03023	2.478	10:04 hr	3.155
24	SEMH02238_SEMH02239	SEMH02238	SEMH02239	2.478	10:31 hr	4.811
25	SEMH02240_SEMH02243	SEMH02240	SEMH02243	2.888	10:29 hr	4.992
26	SEMH02239_SEMH02240	SEMH02239	SEMH02240	2.888	10:27 hr	4.092
27	P_IW-19_IW-22	IW-19	IW-22	2.060	10:22 hr	5.027
28	P_IW-22_IW-26-METER	IW-22	IW-26-METER	2.060	10:22 hr	4.187
29	P_IW-26-METER_IW-26	IW-26-METER	IW-26	2.061	10:25 hr	3.454
30	SEMH04007_SEMH02161	SEMH04007	SEMH02161	2.061	10:27 hr	4.624
31	SEMH02161_SEMH04165	SEMH02161	SEMH04165	2.061	10:28 hr	2.624
32	P_IW-26_SEMH04007	IW-26	SEMH04007	2.061	10:25 hr	5.881
33	P_S19-11_S19-07	S19-11	S19-07	0.807	10:14 hr	2.231
34	P_S19-07_S19-04	S19-07	S19-04	0.807	10:17 hr	2.402
35	P_S19-04_S19-03	S19-04	S19-03	0.828	10:19 hr	1.955
36	P_S19-03_S19-02	S19-03	S19-02	0.830	10:19 hr	2.048
37	P_S19-02_S19-01	S19-02	S19-01	0.830	10:20 hr	1.517
38	P_S19-01_IW-19	S19-01	IW-19	0.852	10:22 hr	1.717
39	P_E19-01_S19-21	E19-01	S19-21	0.224	09:45 hr	2.549
40	P_S19-21_S19-19	S19-21	S19-19	0.309	09:46 hr	1.708
41	P_S19-19_S19-15	S19-19	S19-15	0.310	09:50 hr	1.514
42	P_S19-15_S19-13	S19-15	S19-13	0.310	09:55 hr	1.506
43	P_S19-13_S19-12	S19-13	S19-12	0.321	10:01 hr	1.601
44	P_S19-12_S19-11	S19-12	S19-11	0.321	10:00 hr	4.342
45	P_E19-18_E19-20	E19-20	E19-18	0.005	00:02 hr	1.471
46	P_E19-18_E19-17	E19-18	E19-17	0.006	00:03 hr	1.308
47	P_E19-17_E19-15	E19-17	E19-15	0.019	00:07 hr	1.928
48	P_E19-15_E19-14	E19-15	E19-14	0.019	00:07 hr	2.186
49	P_E19-14_E19-11	E19-14	E19-11	0.026	00:09 hr	2.373
50	P_E19-11_E19-08	E19-11	E19-08	0.037	00:11 hr	2.286
51	P_E19-08_E19-05	E19-08	E19-05	0.194	09:39 hr	2.436
52	P_E19-05_E19-02	E19-05	E19-02	0.197	09:42 hr	2.783
53	P_E19-02_E19-01	E19-02	E19-01	0.224	09:43 hr	2.716
54	P_19B-01_E19-08	19B-01	E19-08	0.147	09:37 hr	3.162
55	P_19B-05_19B-03	19B-05	19B-03	0.143	09:33 hr	2.135
56	P_19B-03_19B-01	19B-03	19B-01	0.144	09:36 hr	2.103
57	P_19B-07_19B-05	19B-07	19B-05	0.142	09:32 hr	1.746
58	P_19M-07_19M-05	19M-07	19M-05	0.128	09:26 hr	2.336
59	P_19M-05_19M-03	19M-05	19M-03	0.130	09:28 hr	2.092
60	P_19M-03_19M-01	19M-03	19M-01	0.132	09:30 hr	2.010
61	P_19M-01_19B-07	19M-01	19B-07	0.133	09:30 hr	2.279
62	P_19M-08_19M-07	19M-08	19M-07	0.080	09:24 hr	3.424
63	P_19D-15_19D-13	19D-15	19D-13	0.000	00:00 hr	0.000

2040 Model Results for Surveyed Lines and Outfall Line

			ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
64			P_19D-13_19M-15	19D-13	19M-15	0.053	09:20 hr	1.732
65			P_19M-15_19M-13	19M-15	19M-13	0.059	09:20 hr	2.913
66			P_19M-13_19M-11	19M-13	19M-11	0.059	09:22 hr	3.479
67			P_19M-11_19M-09	19M-11	19M-09	0.061	09:24 hr	3.077
68			P_19M-09_19M-08	19M-09	19M-08	0.080	09:24 hr	3.335
69			P_METER-NO-FLOW_19D-13	METER-NO-FLOW	19D-13	0.052	09:19 hr	1.273
70			P_S11-21_S11-19	S11-21	S11-19	0.394	10:04 hr	3.679
71			P_19T-11_19T-09	19T-11	19T-09	0.001	00:04 hr	0.638
72			P_19T-09_19T-07	19T-09	19T-07	0.003	00:07 hr	0.800
73			P_19T-07_19T-05	19T-07	19T-05	0.005	00:10 hr	0.896
74			P_19T-05_19T-03	19T-05	19T-03	0.007	00:13 hr	0.929
75			P_19T-03_19T-01	19T-03	19T-01	0.009	00:17 hr	0.682
76			P_19T-01_S11-19	19T-01	S11-19	0.012	09:03 hr	0.774
77			P_I-27_I-25	I-27	I-25	0.368	10:02 hr	4.021
78			P_I-25_I-23	I-25	I-23	0.370	10:03 hr	4.059
79			P_I-23_I-21	I-23	I-21	0.391	10:06 hr	4.037
80			P_I-21_S11-21	I-21	S11-21	0.394	10:04 hr	3.406
81			P_I-39_I-37	I-39	I-37	0.337	09:48 hr	1.946
82			P_I-37_I-35	I-37	I-35	0.337	09:50 hr	3.789
83			P_I-35_I-33	I-35	I-33	0.341	09:52 hr	4.318
84			P_I-33_I-31	I-33	I-31	0.343	09:55 hr	4.391
85			P_39T-09_39T-06	39T-09	39T-06	0.085	09:25 hr	3.756
86			P_39T-06_39T-05	39T-06	39T-05	0.086	09:27 hr	2.146
87			P_39T-05_39T-03	39T-05	39T-03	0.088	09:28 hr	3.074
88			P_39T-03_39T-01	39T-03	39T-01	0.091	09:30 hr	2.189
89			P_39T-01_I-39	39T-01	I-39	0.092	09:34 hr	1.563
90			P_I-43_I-41	I-43	I-41	0.242	09:44 hr	5.638
91			P_I-41_I-39	I-41	I-39	0.244	09:46 hr	5.358
92			P_I-31_I-29	I-31	I-29	0.345	09:57 hr	4.239
93			P_I-29_I-27	I-29	I-27	0.345	09:59 hr	2.179
94			P_39B-01_39T-09	39B-01	39T-09	0.062	09:25 hr	3.060
95			P_39B-07_39B-05	39B-07	39B-05	0.059	09:20 hr	1.473
96			P_39B-05_39B-03	39B-05	39B-03	0.059	09:22 hr	1.165
97			P_39B-03_39B-01	39B-03	39B-01	0.061	09:23 hr	2.511
98			P_39B-09_39B-07	39B-09	39B-07	0.059	09:19 hr	1.566
99			P_39B-15_39B-13	39B-15	39B-13	0.059	09:14 hr	5.710
100			P_39B-13_39B-11	39B-13	39B-11	0.059	09:14 hr	2.231
101			P_39B-11_39B-09	39B-11	39B-09	0.059	09:16 hr	1.536
102			P_I-59_I-57	I-59	I-57	0.217	09:35 hr	3.927
103			P_I-57_I-56	I-57	I-56	0.218	09:38 hr	3.363
104			P_I-63_I-61	I-63	I-61	0.211	09:31 hr	4.001
105			P_I-61_I-59	I-61	I-59	0.215	09:33 hr	3.416
106			P_I-65_I-63	I-65	I-63	0.210	09:30 hr	3.174
107			P_I-72_I-71	I-72	I-71	0.072	09:10 hr	2.258
108			P_I-71_I-69	I-71	I-69	0.073	09:11 hr	2.221
109			P_I-69_I-67	I-69	I-67	0.073	09:15 hr	1.235
110			P_I-67_I-66	I-67	I-66	0.075	09:16 hr	0.741
111			P_I-66_I-65	I-66	I-65	0.165	09:28 hr	1.634
112			P_I-77_I-75	I-77	I-75	0.049	09:05 hr	2.220
113			P_I-75_I-73	I-75	I-73	0.050	09:08 hr	1.459
114			P_I-73_I-72	I-73	I-72	0.052	09:09 hr	2.004
115			P_I-78_I-77	I-78	I-77	0.043	09:04 hr	2.081
116			P_I-85_I-83	I-85	I-83	0.009	00:14 hr	0.885
117			P_I-83_I-81	I-83	I-81	0.010	00:16 hr	0.926
118			P_I-81_I-79	I-81	I-79	0.023	09:01 hr	2.049
119			P_I-79_I-78	I-79	I-78	0.042	09:03 hr	1.513
120			P_I-88_I-87	I-88	I-87	0.005	00:08 hr	1.415
121			P_I-87_I-86	I-87	I-86	0.005	00:09 hr	0.641
122			P_I-86_I-85	I-86	I-85	0.009	00:11 hr	0.909
123			P_I-102_I-100	I-102	I-100	0.000	00:00 hr	0.000
124			P_I-100_I-98	I-100	I-98	0.001	00:01 hr	0.825
125			P_I-98_I-96	I-98	I-96	0.002	00:02 hr	1.674
126			P_I-96_I-94	I-96	I-94	0.003	00:03 hr	1.856

2040 Model Results for Surveyed Lines and Outfall Line

			ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
127			P_I-94_I-92	I-94	I-92	0.004	00:04 hr	1.850
128			P_I-92_I-90	I-92	I-90	0.004	00:06 hr	0.791
129			P_I-90_I-88	I-90	I-88	0.005	00:08 hr	0.712
130			P_I-53_I-51	I-53	I-51	0.219	09:37 hr	4.757
131			P_51T-00_I-51	51T-00	I-51	0.021	00:18 hr	2.376
132			P_I-56_I-55	I-56	I-55	0.218	09:37 hr	3.287
133			P_I-55_I-53	I-55	I-53	0.218	09:38 hr	3.537
134			P_I-51_I-49	I-51	I-49	0.241	09:39 hr	4.883
135			P_I-47_I-45	I-47	I-45	0.241	09:41 hr	4.814
136			P_I-45_I-43	I-45	I-43	0.241	09:44 hr	3.487
137			P_I-49_I-47	I-49	I-47	0.241	09:41 hr	4.757
138			P_S11-05_S11-03	S11-05	S11-03	0.485	10:10 hr	3.240
139			P_S11-03_S11-01	S11-03	S11-01	0.486	10:10 hr	3.981
140			P_S11-01_S19-11	S11-01	S19-11	0.486	10:12 hr	3.457
141			P_S11-07_S11-05	S11-07	S11-05	0.485	10:07 hr	2.782
142			P_S11-09_S11-07	S11-09	S11-07	0.472	10:05 hr	3.508
143			P_S11-15_S11-13	S11-15	S11-13	0.408	10:06 hr	4.624
144			P_S11-13_S11-11	S11-13	S11-11	0.416	10:07 hr	4.570
145			P_S11-11_S11-09	S11-11	S11-09	0.444	10:02 hr	4.668
146			P_S11-19_S11-17	S11-19	S11-17	0.407	10:04 hr	5.356
147			P_S11-17_S11-15	S11-17	S11-15	0.407	10:05 hr	6.885
148			P_13B-01_W13-01	13B-01	W13-01	0.001	00:00 hr	0.540
149			P_W13-01_IW-12	W13-01	IW-12	0.667	09:55 hr	3.353
150			P_IW-12_IW-13	IW-12	IW-13	1.204	10:04 hr	4.681
151			P_IW-13_IW-16	IW-13	IW-16	1.204	10:06 hr	3.809
152			P_IW-16_IW-19	IW-16	IW-19	1.206	10:07 hr	3.698
153			P_W13-03_W13-01	W13-03	W13-01	0.665	09:56 hr	3.060
154			P_IW-09_IW-12	IW-09	IW-12	0.536	10:04 hr	3.030
155			P_W13-05_W13-03	W13-05	W13-03	0.663	09:52 hr	3.141
156			P_IW-05_IW-09	IW-05	IW-09	0.536	10:02 hr	3.252
157			P_W13-07_W13-05	W13-07	W13-05	0.663	09:53 hr	3.733
158			P_IW-04_IW-05	IW-04	IW-05	0.536	10:00 hr	3.794
159			P_IW-01_IW-04	IW-01	IW-04	0.535	09:58 hr	3.402
160			P_N13-07_N13-04	N13-07	N13-04	0.651	09:46 hr	2.405
161			P_N13-04_W13-07	N13-04	W13-07	0.654	09:50 hr	2.468
162			P_I-03_I-01	I-03	I-01	0.533	09:57 hr	3.027
163			P_I-01_IW-01	I-01	IW-01	0.535	09:59 hr	3.592
164			P_I-09_I-07	I-09	I-07	0.513	09:49 hr	1.956
165			P_I-07_I-05	I-07	I-05	0.513	09:53 hr	2.177
166			P_I-05_I-04	I-05	I-04	0.513	09:54 hr	2.779
167			P_I-04_I-03	I-04	I-03	0.532	09:57 hr	2.670
168			P_W5B-01_W5A-01	W5B-01	W5A-01	0.002	00:01 hr	1.118
169			P_W5A-01_I-04	W5A-01	I-04	0.019	00:10 hr	2.734
170			P_W5B-03_W5B-01	W5B-03	W5B-01	0.000	00:01 hr	0.620
171			P_I-11_I-09	I-11	I-09	0.292	09:43 hr	2.260
172			P_N13-11_N13-09	N13-11	N13-09	0.637	09:40 hr	2.510
173			P_N13-09_N13-07	N13-09	N13-07	0.641	09:43 hr	2.887
174			P_N13-13_N13-11	N13-13	N13-11	0.605	09:39 hr	2.468
175			P_N13-15_N13-13	N13-15	N13-13	0.581	09:35 hr	2.203
176			P_N13-17_N13-15	N13-17	N13-15	0.581	09:31 hr	3.928
177			P_N13-21_N13-19	N13-21	N13-19	0.568	09:28 hr	4.781
178			P_N13-19_N13-17	N13-19	N13-17	0.573	09:29 hr	3.012
179			P_N13-23_N13-21	N13-23	N13-21	0.568	09:28 hr	5.430
180			P_N13-35_N13-33	N13-35	N13-33	0.541	09:23 hr	4.476
181			P_N13-33_N13-31	N13-33	N13-31	0.543	09:23 hr	4.091
182			P_N13-31_N13-29	N13-31	N13-29	0.543	09:24 hr	5.006
183			P_N13-29_N13-27	N13-29	N13-27	0.568	09:24 hr	4.393
184			P_N13-27_N13-25	N13-27	N13-25	0.568	09:25 hr	4.510
185			P_N13-25_N13-23	N13-25	N13-23	0.568	09:26 hr	3.360
186			P_11T-03_11T-01	11T-03	11T-01	0.270	09:40 hr	3.434
187			P_11T-01_I-11	11T-01	I-11	0.271	09:48 hr	2.982
188			P_9T-05_9T-03	9T-05	9T-03	0.219	09:42 hr	1.771
189			P_9T-03_9T-02	9T-03	9T-02	0.219	09:43 hr	1.974

			ID	From ID	To ID	Maximum Flow (cfs)	Maximum Flow Time (hour)	Maximum Velocity (ft/s)
190			P_9T-02_I-09	9T-02	I-09	0.221	09:45 hr	1.755
191			P_3T-01_9T-05	3T-01	9T-05	0.005	00:06 hr	0.884
192			P_9T-31_9T-29	9T-31	9T-29	0.124	09:12 hr	3.660
193			P_9T-29_9T-27	9T-29	9T-27	0.124	09:15 hr	2.149
194			P_9T-27_9T-25	9T-27	9T-25	0.126	09:18 hr	2.248
195			P_9T-25_9T-23	9T-25	9T-23	0.130	09:19 hr	2.750
196			P_9T-23_9T-21	9T-23	9T-21	0.131	09:21 hr	2.816
197			P_9T-21_9T-19	9T-21	9T-19	0.135	09:21 hr	6.561
198			P_9T-19_9T-17	9T-19	9T-17	0.139	09:25 hr	1.667
199			P_9T-17_9T-15	9T-17	9T-15	0.141	09:28 hr	2.272
200			P_9T-15_9T-13	9T-15	9T-13	0.146	09:29 hr	3.193
201			P_9T-13_9T-11	9T-13	9T-11	0.184	09:31 hr	4.262
202			P_9T-11_9T-07	9T-11	9T-07	0.212	09:35 hr	1.935
203			P_9T-07_9T-05	9T-07	9T-05	0.212	09:38 hr	2.076
204			P_11T-21_11T-19	11T-21	11T-19	0.248	09:25 hr	3.299
205			P_11T-19_11T-17	11T-19	11T-17	0.250	09:28 hr	3.376
206			P_11T-17_11T-15	11T-17	11T-15	0.253	09:30 hr	3.781
207			P_11T-15_11T-13	11T-15	11T-13	0.255	09:31 hr	3.472
208			P_11T-13_11T-11	11T-13	11T-11	0.259	09:32 hr	3.951
209			P_11T-11_11T-09	11T-11	11T-09	0.260	09:37 hr	3.699
210			P_11T-09_11T-05	11T-07	11T-05	0.263	09:39 hr	3.981
211			P_11T-05_11T-03	11T-05	11T-03	0.266	09:39 hr	4.061
212			P_11T-09_11T-07	11T-09	11T-07	0.263	09:36 hr	0.754
213			P_11E-03_11E-01	11E-03	11E-01	0.025	00:19 hr	2.699
214			P_11E-01_11T-21	11E-01	11T-21	0.027	00:20 hr	1.559
215			P_11T-33_11T-31	11T-33	11T-31	0.074	09:07 hr	4.625
216			P_11T-31_11T-29	11T-31	11T-29	0.074	09:09 hr	2.774
217			P_11T-29_11T-27	11T-29	11T-27	0.076	09:09 hr	4.156
218			P_11T-27_11T-26	11T-27	11T-26	0.076	09:10 hr	2.245
219			P_11T-26_11T-25	11T-26	11T-25	0.076	09:10 hr	3.212
220			P_11T-39_11T-37	11T-39	11T-37	0.061	00:23 hr	2.396
221			P_11T-37_11T-35	11T-37	11T-35	0.063	00:25 hr	2.184
222			P_11T-35_11T-33	11T-35	11T-33	0.073	09:07 hr	2.911
223			P_11T-25_11T-23	11T-25	11T-23	0.218	09:22 hr	4.191
224			P_11T-23_11T-21	11T-23	11T-21	0.220	09:26 hr	4.064
225			P_11F-03_11F-01	11F-02	11F-01	0.142	09:21 hr	1.719
226			P_11F-01_11T-25	11F-01	11T-25	0.142	09:21 hr	4.034
227			P_11F-03_11F-02	11F-03	11F-02	0.142	09:19 hr	1.514
228			P_11F-02_11F-03	11F-03	11F-02	0.000	00:00 hr	0.000
229			P_11F-03_11F-04	11F-04	11F-03	0.142	09:19 hr	5.815
230			P_9T-35_9T-34	9T-35	9T-34	0.119	09:09 hr	1.460
231			P_9T-34_9T-33	9T-34	9T-33	0.120	09:10 hr	4.101
232			P_9T-33_9T-31	9T-33	9T-31	0.121	09:12 hr	3.409
233			P_Z-05_N13-37	Z-05	N13-37	0.499	09:20 hr	3.859
234			P_N13-37_N13-35	N13-37	N13-35	0.538	09:21 hr	4.415
235			P_Z-09_Z-07	Z-09	Z-07	0.461	09:19 hr	2.631
236			P_Z-07_Z-05	Z-07	Z-05	0.496	09:19 hr	3.207
237			P_Z-17_Z-15	Z-17	Z-15	0.332	09:13 hr	4.515
238			P_Z-15_Z-13	Z-15	Z-13	0.333	09:16 hr	4.016
239			P_Z-13_Z-11	Z-13	Z-11	0.370	09:16 hr	3.553
240			P_Z-11_Z-09	Z-11	Z-09	0.461	09:18 hr	4.297

2040 Model Results for Surveyed Lines and Outfall Line

	ID	Maximum Water Depth (ft)	Maximum Froude Number	Maximum d/D	Maximum Overflow (cfs)	Maximum Adjusted Depth (ft)
1	OUTLET_PIPE	0.861	0.624	0.574	-1.715	0.861
2	SEMH02124_SEMH02125	0.672	0.814	0.448	-3.511	0.672
3	SEMH04165_SEMH02154	0.435	1.967	0.435	-3.196	0.964
4	SEMH02243_SEMH02244	0.589	1.202	0.393	-5.964	0.723
5	SEMH01336_SEMH02236	0.418	1.986	0.279	-12.144	0.507
6	SEMH02235_SEMH01336	0.665	0.824	0.443	-3.629	0.665
7	SEMH02234_SEMH02235	0.593	1.019	0.395	-5.032	0.628
8	SEMH02232_SEMH02233	0.411	2.047	0.274	-12.595	0.504
9	SEMH02233_SEMH02234	0.598	1.004	0.399	-4.923	0.598
10	SEMH02231_SEMH02232	0.652	0.856	0.435	-3.850	0.652
11	SEMH02113_SEMH02115	1.000	0.735	1.000	0.373	1.000
12	SEMH02230_SEMH02231	0.491	1.454	0.327	-8.224	0.570
13	SEMH02155_SEMH02154	0.081	1.775	0.081	-5.215	0.798
14	SEMH02229_SEMH02230	1.500	0.201	1.000	2.045	1.500
15	SEMH02237_SEMH02238	0.819	0.579	0.546	-1.804	0.819
16	SEMH02236_SEMH02237	0.597	1.005	0.398	-4.932	0.707
17	SEMH02125_SEMH02229	0.511	1.346	0.341	-7.425	1.053
18	SEMH02114_SEMH02124	0.497	1.420	0.331	-7.973	0.584
19	SEMH02154_SEMH02112	1.000	0.775	1.000	0.399	1.000
20	SEMH03084_SEMH02155	0.084	1.643	0.084	-4.796	0.094
21	SEMH02115_SEMH02114	0.432	1.864	0.288	-11.242	0.464
22	SEMH03023_SEMH02113	0.507	1.803	0.507	-2.365	0.895
23	SEMH02112_SEMH03023	1.000	0.556	1.000	1.806	1.000
24	SEMH02238_SEMH02239	0.500	1.407	0.333	-7.875	0.564
25	SEMH02240_SEMH02243	0.544	1.396	0.363	-7.387	0.565
26	SEMH02239_SEMH02240	0.631	1.060	0.421	-4.934	0.631
27	P_IW-19_IW-22	0.517	1.432	0.517	-1.833	1.000
28	P_IW-22_IW-26-METER	0.600	1.107	0.600	-1.006	1.000
29	P_IW-26-METER_IW-26	0.710	0.850	0.710	-0.354	1.000
30	SEMH04007_SEMH02161	0.553	1.282	0.553	-1.426	0.904
31	SEMH02161_SEMH04165	1.000	0.462	1.000	1.108	1.000
32	P_IW-26_SEMH04007	0.458	1.789	0.458	-2.741	0.505
33	P_S19-11_S19-07	0.420	0.712	0.336	-2.512	0.420
34	P_S19-07_S19-04	0.398	0.788	0.318	-2.871	0.520
35	P_S19-04_S19-03	0.472	0.587	0.377	-1.909	0.721
36	P_S19-03_S19-02	0.456	0.625	0.365	-2.088	0.842
37	P_S19-02_S19-01	0.572	0.415	0.457	-1.107	0.897
38	P_S19-01_IW-19	0.531	0.487	0.425	-1.418	0.980
39	P_E19-01_S19-21	0.200	1.184	0.299	-0.923	0.228
40	P_S19-21_S19-19	0.256	0.711	0.205	-3.050	0.268
41	P_S19-19_S19-15	0.279	0.602	0.223	-2.521	0.280
42	P_S19-15_S19-13	0.281	0.597	0.225	-2.495	0.281
43	P_S19-13_S19-12	0.275	0.642	0.220	-2.700	0.275
44	P_S19-12_S19-11	0.138	2.492	0.110	-12.155	0.296
45	P_E19-18_E19-20	0.020	2.227	0.030	-2.770	0.023
46	P_E19-18_E19-17	0.025	1.767	0.038	-2.120	0.035
47	P_E19-17_E19-15	0.044	1.971	0.066	-2.171	0.044
48	P_E19-15_E19-14	0.041	2.317	0.061	-2.580	0.044
49	P_E19-14_E19-11	0.047	2.333	0.071	-2.539	0.054
50	P_E19-11_E19-08	0.061	1.972	0.092	-2.060	0.124
51	P_E19-08_E19-05	0.186	1.176	0.279	-0.946	0.186
52	P_E19-05_E19-02	0.171	1.406	0.257	-1.168	0.181
53	P_E19-02_E19-01	0.191	1.294	0.286	-1.031	0.195
54	P_19B-01_E19-08	0.127	1.872	0.191	-1.700	0.127
55	P_19B-05_19B-03	0.164	1.102	0.247	-0.929	0.166
56	P_19B-03_19B-01	0.167	1.075	0.251	-0.900	0.167
57	P_19B-07_19B-05	0.189	0.837	0.283	-0.669	0.189
58	P_19M-07_19M-05	0.143	1.300	0.214	-1.144	0.149
59	P_19M-05_19M-03	0.156	1.112	0.234	-0.954	0.159
60	P_19M-03_19M-01	0.162	1.045	0.244	-0.884	0.162
61	P_19M-01_19B-07	0.149	1.239	0.224	-1.077	0.149
62	P_19M-08_19M-07	0.079	2.589	0.119	-2.589	0.111
63	P_19D-15_19D-13	0.000	0.000	0.000	-3.965	0.048

2040 Model Results for Surveyed Lines and Outfall Line

	ID	Maximum Water Depth (ft)	Maximum Froude Number	Maximum d/D	Maximum Overflow (cfs)	Maximum Adjusted Depth (ft)
64	P_19D-13_19M-15	0.095	1.192	0.143	-1.152	0.095
65	P_19M-15_19M-13	0.072	2.318	0.108	-2.359	0.072
66	P_19M-13_19M-11	0.064	2.945	0.096	-3.057	0.067
67	P_19M-11_19M-09	0.070	2.473	0.106	-2.525	0.076
68	P_19M-09_19M-08	0.081	2.499	0.121	-2.491	0.081
69	P_METER-NO-FLOW_19D-13	0.116	0.793	0.173	-0.736	0.116
70	P_S11-21_S11-19	0.231	1.582	0.346	-1.139	0.231
71	P_19T-11_19T-09	0.017	1.066	0.025	-1.367	0.020
72	P_19T-09_19T-07	0.023	1.141	0.034	-1.393	0.027
73	P_19T-07_19T-05	0.031	1.088	0.047	-1.263	0.033
74	P_19T-05_19T-03	0.035	1.067	0.052	-1.218	0.044
75	P_19T-03_19T-01	0.053	0.634	0.080	-0.677	0.056
76	P_19T-01_S11-19	0.059	0.683	0.088	-0.718	0.086
77	P_I-27_I-25	0.206	1.838	0.309	-1.412	0.206
78	P_I-25_I-23	0.205	1.859	0.308	-1.430	0.210
79	P_I-23_I-21	0.214	1.805	0.321	-1.358	0.229
80	P_I-21_S11-21	0.244	1.421	0.366	-0.985	0.244
81	P_I-39_I-37	0.331	0.689	0.496	-0.345	0.331
82	P_I-37_I-35	0.202	1.751	0.302	-1.359	0.202
83	P_I-35_I-33	0.185	2.092	0.278	-1.686	0.185
84	P_I-33_I-31	0.183	2.136	0.275	-1.728	0.186
85	P_39T-09_39T-06	0.078	2.872	0.116	-2.884	0.096
86	P_39T-06_39T-05	0.115	1.337	0.173	-1.243	0.115
87	P_39T-05_39T-03	0.091	2.169	0.136	-2.117	0.104
88	P_39T-03_39T-01	0.117	1.352	0.176	-1.251	0.134
89	P_39T-01_I-39	0.150	0.848	0.225	-0.736	0.240
90	P_I-43_I-41	0.120	3.435	0.180	-3.161	0.123
91	P_I-41_I-39	0.125	3.196	0.188	-2.912	0.228
92	P_I-31_I-29	0.189	2.029	0.284	-1.621	0.249
93	P_I-29_I-27	0.309	0.801	0.464	-0.441	0.309
94	P_39B-01_39T-09	0.071	2.443	0.107	-2.488	0.071
95	P_39B-07_39B-05	0.115	0.921	0.172	-0.857	0.115
96	P_39B-05_39B-03	0.136	0.666	0.204	-0.595	0.136
97	P_39B-03_39B-01	0.081	1.880	0.121	-1.873	0.081
98	P_39B-09_39B-07	0.110	1.001	0.165	-0.940	0.112
99	P_39B-15_39B-13	0.045	5.743	0.068	-6.295	0.066
100	P_39B-13_39B-11	0.086	1.618	0.129	-1.595	0.086
101	P_39B-11_39B-09	0.111	0.975	0.167	-0.913	0.111
102	P_I-59_I-57	0.144	2.180	0.215	-1.917	0.152
103	P_I-57_I-56	0.161	1.758	0.241	-1.493	0.162
104	P_I-63_I-61	0.139	2.259	0.208	-2.004	0.148
105	P_I-61_I-59	0.157	1.807	0.236	-1.545	0.157
106	P_I-65_I-63	0.163	1.647	0.244	-1.393	0.163
107	P_I-72_I-71	0.098	1.529	0.147	-1.469	0.099
108	P_I-71_I-69	0.100	1.493	0.150	-1.431	0.125
109	P_I-69_I-67	0.151	0.668	0.226	-0.579	0.186
110	P_I-67_I-66	0.221	0.326	0.331	-0.241	0.221
111	P_I-66_I-65	0.221	0.719	0.331	-0.532	0.221
112	P_I-77_I-75	0.076	1.714	0.114	-1.726	0.089
113	P_I-75_I-73	0.103	0.967	0.154	-0.921	0.103
114	P_I-73_I-72	0.085	1.462	0.128	-1.444	0.092
115	P_I-78_I-77	0.073	1.643	0.109	-1.668	0.073
116	P_I-85_I-83	0.047	0.879	0.070	-0.960	0.047
117	P_I-83_I-81	0.048	0.906	0.072	-0.985	0.048
118	P_I-81_I-79	0.049	1.991	0.073	-2.159	0.667
119	P_I-79_I-78	0.089	1.078	0.134	-1.056	0.089
120	P_I-88_I-87	0.021	2.087	0.032	-2.574	0.029
121	P_I-87_I-86	0.036	0.722	0.054	-0.820	0.041
122	P_I-86_I-85	0.046	0.911	0.069	-0.998	0.046
123	P_I-102_I-100	0.000	0.000	0.000	-4.367	0.006
124	P_I-100_I-98	0.012	1.617	0.018	-2.183	0.012
125	P_I-98_I-96	0.010	3.636	0.015	-5.070	0.011
126	P_I-96_I-94	0.013	3.516	0.019	-4.693	0.014

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	ID	Maximum Water Depth (ft)	Maximum Froude Number	Maximum d/D	Maximum Overflow (cfs)	Maximum Adjusted Depth (ft)
127	P_I-94_I-92	0.015	3.291	0.022	-4.305	0.022
128	P_I-92_I-90	0.030	0.980	0.045	-1.145	0.032
129	P_I-90_I-88	0.034	0.832	0.051	-0.955	0.034
130	P_I-53_I-51	0.126	2.824	0.190	-2.568	0.130
131	P_51T-00_I-51	0.041	2.508	0.062	-2.790	0.041
132	P_I-56_I-55	0.163	1.703	0.245	-1.438	0.163
133	P_I-55_I-53	0.155	1.883	0.233	-1.617	0.155
134	P_I-51_I-49	0.133	2.826	0.199	-2.539	0.134
135	P_I-47_I-45	0.134	2.771	0.201	-2.482	0.151
136	P_I-45_I-43	0.168	1.778	0.252	-1.486	0.168
137	P_I-49_I-47	0.135	2.726	0.203	-2.436	0.135
138	P_S11-05_S11-03	0.266	1.301	0.319	-1.718	0.266
139	P_S11-03_S11-01	0.229	1.733	0.275	-2.449	0.241
140	P_S11-01_S19-11	0.254	1.424	0.305	-1.924	0.287
141	P_S11-07_S11-05	0.297	1.053	0.356	-1.298	0.297
142	P_S11-09_S11-07	0.246	1.470	0.295	-2.015	0.271
143	P_S11-15_S11-13	0.182	2.278	0.219	-3.484	0.184
144	P_S11-13_S11-11	0.186	2.226	0.223	-3.382	0.189
145	P_S11-11_S11-09	0.192	2.234	0.231	-3.362	0.219
146	P_S11-19_S11-17	0.164	2.788	0.197	-4.387	0.164
147	P_S11-17_S11-15	0.138	3.927	0.165	-6.437	0.160
148	P_13B-01_W13-01	0.017	0.885	0.026	-1.128	0.109
149	P_W13-01_IW-12	0.301	1.269	0.301	-2.721	0.332
150	P_IW-12_IW-13	0.363	1.603	0.363	-3.077	0.393
151	P_IW-13_IW-16	0.423	1.202	0.423	-2.022	0.428
152	P_IW-16_IW-19	0.433	1.153	0.433	-1.892	0.992
153	P_W13-03_W13-01	0.321	1.119	0.321	-2.322	0.321
154	P_IW-09_IW-12	0.277	1.201	0.277	-2.671	0.320
155	P_W13-05_W13-03	0.314	1.161	0.314	-2.437	0.317
156	P_IW-05_IW-09	0.263	1.324	0.263	-3.005	0.270
157	P_W13-07_W13-05	0.277	1.477	0.277	-3.282	0.296
158	P_IW-04_IW-05	0.236	1.639	0.236	-3.862	0.236
159	P_IW-01_IW-04	0.254	1.410	0.254	-3.240	0.254
160	P_N13-07_N13-04	0.377	0.808	0.377	-1.508	0.377
161	P_N13-04_W13-07	0.371	0.836	0.371	-1.578	0.371
162	P_I-03_I-01	0.276	1.202	0.276	-2.677	0.276
163	P_I-01_IW-01	0.245	1.521	0.245	-3.543	0.599
164	P_I-09_I-07	0.368	0.664	0.368	-1.262	0.368
165	P_I-07_I-05	0.340	0.771	0.340	-1.545	0.340
166	P_I-05_I-04	0.285	1.083	0.285	-2.378	0.293
167	P_I-04_I-03	0.301	1.010	0.301	-2.165	0.301
168	P_W5B-01_W5A-01	0.012	2.236	0.017	-3.037	0.023
169	P_W5A-01_I-04	0.034	3.171	0.051	-3.632	0.168
170	P_W5B-03_W5B-01	0.007	1.620	0.010	-2.398	0.009
171	P_I-11_I-09	0.265	0.900	0.397	-0.585	0.265
172	P_N13-11_N13-09	0.359	0.864	0.359	-1.670	0.359
173	P_N13-09_N13-07	0.326	1.046	0.326	-2.153	0.351
174	P_N13-13_N13-11	0.350	0.861	0.350	-1.693	0.355
175	P_N13-15_N13-13	0.370	0.747	0.370	-1.414	0.370
176	P_N13-17_N13-15	0.243	1.668	0.243	-3.890	0.307
177	P_N13-21_N13-19	0.209	2.204	0.209	-5.386	0.250
178	P_N13-19_N13-17	0.291	1.161	0.291	-2.526	0.291
179	P_N13-23_N13-21	0.191	2.623	0.191	-6.562	0.200
180	P_N13-35_N13-33	0.211	2.050	0.211	-4.994	0.218
181	P_N13-33_N13-31	0.225	1.810	0.225	-4.325	0.225
182	P_N13-31_N13-29	0.196	2.386	0.196	-5.929	0.209
183	P_N13-29_N13-27	0.221	1.963	0.221	-4.717	0.221
184	P_N13-27_N13-25	0.217	2.034	0.217	-4.916	0.242
185	P_N13-25_N13-23	0.268	1.356	0.268	-3.057	0.268
186	P_11T-03_11T-01	0.184	1.666	0.277	-1.345	0.667
187	P_11T-01_I-11	0.205	1.367	0.307	-1.053	0.235
188	P_9T-05_9T-03	0.256	0.720	0.384	-0.480	0.256
189	P_9T-03_9T-02	0.236	0.838	0.355	-0.593	0.248

		ID	Maximum Water Depth (ft)	Maximum Froude Number	Maximum d/D	Maximum Overflow (cfs)	Maximum Adjusted Depth (ft)
190		P_9T-02_I-09	0.260	0.709	0.390	-0.467	0.314
191		P_3T-01_9T-05	0.032	1.070	0.047	-1.241	0.144
192		P_9T-31_9T-29	0.102	2.430	0.153	-2.318	0.125
193		P_9T-29_9T-27	0.148	1.172	0.223	-1.020	0.148
194		P_9T-27_9T-25	0.145	1.241	0.218	-1.088	0.145
195		P_9T-25_9T-23	0.129	1.618	0.193	-1.465	0.129
196		P_9T-23_9T-21	0.128	1.664	0.191	-1.510	0.128
197		P_9T-21_9T-19	0.073	5.194	0.109	-5.275	0.133
198		P_9T-19_9T-17	0.192	0.790	0.289	-0.627	0.192
199		P_9T-17_9T-15	0.156	1.207	0.234	-1.035	0.156
200		P_9T-15_9T-13	0.126	1.899	0.189	-1.727	0.126
201		P_9T-13_9T-11	0.121	2.589	0.182	-2.379	0.178
202		P_9T-11_9T-07	0.234	0.826	0.351	-0.588	0.234
203		P_9T-07_9T-05	0.222	0.910	0.334	-0.670	0.239
204		P_11T-21_11T-19	0.179	1.628	0.268	-1.331	0.179
205		P_11T-19_11T-17	0.177	1.676	0.265	-1.376	0.177
206		P_11T-17_11T-15	0.164	1.952	0.247	-1.645	0.170
207		P_11T-15_11T-13	0.176	1.730	0.263	-1.424	0.176
208		P_11T-13_11T-11	0.162	2.055	0.243	-1.740	0.166
209		P_11T-11_11T-09	0.170	1.875	0.255	-1.561	0.667
210		P_11T-09_11T-05	0.163	2.065	0.245	-1.745	0.163
211		P_11T-05_11T-03	0.162	2.116	0.243	-1.793	0.173
212		P_11T-09_11T-07	0.667	0.163	1.000	0.123	0.667
213		P_11E-03_11E-01	0.043	2.801	0.064	-3.100	0.054
214		P_11E-01_11T-21	0.065	1.306	0.098	-1.351	0.122
215		P_11T-33_11T-31	0.061	4.003	0.091	-4.186	0.074
216		P_11T-31_11T-29	0.087	2.000	0.131	-1.968	0.087
217		P_11T-29_11T-27	0.067	3.436	0.100	-3.540	0.085
218		P_11T-27_11T-26	0.102	1.488	0.154	-1.418	0.102
219		P_11T-26_11T-25	0.080	2.417	0.120	-2.414	0.109
220		P_11T-39_11T-37	0.084	1.756	0.126	-1.737	0.088
221		P_11T-37_11T-35	0.091	1.536	0.137	-1.497	0.091
222		P_11T-35_11T-33	0.083	2.155	0.124	-2.139	0.083
223		P_11T-25_11T-23	0.138	2.377	0.207	-2.114	0.140
224		P_11T-23_11T-21	0.142	2.273	0.212	-2.007	0.160
225		P_11F-03_11F-01	0.191	0.818	0.286	-0.651	0.191
226		P_11F-01_11T-25	0.105	2.640	0.157	-2.503	0.121
227		P_11F-03_11F-02	0.209	0.685	0.314	-0.522	0.209
228		P_11F-02_11F-03	0.000	0.000	0.000	-0.919	0.000
229		P_11F-03_11F-04	0.081	4.339	0.122	-4.319	0.145
230		P_9T-35_9T-34	0.189	0.698	0.284	-0.557	0.189
231		P_9T-34_9T-33	0.092	2.868	0.139	-2.789	0.099
232		P_9T-33_9T-31	0.106	2.222	0.159	-2.103	0.106
233		P_Z-05_N13-37	0.221	1.724	0.221	-4.144	0.221
234		P_N13-37_N13-35	0.212	2.015	0.212	-4.900	0.212
235		P_Z-09_Z-07	0.275	1.046	0.275	-2.335	0.275
236		P_Z-07_Z-05	0.251	1.338	0.251	-3.088	0.251
237		P_Z-17_Z-15	0.150	2.477	0.150	-6.540	0.156
238		P_Z-15_Z-13	0.162	2.111	0.162	-5.481	0.176
239		P_Z-13_Z-11	0.190	1.719	0.190	-4.303	0.192
240		P_Z-11_Z-09	0.194	2.056	0.194	-5.121	0.235

2040 Model Results for Surveyed Lines and Outfall Line

	ID	Maximum Adjusted d/D	Maximum Adjusted Velocity (ft/s)	Maximum q/Q	Maximum Critical Depth (ft)
1	OUTLET_PIPE	0.574	2.748	0.627	0.646
2	SEMH02124_SEMH02125	0.448	3.227	0.414	0.596
3	SEMH04165_SEMH02154	0.964	2.619	0.392	0.613
4	SEMH02243_SEMH02244	0.482	1.627	0.326	0.646
5	SEMH01336_SEMH02236	0.338	1.398	0.169	0.596
6	SEMH02235_SEMH01336	0.443	3.273	0.406	0.596
7	SEMH02234_SEMH02235	0.419	1.397	0.330	0.596
8	SEMH02232_SEMH02233	0.336	1.397	0.164	0.596
9	SEMH02233_SEMH02234	0.399	3.768	0.335	0.596
10	SEMH02231_SEMH02232	0.435	3.359	0.392	0.596
11	SEMH02113_SEMH02115	1.000	3.151	1.177	0.674
12	SEMH02230_SEMH02231	0.380	1.397	0.232	0.596
13	SEMH02155_SEMH02154	0.798	0.090	0.013	0.108
14	SEMH02229_SEMH02230	1.000	1.398	5.722	0.596
15	SEMH02237_SEMH02238	0.546	2.509	0.579	0.596
16	SEMH02236_SEMH02237	0.471	1.398	0.334	0.596
17	SEMH02125_SEMH02229	0.702	1.399	0.250	0.596
18	SEMH02114_SEMH02124	0.390	1.400	0.237	0.596
19	SEMH02154_SEMH02112	1.000	3.155	1.192	0.674
20	SEMH03084_SEMH02155	0.094	2.227	0.015	0.108
21	SEMH02115_SEMH02114	0.309	1.400	0.181	0.596
22	SEMH03023_SEMH02113	0.895	3.153	0.512	0.674
23	SEMH02112_SEMH03023	1.000	3.154	3.688	0.674
24	SEMH02238_SEMH02239	0.376	1.399	0.239	0.596
25	SEMH02240_SEMH02243	0.377	1.627	0.281	0.646
26	SEMH02239_SEMH02240	0.421	4.088	0.369	0.646
27	P_IW-19_IW-22	1.000	2.620	0.529	0.613
28	P_IW-22_IW-26-METER	1.000	2.620	0.672	0.613
29	P_IW-26-METER_IW-26	1.000	2.621	0.853	0.613
30	SEMH04007_SEMH02161	0.904	2.620	0.591	0.613
31	SEMH02161_SEMH04165	1.000	2.620	2.163	0.613
32	P_IW-26_SEMH04007	0.505	2.621	0.429	0.613
33	P_S19-11_S19-07	0.336	2.230	0.243	0.352
34	P_S19-07_S19-04	0.416	0.656	0.219	0.352
35	P_S19-04_S19-03	0.577	1.829	0.303	0.357
36	P_S19-03_S19-02	0.673	0.675	0.284	0.357
37	P_S19-02_S19-01	0.717	1.482	0.429	0.357
38	P_S19-01_IW-19	0.784	1.632	0.375	0.362
39	P_E19-01_S19-21	0.342	0.641	0.195	0.218
40	P_S19-21_S19-19	0.214	0.252	0.092	0.215
41	P_S19-19_S19-15	0.224	0.252	0.109	0.215
42	P_S19-15_S19-13	0.225	1.506	0.111	0.216
43	P_S19-13_S19-12	0.220	1.601	0.106	0.219
44	P_S19-12_S19-11	0.237	0.261	0.026	0.219
45	P_E19-18_E19-20	0.034	0.013	0.002	0.030
46	P_E19-18_E19-17	0.052	0.016	0.003	0.034
47	P_E19-17_E19-15	0.066	1.928	0.009	0.062
48	P_E19-15_E19-14	0.066	0.055	0.007	0.063
49	P_E19-14_E19-11	0.082	0.075	0.010	0.073
50	P_E19-11_E19-08	0.186	0.105	0.018	0.087
51	P_E19-08_E19-05	0.279	2.436	0.170	0.202
52	P_E19-05_E19-02	0.271	0.565	0.145	0.204
53	P_E19-02_E19-01	0.293	0.641	0.178	0.218
54	P_19B-01_E19-08	0.191	3.162	0.079	0.175
55	P_19B-05_19B-03	0.249	0.409	0.133	0.173
56	P_19B-03_19B-01	0.251	2.103	0.138	0.174
57	P_19B-07_19B-05	0.283	1.746	0.175	0.172
58	P_19M-07_19M-05	0.224	0.367	0.101	0.163
59	P_19M-05_19M-03	0.239	0.371	0.120	0.164
60	P_19M-03_19M-01	0.244	2.010	0.130	0.166
61	P_19M-01_19B-07	0.224	2.279	0.110	0.167
62	P_19M-08_19M-07	0.167	0.230	0.030	0.129
63	P_19D-15_19D-13	0.071	0.000	0.000	0.000

2040 Model Results for Surveyed Lines and Outfall Line

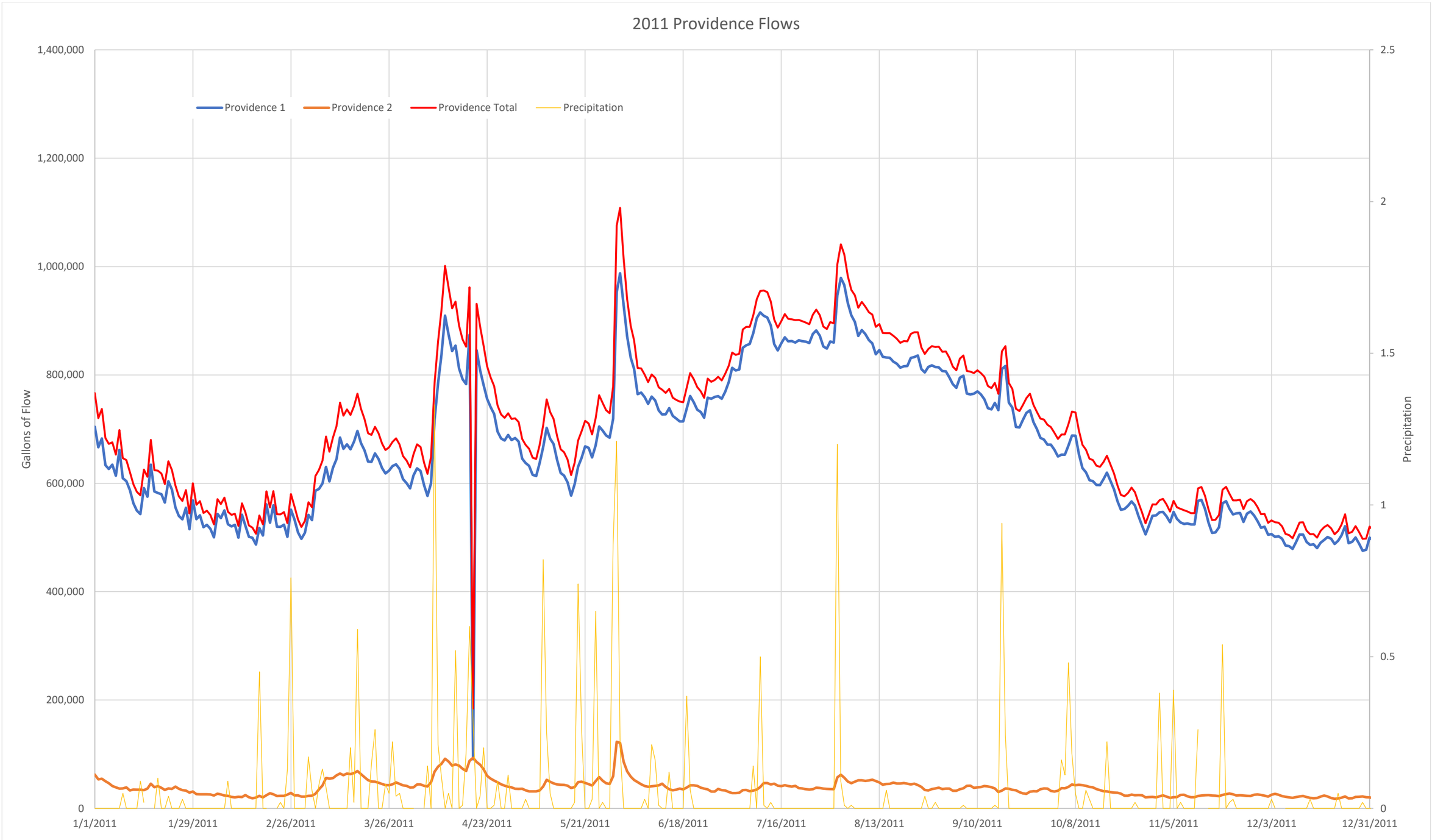
	ID	Maximum Adjusted d/D	Maximum Adjusted Velocity (ft/s)	Maximum q/Q	Maximum Critical Depth (ft)
64	P_19D-13_19M-15	0.143	1.732	0.044	0.104
65	P_19M-15_19M-13	0.108	2.914	0.024	0.110
66	P_19M-13_19M-11	0.101	0.169	0.019	0.110
67	P_19M-11_19M-09	0.113	0.174	0.023	0.112
68	P_19M-09_19M-08	0.121	3.335	0.031	0.129
69	P_METER-NO-FLOW_19D-13	0.173	1.273	0.065	0.103
70	P_S11-21_S11-19	0.346	3.679	0.257	0.292
71	P_19T-11_19T-09	0.030	0.004	0.001	0.017
72	P_19T-09_19T-07	0.041	0.008	0.002	0.024
73	P_19T-07_19T-05	0.050	0.015	0.004	0.033
74	P_19T-05_19T-03	0.066	0.019	0.005	0.036
75	P_19T-03_19T-01	0.084	0.025	0.013	0.042
76	P_19T-01_S11-19	0.130	0.033	0.016	0.049
77	P_I-27_I-25	0.309	4.021	0.207	0.282
78	P_I-25_I-23	0.315	1.061	0.206	0.283
79	P_I-23_I-21	0.344	1.121	0.224	0.291
80	P_I-21_S11-21	0.366	3.405	0.285	0.292
81	P_I-39_I-37	0.496	1.946	0.494	0.269
82	P_I-37_I-35	0.302	3.789	0.199	0.270
83	P_I-35_I-33	0.278	4.318	0.168	0.271
84	P_I-33_I-31	0.279	0.983	0.166	0.272
85	P_39T-09_39T-06	0.145	0.244	0.029	0.133
86	P_39T-06_39T-05	0.173	2.146	0.065	0.134
87	P_39T-05_39T-03	0.156	0.251	0.040	0.135
88	P_39T-03_39T-01	0.200	0.260	0.068	0.137
89	P_39T-01_I-39	0.361	0.263	0.111	0.138
90	P_I-43_I-41	0.184	0.693	0.071	0.227
91	P_I-41_I-39	0.342	0.698	0.077	0.228
92	P_I-31_I-29	0.374	0.989	0.176	0.273
93	P_I-29_I-27	0.464	2.179	0.439	0.273
94	P_39B-01_39T-09	0.107	3.060	0.024	0.112
95	P_39B-07_39B-05	0.172	1.473	0.064	0.110
96	P_39B-05_39B-03	0.204	1.165	0.091	0.110
97	P_39B-03_39B-01	0.121	2.511	0.031	0.112
98	P_39B-09_39B-07	0.168	0.169	0.059	0.110
99	P_39B-15_39B-13	0.099	0.169	0.009	0.110
100	P_39B-13_39B-11	0.129	2.231	0.036	0.110
101	P_39B-11_39B-09	0.167	1.536	0.061	0.110
102	P_I-59_I-57	0.228	0.622	0.102	0.214
103	P_I-57_I-56	0.243	0.624	0.127	0.215
104	P_I-63_I-61	0.222	0.605	0.095	0.211
105	P_I-61_I-59	0.236	3.416	0.122	0.213
106	P_I-65_I-63	0.244	3.174	0.131	0.211
107	P_I-72_I-71	0.148	0.207	0.047	0.122
108	P_I-71_I-69	0.188	0.208	0.048	0.122
109	P_I-69_I-67	0.279	0.210	0.112	0.123
110	P_I-67_I-66	0.331	0.741	0.236	0.124
111	P_I-66_I-65	0.331	1.634	0.237	0.186
112	P_I-77_I-75	0.134	0.141	0.028	0.100
113	P_I-75_I-73	0.154	1.459	0.051	0.101
114	P_I-73_I-72	0.138	0.149	0.035	0.103
115	P_I-78_I-77	0.109	2.081	0.025	0.094
116	P_I-85_I-83	0.071	0.027	0.010	0.044
117	P_I-83_I-81	0.072	0.926	0.010	0.046
118	P_I-81_I-79	1.000	0.067	0.011	0.069
119	P_I-79_I-78	0.134	1.513	0.038	0.093
120	P_I-88_I-87	0.043	0.014	0.002	0.031
121	P_I-87_I-86	0.061	0.014	0.006	0.031
122	P_I-86_I-85	0.069	0.027	0.009	0.044
123	P_I-102_I-100	0.009	0.001	0.000	0.008
124	P_I-100_I-98	0.018	0.825	0.001	0.015
125	P_I-98_I-96	0.017	0.005	0.000	0.019
126	P_I-96_I-94	0.021	0.008	0.001	0.024

2040 Model Results for Surveyed Lines and Outfall Line

	ID	Maximum Adjusted d/D	Maximum Adjusted Velocity (ft/s)	Maximum q/Q	Maximum Critical Depth (ft)
127	P_I-94_I-92	0.034	0.010	0.001	0.027
128	P_I-92_I-90	0.048	0.013	0.004	0.030
129	P_I-90_I-88	0.051	0.712	0.005	0.031
130	P_I-53_I-51	0.194	0.627	0.079	0.215
131	P_51T-00_I-51	0.062	2.376	0.008	0.066
132	P_I-56_I-55	0.245	3.287	0.132	0.215
133	P_I-55_I-53	0.233	3.537	0.119	0.215
134	P_I-51_I-49	0.201	0.690	0.087	0.226
135	P_I-47_I-45	0.227	0.691	0.089	0.226
136	P_I-45_I-43	0.252	3.487	0.140	0.226
137	P_I-49_I-47	0.203	4.757	0.090	0.226
138	P_S11-05_S11-03	0.319	3.239	0.220	0.304
139	P_S11-03_S11-01	0.290	0.889	0.165	0.305
140	P_S11-01_S19-11	0.344	0.890	0.202	0.305
141	P_S11-07_S11-05	0.356	2.781	0.272	0.304
142	P_S11-09_S11-07	0.326	0.865	0.190	0.300
143	P_S11-15_S11-13	0.221	0.747	0.105	0.278
144	P_S11-13_S11-11	0.227	0.762	0.109	0.281
145	P_S11-11_S11-09	0.263	0.814	0.117	0.291
146	P_S11-19_S11-17	0.197	5.356	0.085	0.278
147	P_S11-17_S11-15	0.192	0.746	0.059	0.278
148	P_13B-01_W13-01	0.164	0.540	0.001	0.016
149	P_W13-01_IW-12	0.332	0.849	0.197	0.340
150	P_IW-12_IW-13	0.393	1.533	0.281	0.463
151	P_IW-13_IW-16	0.428	1.533	0.373	0.463
152	P_IW-16_IW-19	0.992	1.536	0.389	0.463
153	P_W13-03_W13-01	0.321	3.060	0.223	0.340
154	P_IW-09_IW-12	0.320	0.683	0.167	0.304
155	P_W13-05_W13-03	0.317	0.845	0.214	0.339
156	P_IW-05_IW-09	0.270	0.683	0.151	0.304
157	P_W13-07_W13-05	0.296	0.845	0.168	0.339
158	P_IW-04_IW-05	0.236	3.794	0.122	0.304
159	P_IW-01_IW-04	0.254	3.402	0.142	0.304
160	P_N13-07_N13-04	0.377	2.405	0.301	0.336
161	P_N13-04_W13-07	0.371	2.468	0.293	0.337
162	P_I-03_I-01	0.276	3.027	0.166	0.303
163	P_I-01_IW-01	0.599	0.681	0.131	0.304
164	P_I-09_I-07	0.368	1.956	0.289	0.297
165	P_I-07_I-05	0.340	2.177	0.249	0.297
166	P_I-05_I-04	0.293	0.654	0.178	0.297
167	P_I-04_I-03	0.301	2.670	0.197	0.303
168	P_W5B-01_W5A-01	0.034	0.004	0.000	0.017
169	P_W5A-01_I-04	0.252	1.508	0.005	0.061
170	P_W5B-03_W5B-01	0.014	0.001	0.000	0.009
171	P_I-11_I-09	0.397	2.260	0.333	0.250
172	P_N13-11_N13-09	0.359	2.510	0.276	0.332
173	P_N13-09_N13-07	0.351	0.816	0.229	0.333
174	P_N13-13_N13-11	0.355	0.771	0.263	0.324
175	P_N13-15_N13-13	0.370	2.203	0.291	0.317
176	P_N13-17_N13-15	0.307	0.740	0.130	0.317
177	P_N13-21_N13-19	0.250	0.723	0.095	0.313
178	P_N13-19_N13-17	0.291	3.012	0.185	0.314
179	P_N13-23_N13-21	0.200	0.723	0.080	0.313
180	P_N13-35_N13-33	0.218	0.689	0.098	0.305
181	P_N13-33_N13-31	0.225	4.091	0.112	0.306
182	P_N13-31_N13-29	0.209	0.692	0.084	0.306
183	P_N13-29_N13-27	0.221	4.393	0.107	0.313
184	P_N13-27_N13-25	0.242	0.723	0.104	0.313
185	P_N13-25_N13-23	0.268	3.360	0.157	0.313
186	P_11T-03_11T-01	1.000	0.774	0.167	0.240
187	P_11T-01_I-11	0.352	0.777	0.205	0.241
188	P_9T-05_9T-03	0.384	1.771	0.313	0.215
189	P_9T-03_9T-02	0.372	0.627	0.270	0.215

	ID	Maximum Adjusted d/D	Maximum Adjusted Velocity (ft/s)	Maximum q/Q	Maximum Critical Depth (ft)
190	P_9T-02_I-09	0.471	0.633	0.321	0.216
191	P_3T-01_9T-05	0.216	0.015	0.004	0.033
192	P_9T-31_9T-29	0.188	0.880	0.051	0.161
193	P_9T-29_9T-27	0.223	2.149	0.109	0.161
194	P_9T-27_9T-25	0.218	2.248	0.104	0.162
195	P_9T-25_9T-23	0.193	2.750	0.081	0.165
196	P_9T-23_9T-21	0.191	2.816	0.080	0.165
197	P_9T-21_9T-19	0.199	1.669	0.025	0.168
198	P_9T-19_9T-17	0.289	1.667	0.182	0.171
199	P_9T-17_9T-15	0.234	2.272	0.120	0.172
200	P_9T-15_9T-13	0.189	3.193	0.078	0.175
201	P_9T-13_9T-11	0.266	0.528	0.072	0.197
202	P_9T-11_9T-07	0.351	1.935	0.265	0.212
203	P_9T-07_9T-05	0.359	0.606	0.240	0.212
204	P_11T-21_11T-19	0.268	3.299	0.157	0.230
205	P_11T-19_11T-17	0.265	3.376	0.154	0.231
206	P_11T-17_11T-15	0.255	0.725	0.133	0.232
207	P_11T-15_11T-13	0.263	3.472	0.152	0.233
208	P_11T-13_11T-11	0.249	0.743	0.130	0.235
209	P_11T-11_11T-09	1.000	0.744	0.143	0.235
210	P_11T-09_11T-05	0.245	3.981	0.131	0.237
211	P_11T-05_11T-03	0.260	0.761	0.129	0.238
212	P_11T-09_11T-07	1.000	0.754	1.876	0.237
213	P_11E-03_11E-01	0.081	0.073	0.008	0.072
214	P_11E-01_11T-21	0.183	0.078	0.020	0.074
215	P_11T-33_11T-31	0.111	0.211	0.017	0.123
216	P_11T-31_11T-29	0.131	2.774	0.036	0.124
217	P_11T-29_11T-27	0.127	0.216	0.021	0.125
218	P_11T-27_11T-26	0.154	2.245	0.051	0.125
219	P_11T-26_11T-25	0.163	0.219	0.031	0.125
220	P_11T-39_11T-37	0.132	0.176	0.034	0.112
221	P_11T-37_11T-35	0.137	2.184	0.040	0.114
222	P_11T-35_11T-33	0.124	2.911	0.033	0.122
223	P_11T-25_11T-23	0.209	0.626	0.094	0.215
224	P_11T-23_11T-21	0.240	0.630	0.099	0.216
225	P_11F-03_11F-01	0.286	1.719	0.179	0.172
226	P_11F-01_11T-25	0.182	0.407	0.054	0.172
227	P_11F-03_11F-02	0.314	1.514	0.214	0.172
228	P_11F-02_11F-03	0.000	0.000	0.000	0.000
229	P_11F-03_11F-04	0.218	0.406	0.032	0.172
230	P_9T-35_9T-34	0.284	1.460	0.176	0.157
231	P_9T-34_9T-33	0.149	0.344	0.041	0.158
232	P_9T-33_9T-31	0.159	3.409	0.055	0.159
233	P_Z-05_N13-37	0.221	3.859	0.107	0.293
234	P_N13-37_N13-35	0.212	4.415	0.099	0.305
235	P_Z-09_Z-07	0.275	2.631	0.165	0.281
236	P_Z-07_Z-05	0.251	3.207	0.138	0.292
237	P_Z-17_Z-15	0.156	0.423	0.048	0.238
238	P_Z-15_Z-13	0.176	0.424	0.057	0.238
239	P_Z-13_Z-11	0.192	0.471	0.079	0.251
240	P_Z-11_Z-09	0.235	0.587	0.083	0.281

Appendix B – Providence Flow and Precipitation Graphs


2011 Providence Flows
Providence 1
Providence 2
Providence Total
Precipitation
Gallons of Flow
Precipitation
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
2.5
2
1.5
1
0.5
0
1/1/2011
1/29/2011
2/26/2011
3/26/2011
4/23/2011
5/21/2011
6/18/2011
7/16/2011
8/13/2011
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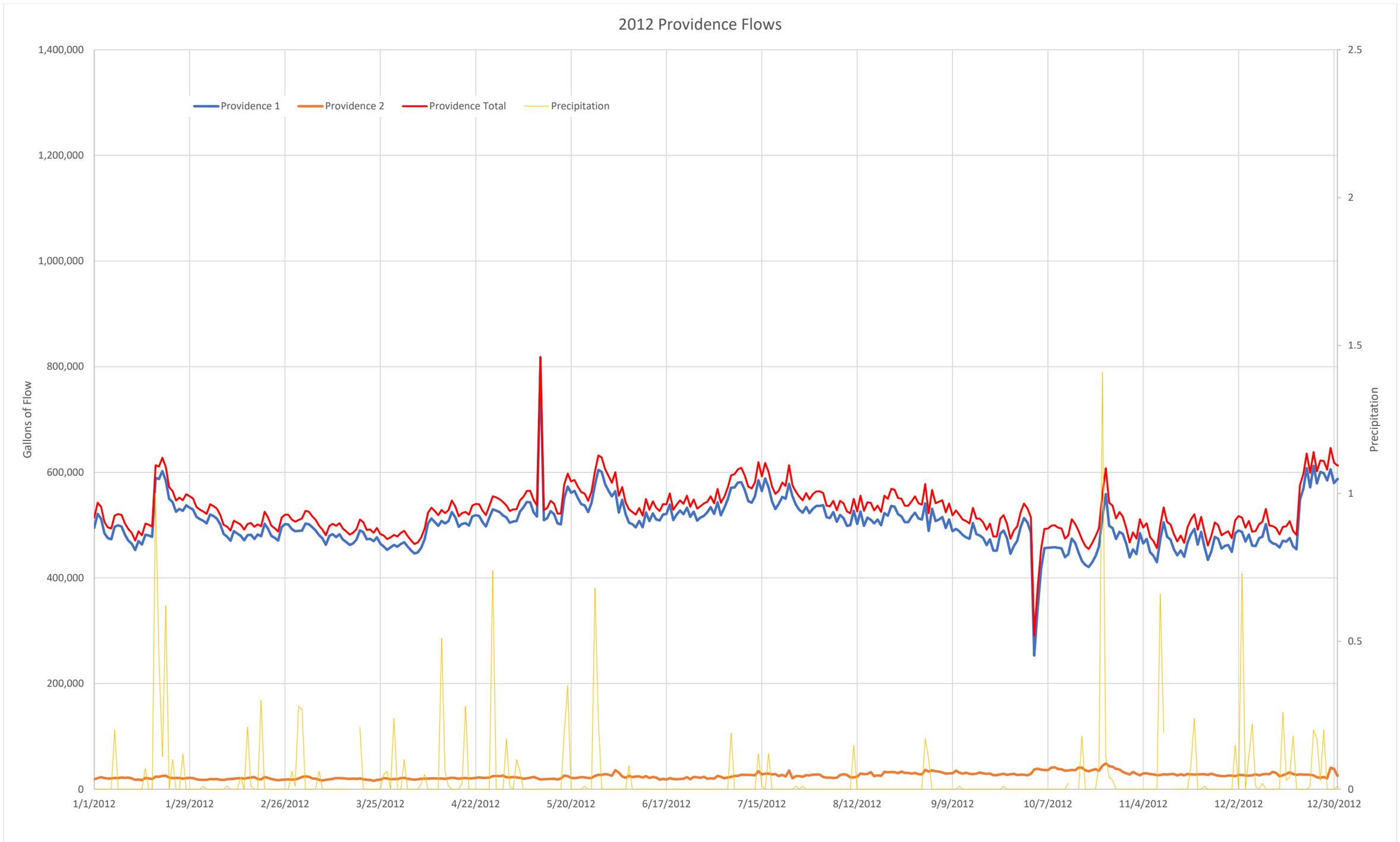
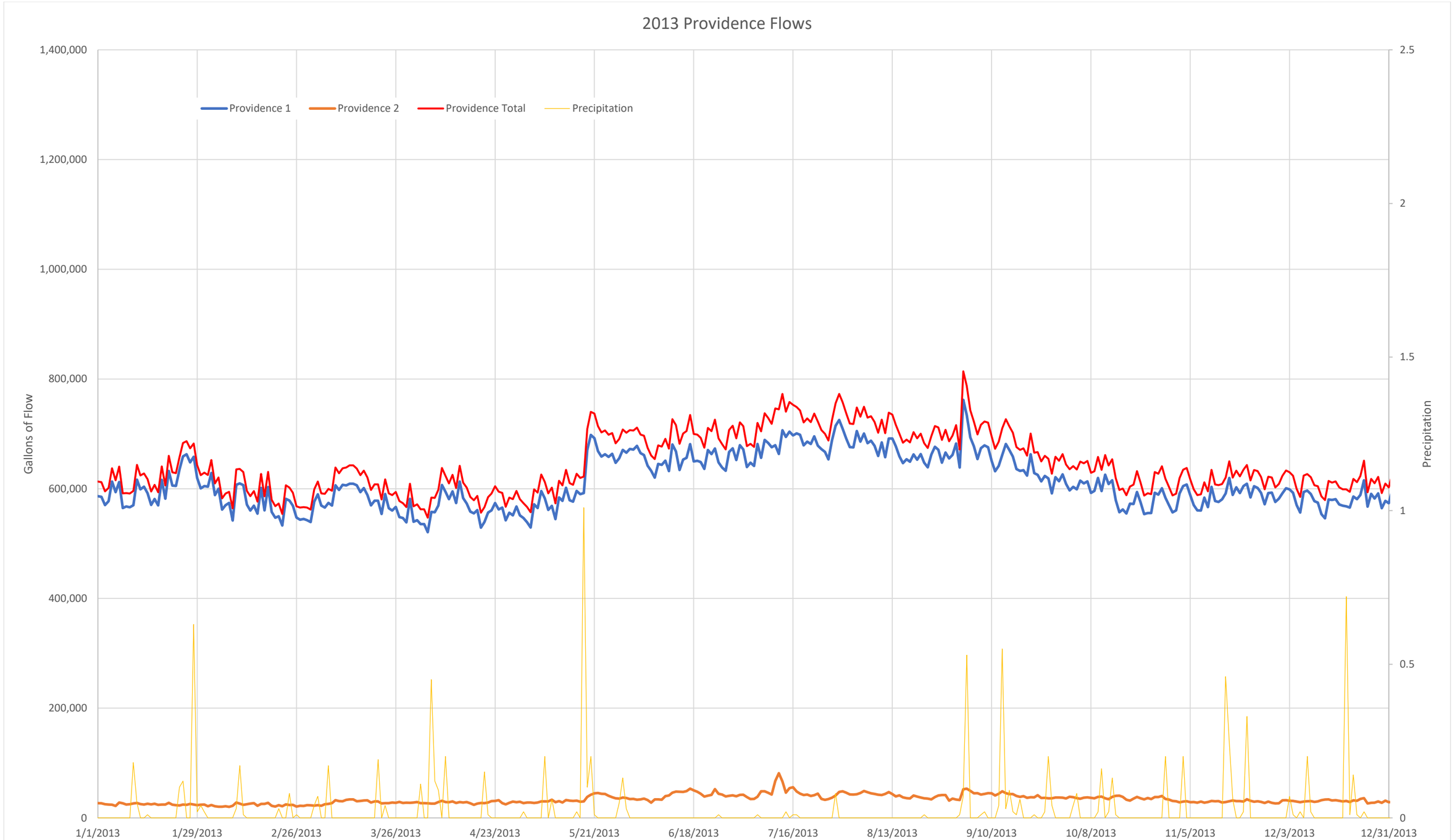
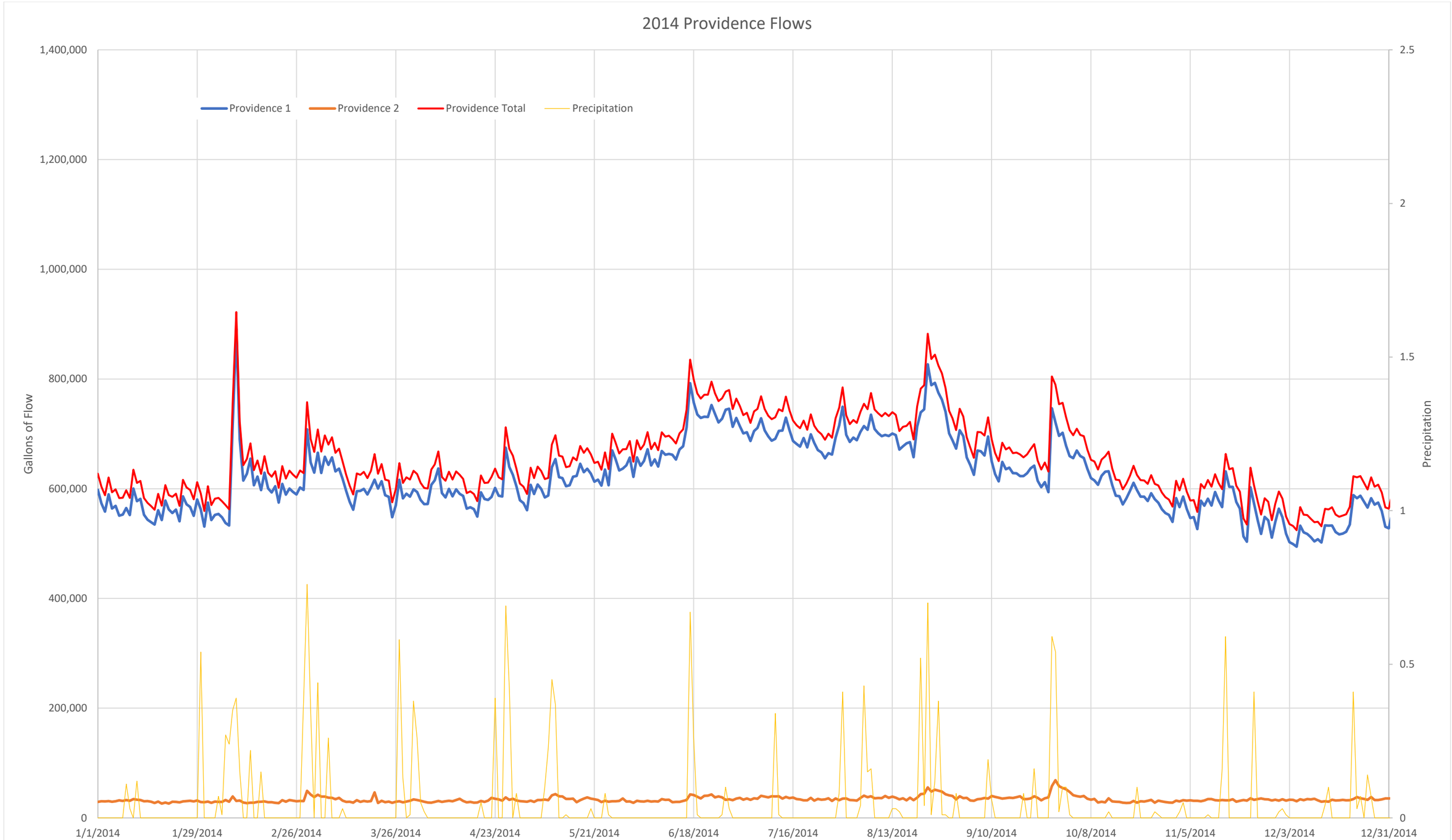
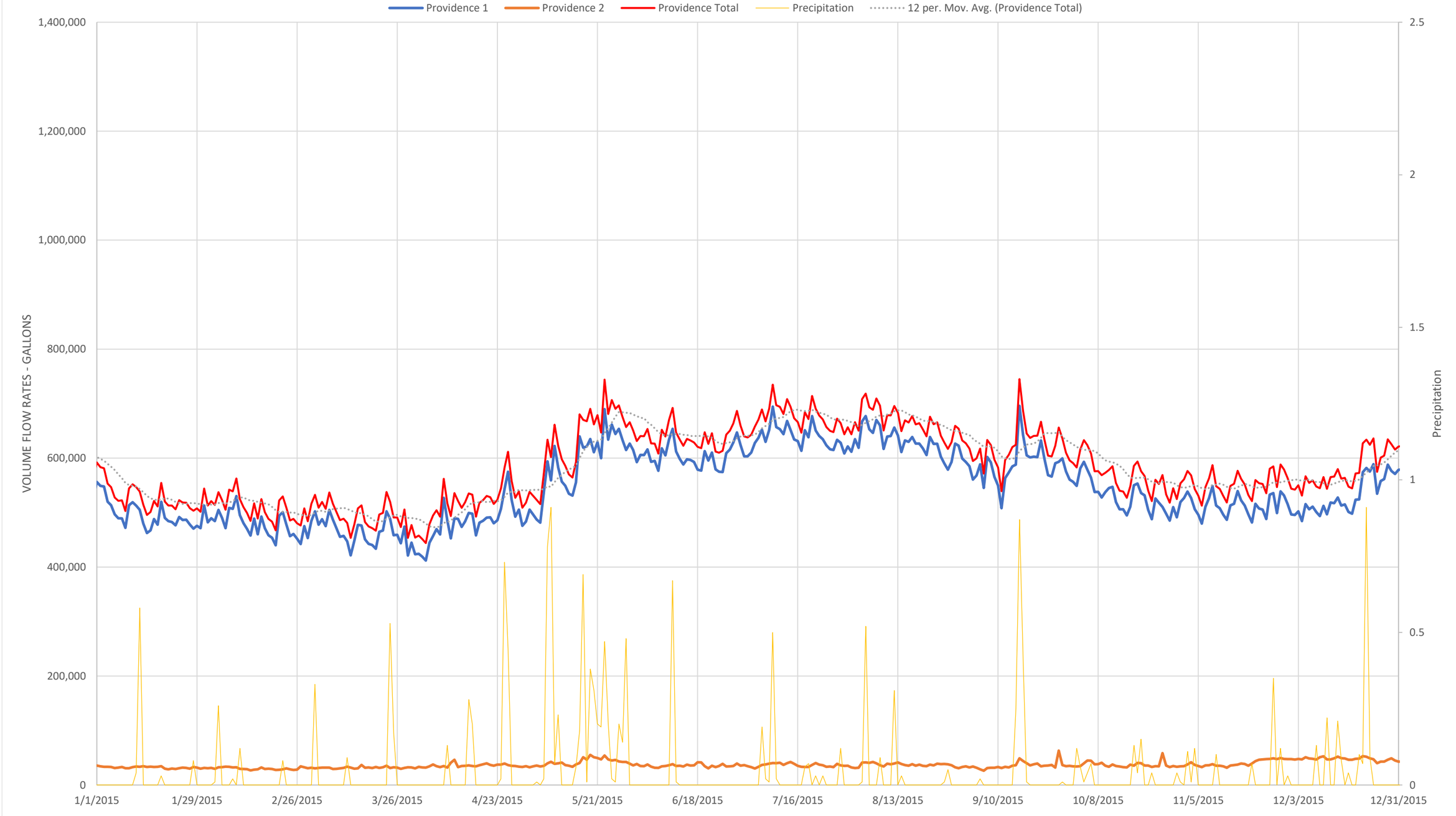
12/3/2011
12/31/2011

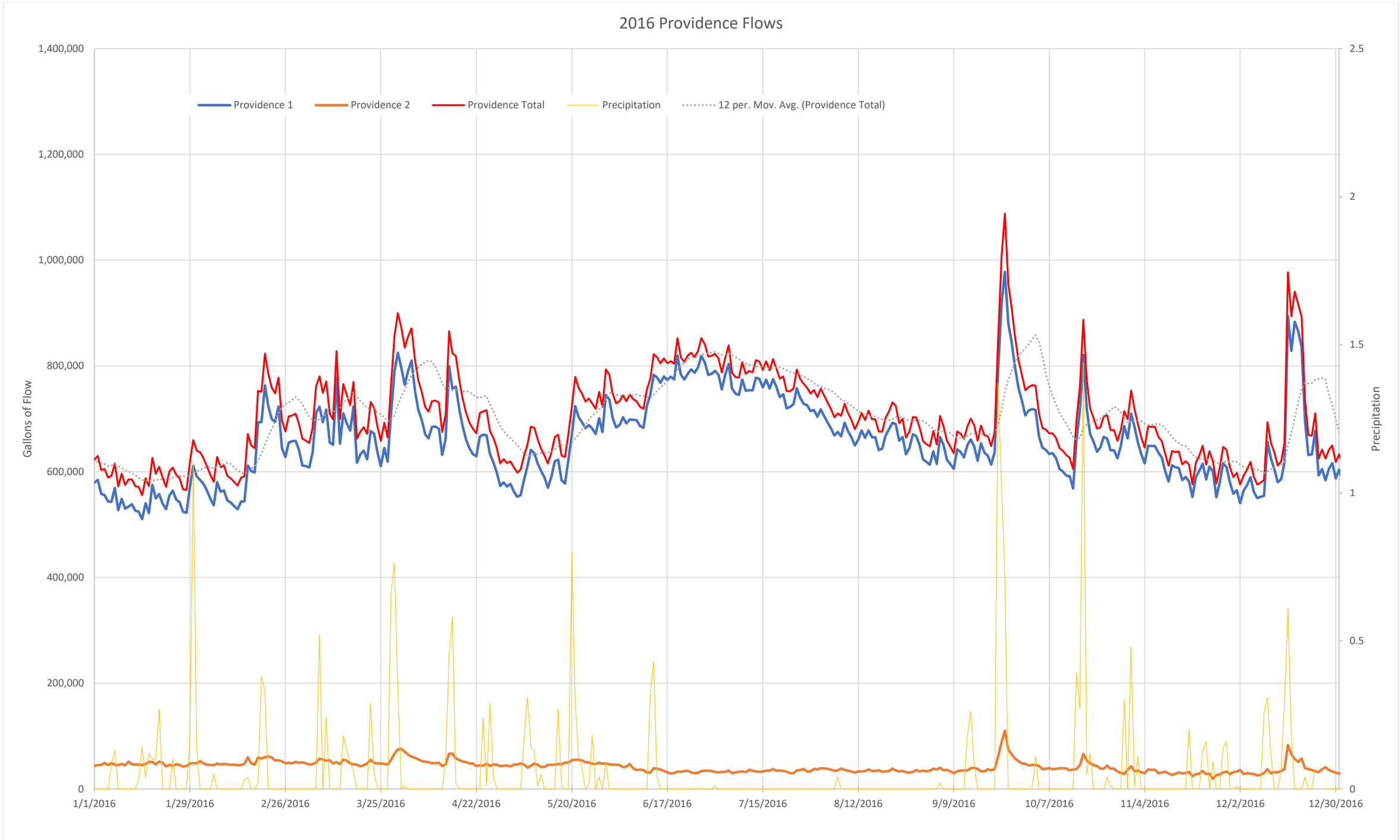

2012 Providence Flows
Providence 1
Providence 2
Providence Total
Precipitation
Gallons of Flow
Precipitation
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
2.5
2
1.5
1
0.5
0
1/1/2012
1/29/2012
2/26/2012
3/25/2012
4/22/2012
5/20/2012
6/17/2012
7/15/2012
8/12/2012
9/9/2012
10/7/2012
11/4/2012
12/2/2012
12/30/2012


2013 Providence Flows
Providence 1
Providence 2
Providence Total
Precipitation
Gallons of Flow
Precipitation
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
2.5
2
1.5
1
0.5
0
1/1/2013
1/29/2013
2/26/2013
3/26/2013
4/23/2013
5/21/2013
6/18/2013
7/16/2013
8/13/2013
9/10/2013
10/8/2013
11/5/2013
12/3/2013
12/31/2013


2014 Providence Flows
Providence 1
Providence 2
Providence Total
Precipitation
Gallons of Flow
Precipitation
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
2.5
2
1.5
1
0.5
0
1/1/2014
1/29/2014
2/26/2014
3/26/2014
4/23/2014
5/21/2014
6/18/2014
7/16/2014
8/13/2014
9/10/2014
10/8/2014
11/5/2014
12/3/2014
12/31/2014

2015 Providence Flows




2016 Providence Flows
Providence 1
Providence 2
Providence Total
Precipitation
12 per. Mov. Avg. (Providence Total)
Gallons of Flow
Precipitation
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
2.5
2
1.5
1
0.5
0
1/1/2016
1/29/2016
2/26/2016
3/25/2016
4/22/2016
5/20/2016
6/17/2016
7/15/2016
8/12/2016
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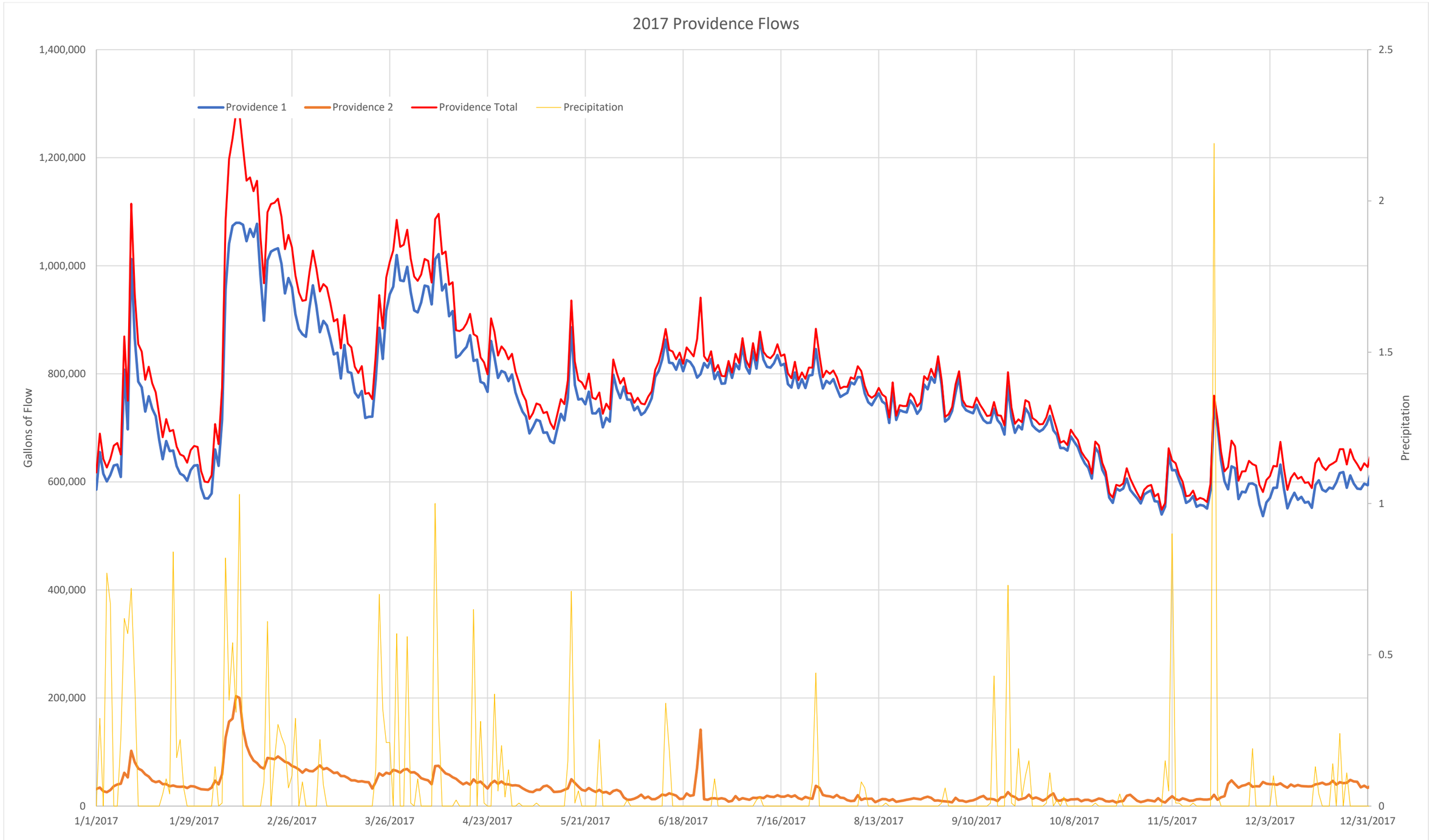
12/2/2016
12/30/2016


2017 Providence Flows
Providence 1
Providence 2
Providence Total
Precipitation
Gallons of Flow
Precipitation
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
2.5
2
1.5
1
0.5
0
1/1/2017
1/29/2017
2/26/2017
3/26/2017
4/23/2017
5/21/2017
6/18/2017
7/16/2017
8/13/2017
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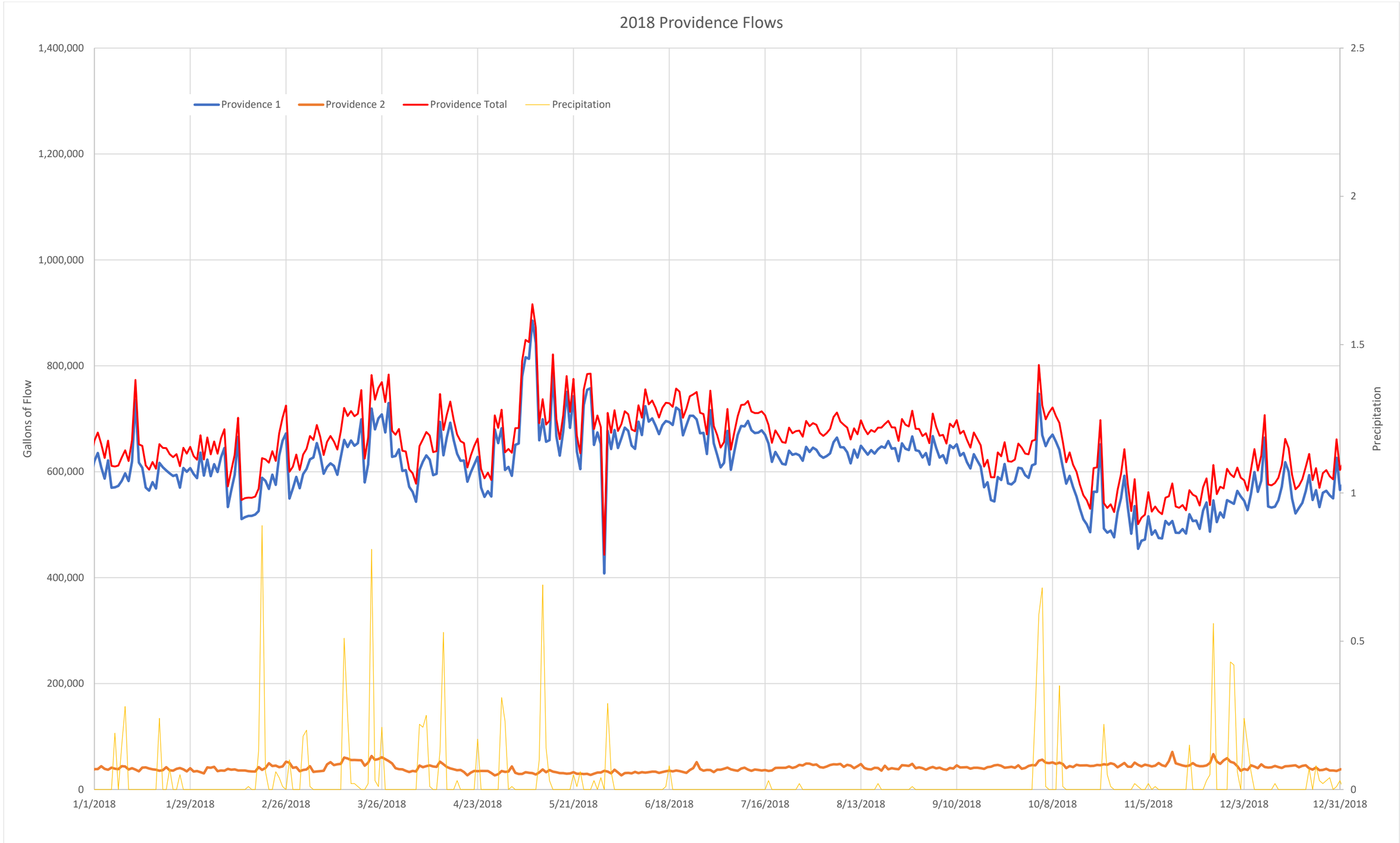
12/3/2017
12/31/2017


2018 Providence Flows
Providence 1
Providence 2
Providence Total
Precipitation
Gallons of Flow
Precipitation
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
2.5
2
1.5
1
0.5
0
1/1/2018
1/29/2018
2/26/2018
3/26/2018
4/23/2018
5/21/2018
6/18/2018
7/16/2018
8/13/2018
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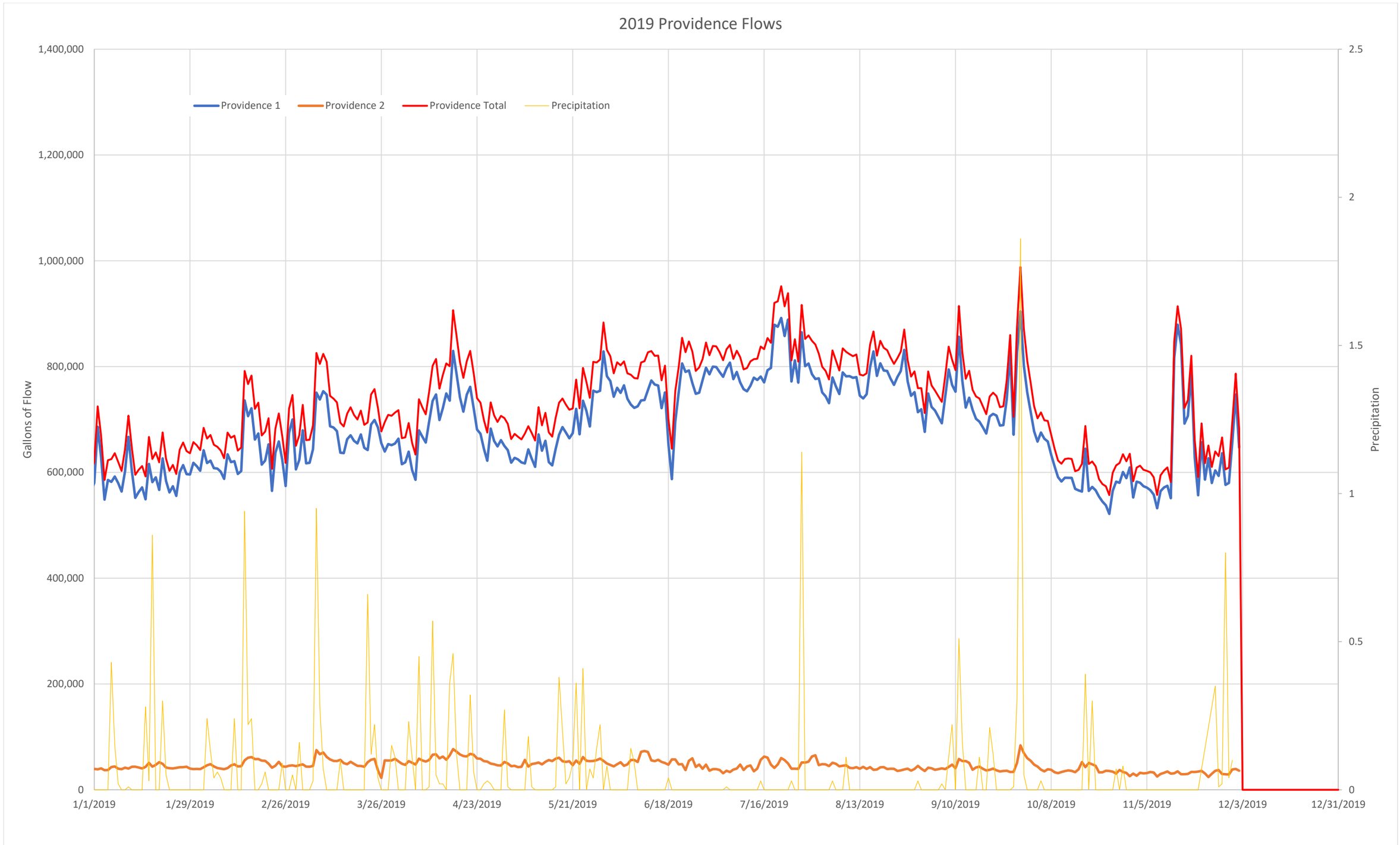
11/5/2018
12/3/2018
12/31/2018


2019 Providence Flows
Providence 1
Providence 2
Providence Total
Precipitation
Gallons of Flow
Precipitation
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
2.5
2
1.5
1
0.5
0
1/1/2019
1/29/2019
2/26/2019
3/26/2019
4/23/2019
5/21/2019
6/18/2019
7/16/2019
8/13/2019
9/10/2019
10/8/2019
11/5/2019
12/3/2019
12/31/2019

Appendix C – Preliminary Engineer's Cost Estimate for Wastewater Collection System Improvements

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	18" Outfall Line to Lift Station	Project No:	**S07618**
	18" Gravity Line - 100 % Providence	Estimate Date:	3-May-21
	Logan Treatment Facility - Option A	Project Year:	2025
Owner:	Providence City	By:	SDW

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 193,000	$ 193,000
2	Traffic Control		1	L.S.	$ 50,000	$ 50,000
3	Subsurface Investigation		40	HR.	$ 225	$ 9,000
4	Connection to Existing Wastewater		2	EA	$ 15,000	$ 30,000
5	18" Wastewater Pipe (In Street)	18	3,200	LN.FT.	$ 172	$ 551,000
6	18" Wastewater Pipe (Out of Street)	18	2,200	LN.FT.	$ 131	$ 289,000
7	18" Wastewater Pipe (Out of Street w/Landscape)	18	2,200	LN.FT.	$ 170	$ 374,000
8	Additional Landscaping for Golf Course		650	LN.FT.	$ 80	$ 52,000
9	Additional De-Watering		7,600	LN.FT.	$ 100	$ 760,000
10	UDOT Road Crossing (36" Bore)		250	LN.FT.	$ 900	$ 225,000
11	Rail Road Crossing (36" Bore)		100	LN.FT.	$ 900	$ 90,000
12	Logan River Crossing (36" Bore)		300	LN.FT.	$ 900	$ 270,000
13	Parshall Flume Meter Station		1	L.S.	$ 50,000	$ 50,000
14	**Construction Subtotal**					**$ 2,943,000**
15	Contingency 20%		1	L.S.	$ 589,000	$ 589,000
16	**Construction Total**					**$ 3,532,000**
	Professional Services & Project Incidentals					
17	Engineering Design	20.0%	1	L.S.	$ 707,000	$ 707,000
18	Legal, Bonding, & Fiscal	0.2%	1	L.S.	$ 7,000	$ 7,000
19	Feasibility Study	0.1%	1	L.S.	$ 2,000	$ 2,000
20	**Professional Services Total**					$ 716,000
21	**TOTAL**					**$ 4,248,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	West Side Gravity Collection System	Project No:	**S07618**
	Backbone	Estimate Date:	3-May-21
	Logan Treatment Facility - Option A	Project Year:	2025
Owner:	Providence City	By:	SDW

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 18,000	$ 18,000
2	Traffic Control		1	L.S.	$ 2,000	$ 2,000
3	Subsurface Investigation		10	HR.	$ 225	$ 3,000
4	8" Wastewater Pipe (In Street)	8	1,860	LN.FT.	$ 131	$ 244,000
5	**Construction Subtotal**					**$ 267,000**
6	Contingency 20%		1	L.S.	$ 54,000	$ 54,000
7	**Construction Total**					**$ 321,000**
	Professional Services & Project Incidentals					
8	Engineering Design	20.0%	1	L.S.	$ 65,000	$ 65,000
9	Legal, Bonding, & Fiscal	2.2%	1	L.S.	$ 7,000	$ 7,000
10	Feasibility Study	0.6%	1	L.S.	$ 2,000	$ 2,000
11	**Professional Services Total**					$ 74,000
12	**TOTAL**					**$ 395,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	West Side Force Main to Existing System	Project No:	**S07618**
		Estimate Date:	3-May-21
	Logan Treatment Facility - Option A	Project Year:	2025
Owner:	Providence City	By:	SDW

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 16,000	$ 16,000
2	Traffic Control		1	L.S.	$ 2,000	$ 2,000
3	Subsurface Investigation		10	HR.	$ 225	$ 3,000
4	Connection to Existing Wastewater		1	EA	$ 3,500	$ 4,000
5	4" Wastewater Forcemain (In Street)	4	2,000	LN.FT.	$ 72	$ 144,000
6	UDOT Road Crossing (12" Bore)		125	LN.FT.	$ 500	$ 63,000
7	**Construction Subtotal**					**$ 232,000**
8	Contingency 20%		1	L.S.	$ 47,000	$ 47,000
9	**Construction Total**					**$ 279,000**
	Professional Services & Project Incidentals					
10	Engineering Design	20.0%	1	L.S.	$ 56,000	$ 56,000
11	Legal, Bonding, & Fiscal	2.5%	1	L.S.	$ 7,000	$ 7,000
12	Feasibility Study	0.7%	1	L.S.	$ 2,000	$ 2,000
13	**Professional Services Total**					$ 65,000
14	**TOTAL**					**$ 344,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	West Side Lift Station	Project No:	**S07618**
	0.3 MGD Capacity	Estimate Date:	3-May-21
	Logan Treatment Facility - Option A	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 9,000	$ 9,000
2	Quality Control and Testing		1	L.S.	$ 8,000	$ 8,000
3	Earthwork (structure excavation & backfill)		1	L.S.	$ 8,000	$ 8,000
4	Mechanical Piping & Valves		1	L.S.	$ 10,000	$ 10,000
5	Pumps and Motors		1	L.S.	$ 25,000	$ 25,000
6	Electrical Work		1	L.S.	$ 15,000	$ 15,000
7	Controls and Instrumentation		1	L.S.	$ 10,000	$ 10,000
8	Construct Wetwell & Appurtenances		1	L.S.	$ 20,000	$ 20,000
9	Construct Concrete Vault		1	L.S.	$ 20,000	$ 20,000
10	**Construction Subtotal**					**$ 125,000**
11	Contingency 20%		1	L.S.	$ 25,000	$ 25,000
12	**Construction Total**					**$ 150,000**
	Professional Services & Project Incidentals					
13	Engineering Design	20.0%	1	L.S.	$ 30,000	$ 30,000
14	**Professional Services Total**					$ 30,000
15	**TOTAL**					**$ 180,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Golf Course Drive Force Main	Project No:	**S07618**
	To Spring Creek Parkway	Estimate Date:	11-May-21
	Logan Treatment Facility - Option A	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 6,000	$ 6,000
2	Traffic Control		1	L.S.	$ 3,000	$ 3,000
3	Connection to Existing Wastewater		1	EA	$ 3,500	$ 4,000
4	4" Wastewater Forcemain (In Street)	4	70	LN.FT.	$ 72	$ 6,000
5	4" Wastewater Forcemain (Out of Street)	4	1,341	LN.FT.	$ 44	$ 60,000
6	Local Road Crossing		55	LN.FT.	$ 200	$ 11,000
7	**Construction Subtotal**					**$ 90,000**
8	Contingency 20%		1	L.S.	$ 18,000	$ 18,000
9	**Construction Total**					**$ 108,000**
	Professional Services & Project Incidentals					
10	Engineering Design	20.0%	1	L.S.	$ 22,000	$ 22,000
11	Legal, Bonding, & Fiscal		1	L.S.	$ 5,000	$ 5,000
12	Feasibility Study		1	L.S.	$ 2,000	$ 2,000
13	**Professional Services Total**					$ 29,000
14	**TOTAL**					**$ 137,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Golf Course Drive Lift Station	Project No:	**S07618**
	0.1 MGD Capacity	Estimate Date:	11-May-21
	Logan Treatment Facility - Option A	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 9,000	$ 9,000
2	Quality Control and Testing		1	L.S.	$ 8,000	$ 8,000
3	Earthwork (structure excavation & backfill)		1	L.S.	$ 8,000	$ 8,000
4	Mechanical Piping & Valves		1	L.S.	$ 10,000	$ 10,000
5	Pumps and Motors		1	L.S.	$ 25,000	$ 25,000
6	Electrical Work		1	L.S.	$ 15,000	$ 15,000
7	Controls and Instrumentation		1	L.S.	$ 10,000	$ 10,000
8	Construct Wetwell & Appurtenances		1	L.S.	$ 20,000	$ 20,000
9	Construct Concrete Vault		1	L.S.	$ 20,000	$ 20,000
10	**Construction Subtotal**					**$ 125,000**
11	Contingency 20%		1	L.S.	$ 25,000	$ 25,000
12	**Construction Total**					**$ 150,000**
	Professional Services & Project Incidentals					
13	Engineering Design	20.0%	1	L.S.	$ 30,000	$ 30,000
14	**Professional Services Total**					$ 30,000
15	**TOTAL**					**$ 180,000**

SUNRISE ENGINEERING, INC.
CONSULTING ENGINEERS AND SURVEYORS
Detailed Project Budget

SUNRISE ENGINEERING

Project:	21" Outfall Line to Lift Station 21" Gravity Line - Shared Logan Treatment Facility - Option B	Project No:	**S07618**
		Estimate Date:	3-May-21
		Project Year:	2025
Owner:	Providence City	By:	SDW

							PERCENTAGE OF OWNERSHIP		COST PER COMMUNITY	
ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT	PROVIDENCE	LOGAN	PROVIDENCE	LOGAN
	Construction									
1	Mobilization (7%)		1	L.S.	$ 203,000	$ 203,000	88%	12%	$ 178,277	$ 24,723
2	Traffic Control		1	L.S.	$ 50,000	$ 50,000	89%	11%	$ 44,359	$ 5,641
3	Subsurface Investigation		40	HR.	$ 225	$ 9,000	89%	11%	$ 7,985	$ 1,015
4	Connection to Existing Wastewater		3	EA	$ 15,000	$ 45,000	67%	33%	$ 30,000	$ 15,000
5	21" Wastewater Pipe (In Street)	21	3,200	LN.FT.	$ 191	$ 612,000	89%	11%	$ 542,960	$ 69,040
6	21" Wastewater Pipe (Out of Street)	21	2,200	LN.FT.	$ 146	$ 322,000	89%	11%	$ 285,675	$ 36,325
7	21" Wastewater Pipe (Out of Street w/Landscape)	21	2,200	LN.FT.	$ 186	$ 410,000	89%	11%	$ 363,748	$ 46,252
8	Additional Landscaping for Golf Course		650	LN.FT.	$ 80	$ 52,000	89%	11%	$ 46,134	$ 5,866
9	Additional De-Watering		7,600	LN.FT.	$ 100	$ 760,000	89%	11%	$ 674,264	$ 85,736
10	UDOT Road Crossing (36" Bore)		250	LN.FT.	$ 900	$ 225,000	89%	11%	$ 199,618	$ 25,382
11	Rail Road Crossing (36" Bore)		100	LN.FT.	$ 900	$ 90,000	89%	11%	$ 79,847	$ 10,153
12	Logan River Crossing (36" Bore)		300	LN.FT.	$ 900	$ 270,000	89%	11%	$ 239,541	$ 30,459
13	Parshall Flume Meter Station		1	L.S.	$ 50,000	$ 50,000	100%	0%	$ 50,000	$ -
14	**Construction Subtotal**					**$ 3,098,000**	**88%**	**12%**	**$ 2,742,407**	**$ 355,593**
15	Contingency 20%		1	L.S.	$ 620,000	$ 620,000	88%	12%	$ 544,492	$ 75,508
16	**Construction Total**					**$ 3,718,000**			**$ 3,286,900**	**$ 431,100**
	Professional Services & Project Incidentals									
17	Engineering Design	20.0%	1	L.S.	$ 744,000	$ 744,000	88%	12%	$ 653,391	$ 90,609
18	Legal, Bonding, & Fiscal	0.2%	1	L.S.	$ 7,000	$ 7,000	88%	12%	$ 6,147	$ 853
19	Feasibility Study	0.1%	1	L.S.	$ 2,000	$ 2,000	88%	12%	$ 1,756	$ 244
20	**Professional Services Total**					$ 753,000	88%	12%	$ 661,295	$ 91,705
21	**TOTAL**					**$ 4,471,000**	**88%**	**12%**	**$ 3,948,000**	**$ 523,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	West Side Gravity Collection System	Project No:	**S07618**
	Backbone	Estimate Date:	3-May-21
	Logan Treatment Facility - Option B	Project Year:	2025
Owner:	Providence City	By:	SDW

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 18,000	$ 18,000
2	Traffic Control		1	L.S.	$ 2,000	$ 2,000
3	Subsurface Investigation		10	HR.	$ 225	$ 3,000
4	8" Wastewater Pipe (In Street)	8	1,860	LN.FT.	$ 131	$ 244,000
5	**Construction Subtotal**					**$ 267,000**
6	Contingency 20%		1	L.S.	$ 54,000	$ 54,000
7	**Construction Total**					**$ 321,000**
	Professional Services & Project Incidentals					
8	Engineering Design	20.0%	1	L.S.	$ 65,000	$ 65,000
9	Legal, Bonding, & Fiscal	2.2%	1	L.S.	$ 7,000	$ 7,000
10	Feasibility Study	0.6%	1	L.S.	$ 2,000	$ 2,000
11	**Professional Services Total**					$ 74,000
12	**TOTAL**					**$ 395,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	West Side Force Main to Existing System	Project No:	**S07618**
		Estimate Date:	3-May-21
	Logan Treatment Facility - Option B	Project Year:	2025
Owner:	Providence City	By:	SDW

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 16,000	$ 16,000
2	Traffic Control		1	L.S.	$ 2,000	$ 2,000
3	Subsurface Investigation		10	HR.	$ 225	$ 3,000
4	Connection to Existing Wastewater		1	EA	$ 3,500	$ 4,000
5	4" Wastewater Forcemain (In Street)	4	2,000	LN.FT.	$ 72	$ 144,000
6	UDOT Road Crossing (12" Bore)		125	LN.FT.	$ 500	$ 63,000
7	**Construction Subtotal**					**$ 232,000**
8	Contingency 20%		1	L.S.	$ 47,000	$ 47,000
9	**Construction Total**					**$ 279,000**
	Professional Services & Project Incidentals					
10	Engineering Design	20.0%	1	L.S.	$ 56,000	$ 56,000
11	Legal, Bonding, & Fiscal	2.5%	1	L.S.	$ 7,000	$ 7,000
12	Feasibility Study	0.7%	1	L.S.	$ 2,000	$ 2,000
13	**Professional Services Total**					$ 65,000
14	**TOTAL**					**$ 344,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	West Side Lift Station	Project No:	**S07618**
	0.3 MGD Capacity	Estimate Date:	3-May-21
	Logan Treatment Facility - Option B	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 9,000	$ 9,000
2	Quality Control and Testing		1	L.S.	$ 8,000	$ 8,000
3	Earthwork (structure excavation & backfill)		1	L.S.	$ 8,000	$ 8,000
4	Mechanical Piping & Valves		1	L.S.	$ 10,000	$ 10,000
5	Pumps and Motors		1	L.S.	$ 25,000	$ 25,000
6	Electrical Work		1	L.S.	$ 15,000	$ 15,000
7	Controls and Instrumentation		1	L.S.	$ 10,000	$ 10,000
8	Construct Wetwell & Appurtenances		1	L.S.	$ 20,000	$ 20,000
9	Construct Concrete Vault		1	L.S.	$ 20,000	$ 20,000
10	**Construction Subtotal**					**$ 125,000**
11	Contingency 20%		1	L.S.	$ 25,000	$ 25,000
12	**Construction Total**					**$ 150,000**
	Professional Services & Project Incidentals					
13	Engineering Design	20.0%	1	L.S.	$ 30,000	$ 30,000
14	**Professional Services Total**					$ 30,000
15	**TOTAL**					**$ 180,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Wastewater Treatment Plant	Project No:	**S07618**
	1.1 MGD	Estimate Date:	29-Apr-21
	Hyrum Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Wastewater Treatment Plant Construction		1	L.S.	$ 12,000,000	$ 12,000,000
2	**Construction Subtotal**					**$ 12,000,000**
3	Contingency 20%		1	L.S.	$ 2,400,000	$ 2,400,000
4	**Construction Total**					**$ 14,400,000**
	Professional Services & Project Incidentals					
5	Engineering Design	20.0%	1	L.S.	$ 2,880,000	$ 2,880,000
6	**Professional Services Total**					$ 2,880,000
7	**TOTAL**					**$ 17,280,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	West Side Gravity Collection System	Project No:	**S07618**
	Providence City New Backbone	Estimate Date:	3-May-21
	Hyrum Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDW

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 65,000	$ 65,000
2	Traffic Control		1	L.S.	$ 3,000	$ 3,000
3	Subsurface Investigation		35	HR.	$ 225	$ 8,000
4	Connection to Existing Wastewater		2	EA	$ 10,000	$ 20,000
5	8" Wastewater Pipe (In Street)	8	1,860	LN.FT.	$ 131	$ 244,000
6	21" Wastewater Pipe (In Street)	21	650	LN.FT.	$ 191	$ 125,000
7	21" Wastewater Pipe (Out of Street)	21	3,530	LN.FT.	$ 146	$ 516,000
8	**Construction Subtotal**					**$ 981,000**
9	Contingency 20%		1	L.S.	$ 197,000	$ 197,000
10	**Construction Total**					**$ 1,178,000**
	Professional Services & Project Incidentals					
11	Engineering Design	20.0%	1	L.S.	$ 236,000	$ 236,000
12	Legal, Bonding, & Fiscal	0.6%	1	L.S.	$ 7,000	$ 7,000
13	Feasibility Study	0.2%	1	L.S.	$ 2,000	$ 2,000
14	**Professional Services Total**					$ 245,000
15	**TOTAL**					**$ 1,423,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Providence Force Main	Project No:	**S07618**
	To US 165 and Johnson St in Nibley	Estimate Date:	29-Apr-21
	Hyrum Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDW

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 143,000	$ 143,000
2	Traffic Control		1	L.S.	$ 2,000	$ 2,000
3	Connection to Existing Wastewater		1	EA	$ 10,000	$ 10,000
4	16" Wastewater Forcemain (In Street)	16	2,000	LN.FT.	$ 132	$ 264,000
5	16" Wastewater Forcemain (Out of Street)	16	16,000	LN.FT.	$ 101	$ 1,616,000
6	UDOT Highway Bore		200	LN.FT.	$ 500	$ 100,000
7	Local Road Crossing		200	LN.FT.	$ 200	$ 40,000
8	**Construction Subtotal**					**$ 2,175,000**
9	Contingency 20%		1	L.S.	$ 435,000	$ 435,000
10	**Construction Total**					**$ 2,610,000**
	Professional Services & Project Incidentals					
11	Engineering Design	20.0%	1	L.S.	$ 522,000	$ 522,000
12	Legal, Bonding, & Fiscal	0.3%	1	L.S.	$ 7,000	$ 7,000
13	Feasibility Study	0.1%	1	L.S.	$ 2,000	$ 2,000
14	**Professional Services Total**					$ 531,000
15	**TOTAL**					**$ 3,141,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Providence Lift Station	Project No:	**S07618**
	1.3 MGD Capacity	Estimate Date:	3-May-21
	Hyrum Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDW

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 124,000	$ 124,000
2	Quality Control and Testing		1	L.S.	$ 11,000	$ 11,000
3	SWPP Plan		1	L.S.	$ 6,000	$ 6,000
4	Earthwork (structure excavation & backfill)		1	L.S.	$ 48,000	$ 48,000
5	Landscaping		1	L.S.	$ 8,000	$ 8,000
6	Asphalt Paving (3") & Subgrade		182	SQ.YD	$ 70	$ 13,000
7	Structural Fill		600	TONS	$ 50	$ 30,000
8	Import Pipe Bedding		40	TONS	$ 30	$ 2,000
9	Import Pipe Backfill		47	TONS	$ 30	$ 2,000
10	Gravity Sewer Line		45	LN.FT.	$ 110	$ 5,000
11	Force Main		32	LN.FT.	$ 110	$ 4,000
12	Construct Lift Station Building & Appurtenances		1	L.S.	$ 500,000	$ 500,000
13	Interior Crane Assembly (1 Ton)		1	EA	$ 20,000	$ 20,000
14	Mechanical Piping & Valves		1	L.S.	$ 240,000	$ 240,000
15	HVAC Equipment		1	L.S.	$ 20,000	$ 20,000
16	Pumps and Motors		1	L.S.	$ 300,000	$ 300,000
17	Electrical Work		1	L.S.	$ 50,000	$ 50,000
18	Controls and Instrumentation		1	L.S.	$ 28,000	$ 28,000
19	Construct Wetwell & Appurtenances		1	L.S.	$ 150,000	$ 150,000
20	Generator		1	L.S.	$ 90,000	$ 90,000
21	Shoring		3,600	SQ.FT	$ 50	$ 180,000
22	Dewatering		1	2 WKS	$ 60,000	$ 60,000
23	**Construction Subtotal**					**$ 1,891,000**
24	Contingency 20%		1	L.S.	$ 379,000	$ 379,000
25	**Construction Total**					**$ 2,270,000**
	Professional Services & Project Incidentals					
26	Engineering Design	20.0%	1	L.S.	$ 460,000	$ 460,000
27	Legal, Bonding, & Fiscal	0.4%	1	L.S.	$ 8,000	$ 8,000
28	Land Acquisition	0.0%	1	L.S.	$ 100,000	$ 100,000
29	Feasibility Study	0.1%	1	L.S.	$ 2,000	$ 2,000
30	**Professional Services Total**					$ 570,000
31	**TOTAL**					**$ 2,840,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Golf Course Drive Force Main	Project No:	**S07618**
	To Spring Creek Parkway	Estimate Date:	11-May-21
	Hyrum Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 6,000	$ 6,000
2	Traffic Control		1	L.S.	$ 3,000	$ 3,000
3	Connection to Existing Wastewater		1	EA	$ 3,500	$ 4,000
4	4" Wastewater Forcemain (In Street)	4	70	LN.FT.	$ 72	$ 6,000
5	4" Wastewater Forcemain (Out of Street)	4	1,341	LN.FT.	$ 44	$ 60,000
6	Local Road Crossing		55	LN.FT.	$ 200	$ 11,000
7	**Construction Subtotal**					**$ 90,000**
8	Contingency 20%		1	L.S.	$ 18,000	$ 18,000
9	**Construction Total**					**$ 108,000**
	Professional Services & Project Incidentals					
10	Engineering Design	20.0%	1	L.S.	$ 22,000	$ 22,000
11	Legal, Bonding, & Fiscal		1	L.S.	$ 5,000	$ 5,000
12	Feasibility Study		1	L.S.	$ 2,000	$ 2,000
13	**Professional Services Total**					$ 29,000
14	**TOTAL**					**$ 137,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Golf Course Drive Lift Station	Project No:	**S07618**
	0.1 MGD Capacity	Estimate Date:	11-May-21
	Hyrum Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 9,000	$ 9,000
2	Quality Control and Testing		1	L.S.	$ 8,000	$ 8,000
3	Earthwork (structure excavation & backfill)		1	L.S.	$ 8,000	$ 8,000
4	Mechanical Piping & Valves		1	L.S.	$ 10,000	$ 10,000
5	Pumps and Motors		1	L.S.	$ 25,000	$ 25,000
6	Electrical Work		1	L.S.	$ 15,000	$ 15,000
7	Controls and Instrumentation		1	L.S.	$ 10,000	$ 10,000
8	Construct Wetwell & Appurtenances		1	L.S.	$ 20,000	$ 20,000
9	Construct Concrete Vault		1	L.S.	$ 20,000	$ 20,000
10	**Construction Subtotal**					**$ 125,000**
11	Contingency 20%		1	L.S.	$ 25,000	$ 25,000
12	**Construction Total**					**$ 150,000**
	Professional Services & Project Incidentals					
13	Engineering Design	20.0%	1	L.S.	$ 30,000	$ 30,000
14	**Professional Services Total**					$ 30,000
15	**TOTAL**					**$ 180,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Gravity Line to Treatment Plant	Project No:	**S07618**
	Johnson Road to Hyrum WWTP	Estimate Date:	3-May-21
	Hyrum Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDW

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 234,000	$ 234,000
2	Traffic Control		1	L.S.	$ 25,000	$ 25,000
3	Subsurface Investigation		80	HR.	$ 225	$ 18,000
4	27" Wastewater Pipe (In Street)	27	245	LN.FT.	$ 223	$ 55,000
5	27" Wastewater Pipe (Out of Street)	27	15,615	LN.FT.	$ 184	$ 2,874,000
6	Rail Road Crossing (36" Bore)	50	1	L.S.	$ 45,000	$ 45,000
7	Canal Crossing		2	EA	$ 25,000	$ 50,000
8	Additional De-Watering		11,000	LN.FT.	$ 25	$ 275,000
9	**Construction Subtotal**					**$ 3,576,000**
10	Contingency 20%		1	L.S.	$ 716,000	$ 716,000
11	**Construction Total**					**$ 4,292,000**
	Professional Services & Project Incidentals					
12	Engineering Design	20.0%	1	L.S.	$ 859,000	$ 859,000
13	Legal, Bonding, & Fiscal	0.2%	1	L.S.	$ 7,000	$ 7,000
14	Feasibility Study	0.0%	1	L.S.	$ 2,000	$ 2,000
15	Easements Acquisition	0.0%	1	L.S.	$ 503,000	$ 503,000
16	**Professional Services Total**					$ 1,371,000
17	**TOTAL**					**$ 5,663,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Wastewater Treatment Plant	Project No:	**S07618**
	1.1 MGD	Estimate Date:	29-Apr-21
	Providence Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Wastewater Treatment Plant Construction		1	L.S.	$ 15,000,000	$ 15,000,000
2	**Construction Subtotal**					**$ 15,000,000**
3	Contingency 20%		1	L.S.	$ 3,000,000	$ 3,000,000
4	**Construction Total**					**$ 18,000,000**
	Professional Services & Project Incidentals					
5	Engineering Design	20.0%	1	L.S.	$ 3,600,000	$ 3,600,000
6	Permitting and Land Acquisition		1	L.S.	$ 1,000,000	$ 1,000,000
7	**Professional Services Total**					$ 4,600,000
8	**TOTAL**					**$ 22,600,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	West Side Gravity Collection System	Project No:	**S07618**
	Providence City New Backbone	Estimate Date:	3-May-21
	Providence Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDW

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 65,000	$ 65,000
2	Traffic Control		1	L.S.	$ 3,000	$ 3,000
3	Subsurface Investigation		35	HR.	$ 225	$ 8,000
4	Connection to Existing Wastewater		2	EA	$ 10,000	$ 20,000
5	8" Wastewater Pipe (In Street)	8	1,860	LN.FT.	$ 131	$ 244,000
6	21" Wastewater Pipe (In Street)	21	650	LN.FT.	$ 191	$ 125,000
7	21" Wastewater Pipe (Out of Street)	21	3,530	LN.FT.	$ 146	$ 516,000
8	**Construction Subtotal**					**$ 981,000**
9	Contingency 20%		1	L.S.	$ 197,000	$ 197,000
10	**Construction Total**					**$ 1,178,000**
	Professional Services & Project Incidentals					
11	Engineering Design	20.0%	1	L.S.	$ 236,000	$ 236,000
12	Legal, Bonding, & Fiscal	0.6%	1	L.S.	$ 7,000	$ 7,000
13	Feasibility Study	0.2%	1	L.S.	$ 2,000	$ 2,000
14	**Professional Services Total**					$ 245,000
15	**TOTAL**					**$ 1,423,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Golf Course Drive Force Main	Project No:	**S07618**
	To Spring Creek Parkway	Estimate Date:	11-May-21
	Providence Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 6,000	$ 6,000
2	Traffic Control		1	L.S.	$ 3,000	$ 3,000
3	Connection to Existing Wastewater		1	EA	$ 3,500	$ 4,000
4	4" Wastewater Forcemain (In Street)	4	70	LN.FT.	$ 72	$ 6,000
5	4" Wastewater Forcemain (Out of Street)	4	1,341	LN.FT.	$ 44	$ 60,000
6	Local Road Crossing		55	LN.FT.	$ 200	$ 11,000
7	**Construction Subtotal**					**$ 90,000**
8	Contingency 20%		1	L.S.	$ 18,000	$ 18,000
9	**Construction Total**					**$ 108,000**
	Professional Services & Project Incidentals					
10	Engineering Design	20.0%	1	L.S.	$ 22,000	$ 22,000
11	Legal, Bonding, & Fiscal		1	L.S.	$ 5,000	$ 5,000
12	Feasibility Study		1	L.S.	$ 2,000	$ 2,000
13	**Professional Services Total**					$ 29,000
14	**TOTAL**					**$ 137,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Golf Course Drive Lift Station	Project No:	**S07618**
	0.1 MGD Capacity	Estimate Date:	14-May-21
	Providence Treatment Facility	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 9,000	$ 9,000
2	Quality Control and Testing		1	L.S.	$ 8,000	$ 8,000
3	Earthwork (structure excavation & backfill)		1	L.S.	$ 8,000	$ 8,000
4	Mechanical Piping & Valves		1	L.S.	$ 10,000	$ 10,000
5	Pumps and Motors		1	L.S.	$ 25,000	$ 25,000
6	Electrical Work		1	L.S.	$ 15,000	$ 15,000
7	Controls and Instrumentation		1	L.S.	$ 10,000	$ 10,000
8	Construct Wetwell & Appurtenances		1	L.S.	$ 20,000	$ 20,000
9	Construct Concrete Vault		1	L.S.	$ 20,000	$ 20,000
10	**Construction Subtotal**					**$ 125,000**
11	Contingency 20%		1	L.S.	$ 25,000	$ 25,000
12	**Construction Total**					**$ 150,000**
	Professional Services & Project Incidentals					
13	Engineering Design	20.0%	1	L.S.	$ 30,000	$ 30,000
14	**Professional Services Total**					$ 30,000
15	**TOTAL**					**$ 180,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project:	Line Replacement - P_11T-09_11T-07	Project No:	**S07618**
	15" Gravity Line	Estimate Date:	30-Apr-21
	Intersection of Main St & 100 N	Project Year:	2025
Owner:	Providence City	By:	SDT

ITEM NO.	ITEM		QUANTITY	UNIT	UNIT PRICE	TOTAL PROJECT AMOUNT
	Construction					
1	Mobilization (7%)		1	L.S.	$ 5,000	$ 5,000
2	Traffic Control		1	L.S.	$ 8,000	$ 8,000
3	Subsurface Investigation		5	HR.	$ 225	$ 2,000
4	Connection to Existing Wastewater		2	EA	$ 10,000	$ 20,000
5	15" Wastewater Pipe (In Street)	15	28	LN.FT.	$ 157	$ 5,000
6	Bypass Pumping		1	L.S.	$ 25,000	$ 25,000
7	**Construction Subtotal**					**$ 65,000**
8	Contingency 20%		1	L.S.	$ 13,000	$ 13,000
9	**Construction Total**					**$ 78,000**
	Professional Services & Project Incidentals					
10	Engineering Design	20.0%	1	L.S.	$ 16,000	$ 16,000
11	Legal, Bonding, & Fiscal	9.0%	1	L.S.	$ 7,000	$ 7,000
12	Feasibility Study	2.6%	1	L.S.	$ 2,000	$ 2,000
13	**Professional Services Total**					$ 25,000
14	**TOTAL**					**$ 103,000**

SUNRISE ENGINEERING, INC.

CONSULTING ENGINEERS AND SURVEYORS

Detailed Project Budget

Project: Capital Improvement Projects Summary

Project No:

Estimate Date: 11-May-21

Owner: Providence City

By: SDW & SDT

ITEM NO.	ITEM	YEAR	TOTAL PROJECT AMOUNT
	Logan City Treatment - Option A		
1	18" Outfall Line to Lift Station	2025	$ 4,248,000
2	West Side Gravity Collection System	2025	$ 395,000
3	West Side Force Main to Existing System	2025	$ 344,000
4	West Side Lift Station (0.3 MGD)	2025	$ 180,000
5	Golf Course Drive Force Main	2025	$ 137,000
6	Golf Course Drive Lift Station (0.1 MGD)	2025	$ 180,000
7	**Logan City Treatment - Option A Subtotal**	**2025**	**$ 5,484,000**
	Logan City Treatment - Option B		
8	21" Outfall Line to Lift Station - Providence Portion	2025	$ 3,948,000
8A	*21" Outfall Line to Lift Station - Logan Portion*	*2025*	*$ 523,000*
8B	*21" Outfall Line to Lift Station - Total*	*2025*	*$ 4,471,000*
9	West Side Gravity Collection System	2025	$ 395,000
10	West Side Force Main to Existing System	2025	$ 344,000
11	West Side Lift Station (0.3 MGD)	2025	$ 180,000
12	**Logan City Treatment - Option B Subtotal**	**2025**	**$ 4,867,000**
	Hyrum City Treatment		
13	Wastewater Treatment Master Plan	2025	$ 25,000
14	Hyrum City WWTP Upgrade	2025	$ 17,280,000
15	West Side Gravity Collection System	2025	$ 1,423,000
16	Providence Force Main	2025	$ 3,141,000
17	Providence Lift Station (1.3 MGD)	2025	$ 2,840,000
18	Golf Course Drive Force Main	2025	$ 137,000
19	Golf Course Drive Lift Station (0.1 MGD)	2025	$ 180,000
20	Gravity Line to Treatment Plant	2025	$ 5,663,000
21	**Hyrum City Treatment Subtotal**	**2025**	**$ 30,689,000**
	Providence City Treatment		
22	Wastewater Treatment Master Plan	2025	$ 25,000
23	Providence City WWTP - Full Process	2025	$ 22,600,000
24	West Side Gravity Collection System	2025	$ 1,423,000
25	Golf Course Drive Force Main	2025	$ 137,000
26	Golf Course Drive Lift Station (0.1 MGD)	2025	$ 180,000
27	**Providence City Treatment Subtotal**	**2025**	**$ 24,365,000**
	Line Replacement		
28	Line Replacement - P_11T-09_11T-07	2023	$ 103,000

Appendix D – Cash Flow Analysis

Appendix D - Cash Flow Analysis

		Monthly User Rate				Loan Terms										Lift Stations		Fees	
Alt	Treatment Option	Existing	New	Increase	Year Increased	Loan Year	Project Cost	Loan Amount	Grant	Interest Rate	Loan Length	Annual Payment	Monthly Payment	2021 ERUs	Monthly Per ERU	O&M	Startup	Current Impact	Current Connection
1	Logan Treatment - Do Nothing	$38.99	$38.99	$ -		2020	$ -	$ -	$ -	0.00%	0	$ -	$ -	3,000	$ -	$ -	2020	$2,433	$ 150
2A	Logan Treatment A	$38.99	$48.10	$ 9.11	2022	2025	$ 5,484,000	$ 5,484,000	$ -	2.50%	30	$ 262,013	$21,834	3,000	$ 7.28	$10,000	2025	$2,433	$ 150
2B	Logan Treatment B	$38.99	$47.02	$ 8.03	2022	2025	$ 4,867,000	$ 4,867,000	$ -	2.50%	30	$ 232,534	$19,378	3,000	$ 6.46	$10,000	2025	$2,433	$ 150
3	Hyrum Treatment	$38.99	$73.27	$34.28	2022	2025	$30,689,000	$21,965,000	$8,724,000	2.50%	30	$1,049,436	$87,453	3,000	$ 29.15	$20,000	2025	$2,433	$ 150
4	Providence Treatment	$38.99	$73.27	$34.28	2022	2025	$24,365,000	$20,635,000	$3,730,000	2.50%	30	$ 985,892	$82,158	3,000	$ 27.39	$10,000	2025	$2,433	$ 150

PROVIDENCE WASTEWATER CASH FLOW
Logan Treatment - Do Nothing - Option

Water Service Size	Current Sewer User Rates Monthly Rate	Year Rate
1" Connection	$ 38.99	$ 467.88
1 1/2" Connection	$ 57.55	$ 690.60
2" Connection	$ 77.55	$ 930.60
3" Connection	$ 116.97	$ 1,403.64
4" Connection	$ 155.96	$ 1,871.52
6" Connection	$ 233.94	$ 2,807.28

Current Fees	
Impact Fee	Connection Fee
$ 2,433.00	$ 150.00

Interest Rate on Cash on Hand	0.32%
Inflation	3.0%

Wastewater Improvements	
City Amount	$ -
Grant Amount	$ -
Loan Amount	$ -
Interest Rate	0.00%
Term (Years)	0
Project Cost	$ -
Year Start	2020

Lift Station O&M	$0
Operation Start	2020

	0	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
Yearly Growth Rate Residential	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Yearly Growth Rate Commercial	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Indexed Inflation Multiplier				1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344	1.384	1.426	1.469	1.513	1.558	1.605	1.653	1.702	1.754	1.806
General Information																								
Flow Information																								
Average Calculated Flow (thousand gal/year)				223350	230867	238026	245185	253238	261292	269346	277400	285453	294402	303351	312299	321248	331091	340935	350778	360622	371360	382993	394627	406260
Connections																								
Residential - 1"				2173	2227	2282	2339	2397	2456	2517	2579	2643	2709	2776	2845	2916	2988	3062	3138	3216	3296	3377	3461	3547
Residential - 1 1/2"				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Residential - 2"				5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8
Residential - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial - 1"				47	48	49	51	52	53	54	56	57	59	60	62	63	65	66	68	70	71	73	75	77
Commercial - 1 1/2"				10	10	11	11	11	11	12	12	12	12	13	13	13	14	14	14	15	15	16	16	16
Commercial - 2"				13	13	14	14	14	15	15	15	16	16	17	17	17	18	18	19	19	20	20	21	21
Commercial - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi-Family - 1"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 1 1/2"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 2"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
Multi-Family - 4"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
City - 1"				21	22	22	23	23	24	24	25	26	26	27	27	28	29	30	30	31	32	33	33	34
City - 2"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
City - No Bill Rate				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Religious - 2"				9	9	9	10	10	10	10	11	11	11	11	12	12	12	13	13	13	14	14	14	15
Educational - 1"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
Educational - 2"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Educational - 4"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Total Number of Connections				**2320**	**2378**	**2436**	**2497**	**2559**	**2622**	**2687**	**2754**	**2822**	**2892**	**2964**	**3038**	**3113**	**3190**	**3269**	**3350**	**3433**	**3518**	**3606**	**3695**	**3787**
ERUs																								
Sewer - Residential ERU				2680	2750	2820	2890	2970	3050	3130	3210	3290	3380	3470	3560	3650	3750	3850	3950	4050	4160	4270	4380	4490
Sewer - Commercial ERU				236	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	430	450	470
Total Number of ERUs				**2916**	**3000**	**3080**	**3160**	**3250**	**3340**	**3430**	**3520**	**3610**	**3710**	**3810**	**3910**	**4010**	**4120**	**4230**	**4340**	**4450**	**4570**	**4700**	**4830**	**4960**
New ERUs																								
New - Residential ERU					70	70	70	80	80	80	80	80	90	90	90	90	100	100	100	100	110	110	110	110
New - Commercial ERU					14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	20	20	20
Total Number of New ERUs					**84**	**80**	**80**	**90**	**90**	**90**	**90**	**90**	**100**	**100**	**100**	**100**	**110**	**110**	**110**	**110**	**120**	**130**	**130**	**130**
Revenue																								
Operating Income																								
1" Connection User Rates				$1,053,666	$ 1,079,867	$ 1,106,068	$ 1,134,609	$ 1,162,214	$ 1,191,222	$ 1,220,231	$ 1,250,643	$ 1,281,991	$ 1,313,807	$ 1,346,091	$ 1,379,310	$ 1,413,465	$ 1,449,492	$ 1,485,051	$ 1,521,546	$ 1,559,444	$ 1,598,278	$ 1,637,580	$ 1,677,818	$ 1,719,927
1 1/2" Connection User Rates				$ 13,812	$ 13,812	$ 14,503	$ 15,193	$ 15,193	$ 15,193	$ 15,884	$ 16,574	$ 17,265	$ 17,265	$ 17,956	$ 17,956	$ 17,956	$ 19,337	$ 19,337	$ 19,337	$ 20,027	$ 21,409	$ 22,099	$ 22,099	$ 22,099
2" Connection User Rates				$ 35,363	$ 35,363	$ 36,293	$ 37,224	$ 39,085	$ 40,946	$ 40,946	$ 41,877	$ 42,808	$ 42,808	$ 44,669	$ 46,530	$ 46,530	$ 48,391	$ 49,322	$ 51,183	$ 51,183	$ 54,905	$ 54,905	$ 56,767	$ 58,628
3" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4" Connection User Rates				$ 13,101	$ 13,101	$ 13,101	$ 13,101	$ 14,972	$ 14,972	$ 14,972	$ 14,972	$ 14,972	$ 14,972	$ 16,844	$ 16,844	$ 16,844	$ 16,844	$ 16,844	$ 18,715	$ 18,715	$ 20,587	$ 20,587	$ 22,458	$ 22,458
6" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Connection Fees				$ 10,950	$ 8,400	$ 8,700	$ 9,450	$ 9,300	$ 9,600	$ 9,450	$ 10,200	$ 10,350	$ 10,200	$ 10,950	$ 10,950	$ 10,950	$ 12,150	$ 11,550	$ 12,150	$ 12,300	$ 13,650	$ 12,750	$ 13,350	$ 13,800
Subtotal Operating Income	**$1,041,730**	**$ 967,758**	**$1,213,854**	**$1,126,891**	**$ 1,150,542**	**$ 1,178,665**	**$ 1,209,577**	**$ 1,240,764**	**$ 1,271,934**	**$ 1,301,483**	**$ 1,334,267**	**$ 1,367,386**	**$ 1,399,052**	**$ 1,436,509**	**$ 1,471,590**	**$ 1,505,745**	**$ 1,546,214**	**$ 1,582,103**	**$ 1,622,931**	**$ 1,661,670**	**$ 1,708,829**	**$ 1,747,921**	**$ 1,792,492**	**$ 1,836,912**
Non-Operating Income																								
3810 - INTEREST EARNINGS	$ 5,642.19	$ 9,038.74	$14,201.75	$10,858.19	$ 10,914.99	$ 11,089.31	$ 11,255.94	$ 11,412.80	$ 11,557.47	$ 11,686.47	$ 11,791.10	$ 11,878.05	$ 11,944.65	$ 11,982.37	$ 12,005.76	$ 12,003.12	$ 11,967.27	$ 11,914.02	$ 11,824.27	$ 11,709.16	$ 11,557.26	$ 11,390.58	$ 11,178.31	$ 10,932.71
Residential Impact Fees	$ -	$ -	$ -	$ 2,433.00	$170,310.00	$170,310.00	$170,310.00	$ 194,640.00	$194,640.00	$ 194,640.00	$194,640.00	$194,640.00	$218,970.00	$218,970.00	$218,970.00	$ 218,970.00	$243,300.00	$243,300.00	$243,300.00	$243,300.00	$267,630.00	$267,630.00	$267,630.00	$267,630.00
Commercial Impact Fees	$ -	$ -	$ -	$ -	$ 34,062.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 48,660.00	$ 48,660.00	$ 48,660.00
Subtotal Non-Operating Income	**$ 5,642**	**$ 9,039**	**$ 14,202**	**$ 13,291**	**$ 215,287**	**$ 205,729**	**$ 205,896**	**$ 230,383**	**$ 230,527**	**$ 230,656**	**$ 230,761**	**$ 230,848**	**$ 255,245**	**$ 255,282**	**$ 255,306**	**$ 255,303**	**$ 279,597**	**$ 279,544**	**$ 279,454**	**$ 279,339**	**$ 303,517**	**$ 327,681**	**$ 327,468**	**$ 327,223**
Total Revenue	**$1,047,372**	**$ 976,797**	**$1,228,056**	**$1,140,182**	**$ 1,365,829**	**$ 1,384,394**	**$ 1,415,473**	**$ 1,471,147**	**$ 1,502,462**	**$ 1,532,140**	**$ 1,565,028**	**$ 1,598,234**	**$ 1,654,296**	**$ 1,691,791**	**$ 1,726,895**	**$ 1,761,048**	**$ 1,825,811**	**$ 1,861,647**	**$ 1,902,385**	**$ 1,941,009**	**$ 2,012,346**	**$ 2,075,602**	**$ 2,119,960**	**$ 2,164,135**
Expenses																								
Collection Operating Expenses																								
4011 - Salaries & Wages-Transfer to Admin	$ 53,577	$ 52,389	$ 52,980	$ 52,192	$ 53,758	$ 55,371	$ 57,032	$ 58,743	$ 60,505	$ 62,320	$ 64,190	$ 66,116	$ 68,099	$ 70,142	$ 72,246	$ 74,414	$ 76,646	$ 78,946	$ 81,314	$ 83,753	$ 86,266	$ 88,854	$ 91,520	$ 94,265
4013 - EMP Benefits-Transfer to Admin	$ 27,525	$ 26,152	$ 30,387	$ 29,942	$ 30,840	$ 31,766	$ 32,719	$ 33,700	$ 34,711	$ 35,752	$ 36,825	$ 37,930	$ 39,068	$ 40,240	$ 41,447	$ 42,690	$ 43,971	$ 45,290	$ 46,649	$ 48,048	$ 49,490	$ 50,974	$ 52,504	$ 54,079
4020 - Bad Debt - Write Off	$ -	$ -	$ -	$ 43,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4021 - Books, Subscriptions, & Members	$ -	$ 25	$ 50	$ 25	$ 26	$ 27	$ 27	$ 28	$ 29	$ 30	$ 31	$ 32	$ 33	$ 34	$ 35	$ 36	$ 37	$ 38	$ 39	$ 40	$ 41	$ 43	$ 44	$ 45
4024 - Office Supplies and Expense	$ 5,512	$ 5,323	$ 5,819	$ 5,513	$ 5,678	$ 5,849	$ 6,024	$ 6,205	$ 6,391	$ 6,583	$ 6,780	$ 6,983	$ 7,193	$ 7,409	$ 7,631	$ 7,860	$ 8,096	$ 8,339	$ 8,589	$ 8,846	$ 9,112	$ 9,385	$ 9,667	$ 9,957
4025 - Equipment - Supplies & Maintenance	$ 396	$ 676	$ 5,668	$ 1,953	$ 2,012	$ 2,072	$ 2,135	$ 2,199	$ 2,265	$ 2,333	$ 2,402	$ 2,475	$ 2,549	$ 2,625	$ 2,704	$ 2,785	$ 2,869	$ 2,955	$ 3,043	$ 3,135	$ 3,229	$ 3,326	$ 3,425	$ 3,528
4027 - Utilities	$ 1,131	$ 1,294	$ 1,391	$ 1,128	$ 1,162	$ 1,197	$ 1,233	$ 1,270	$ 1,308	$ 1,347	$ 1,387	$ 1,429	$ 1,472	$ 1,516	$ 1,561	$ 1,608	$ 1,656	$ 1,706	$ 1,757	$ 1,810	$ 1,864	$ 1,920	$ 1,978	$ 2,037
4028 - Telephone	$ -	$ 332	$ 293	$ 509	$ 524	$ 540	$ 556	$ 573	$ 590	$ 608	$ 626	$ 645	$ 664	$ 684	$ 705	$ 726	$ 748	$ 770	$ 793	$ 817	$ 842	$ 867	$ 893	$ 920
4029 - Logan Sewer Treatment	$ 640,664	$ 615,688	$ 643,787	$ 726,413	$ 748,205	$ 770,651	$ 793,771	$ 817,584	$ 842,111	$ 867,375	$ 893,396	$ 920,198	$ 947,804	$ 976,238	$ 1,005,525	$ 1,035,691	$ 1,066,762	$ 1,098,764	$ 1,131,727	$ 1,165,679	$ 1,200,650	$ 1,236,669	$ 1,273,769	$ 1,311,982
4031 - Professional & Technical Services	$ 34,934	$ 55,238	$ 58,935	$ 59,976	$ 61,775	$ 63,628	$ 65,537	$ 67,503	$ 69,528	$ 71,614	$ 73,763	$ 75,976	$ 78,255	$ 80,603	$ 83,021	$ 85,511	$ 88,077	$ 90,719	$ 93,440	$ 96,244	$ 99,131	$ 102,105	$ 105,168	$ 108,323
Logan City Impact Fees	$ -	$ -	$ -	$ -	$ 206,805	$ 194,640	$ 194,640	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 243,300	$ 243,300	$ 243,300	$ 243,300	$ 267,630	$ 267,630	$ 267,630	$ 267,630	$ 291,960	$ 316,290	$ 316,290	$ 316,290
4033 - Education and Training	$ 375	$ 308	$ -	$ -	$ 318	$ 327	$ 337	$ 347	$ 357	$ 368	$ 379	$ 391	$ 402	$ 414	$ 427	$ 440	$ 453	$ 466	$ 480	$ 495	$ 510	$ 525	$ 541	$ 557
4040 - Line - Repair & Replace	$ 2,305	$ 5,707	$ 122	$ 4,193	$ 4,318	$ 4,448	$ 4,581	$ 4,719	$ 4,860	$ 5,006	$ 5,156	$ 5,311	$ 5,470	$ 5,634	$ 5,803	$ 5,978	$ 6,157	$ 6,342	$ 6,532	$ 6,728	$ 6,930	$ 7,137	$ 7,352	$ 7,572
4045 - Lift Station - Repair & Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4048 - Repairs & Supplies	$ 2,165	$ 1,022	$ 1,035	$ 2,275	$ 2,343	$ 2,413	$ 2,486	$ 2,560	$ 2,637	$ 2,716	$ 2,798	$ 2,882	$ 2,968	$ 3,057	$ 3,149	$ 3,243	$ 3,341	$ 3,441	$ 3,544	$ 3,650	$ 3,760	$ 3,873	$ 3,989	$ 4,109
4062 - Refunds	$ -	$ 150	$ -	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4065 - Depreciation	$ 170,827	$ 181,434	$ 178,712	$ 186,741	$ 192,343	$ 198,114	$ 204,057	$ 210,179	$ 216,484	$ 222,979	$ 229,668	$ 236,558	$ 243,655	$ 250,965	$ 258,494	$ 266,248	$ 274,236	$ 282,463	$ 290,937	$ 299,665	$ 308,655	$ 317,914	$ 327,452	$ 337,275
4090 - Sewer Construction or Capital Expense	$ -	$ -	$ -	$ 1,208	$ 1,244	$ 1,281	$ 1,319	$ 1,359	$ 1,400	$ 1,442	$ 1,485	$ 1,530	$ 1,576	$ 1,623	$ 1,671	$ 1,722	$ 1,773	$ 1,826	$ 1,881	$ 1,938	$ 1,996	$ 2,056	$ 2,117	$ 2,181
Subtotal Collection Operating Expenses	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,366,454**	**$ 1,425,938**	**$ 1,462,147**	**$ 1,499,443**	**$ 1,537,857**	**$ 1,577,424**	**$ 1,642,507**	**$ 1,684,483**	**$ 1,727,719**	**$ 1,772,251**	**$ 1,842,450**	**$ 1,889,695**	**$ 1,938,357**	**$ 1,988,478**	**$ 2,064,434**	**$ 2,141,938**	**$ 2,196,707**	**$ 2,253,120**
Debt Service																								
Debt Payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Reserve Amount (25% Payment)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Debt Service	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Out of Pocket Project Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expense	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,366,454**	**$ 1,425,938**	**$ 1,462,147**	**$ 1,499,443**	**$ 1,537,857**	**$ 1,577,424**	**$ 1,642,507**	**$ 1,684,483**	**$ 1,727,719**	**$ 1,772,251**	**$ 1,842,450**	**$ 1,889,695**	**$ 1,938,357**	**$ 1,988,478**	**$ 2,064,434**	**$ 2,141,938**	**$ 2,196,707**	**$ 2,253,120**
Debt Coverage Ratio																								
PROFIT/LOSS ( )	**$ 107,962**	**$ 31,059**	**$ 248,876**	**$ 24,805**	**$ 54,477**	**$ 52,071**	**$ 49,019**	**$ 45,209**	**$ 40,314**	**$ 32,697**	**$ 27,171**	**$ 20,810**	**$ 11,789**	**$ 7,308**	**$ (824)**	**$ (11,204)**	**$ (16,639)**	**$ (28,047)**	**$ (35,972)**	**$ (47,470)**	**$ (52,088)**	**$ (66,336)**	**$ (76,747)**	**$ (88,985)**
Reserve Account	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Sewer Fund	**$2,918,611**	**$3,131,103**	**$3,386,128**	**$3,410,933**	**$ 3,465,411**	**$ 3,517,481**	**$ 3,566,500**	**$ 3,611,709**	**$ 3,652,023**	**$ 3,684,720**	**$ 3,711,891**	**$ 3,732,702**	**$ 3,744,491**	**$ 3,751,799**	**$ 3,750,975**	**$ 3,739,772**	**$ 3,723,133**	**$ 3,695,085**	**$ 3,659,114**	**$ 3,611,644**	**$ 3,559,557**	**$ 3,493,221**	**$ 3,416,473**	**$ 3,327,488**
Total Cash on Hand	**$2,918,611**	**$3,131,103**	**$3,386,128**	**$3,410,933**	**$ 3,465,411**	**$ 3,517,481**	**$ 3,566,500**	**$ 3,611,709**	**$ 3,652,023**	**$ 3,684,720**	**$ 3,711,891**	**$ 3,732,702**	**$ 3,744,491**	**$ 3,751,799**	**$ 3,750,975**	**$ 3,739,772**	**$ 3,723,133**	**$ 3,695,085**	**$ 3,659,114**	**$ 3,611,644**	**$ 3,559,557**	**$ 3,493,221**	**$ 3,416,473**	**$ 3,327,488**

PROVIDENCE WASTEWATER CASH FLOW
Logan Treatment Option A - 100% Providence Owned Outfall Line

	Current Sewer User Rates		Future Sewer User Rates		
Water Service Size	Monthly Rate	Year Rate	Monthly Rate	Year Rate	Year
1" Connection	$ 38.99	$ 467.88	$ 48.10	$ 577.20	2022
1 1/2" Connection	$ 57.55	$ 690.60	$ 71.00	$ 851.96	2022
2" Connection	$ 77.55	$ 930.60	$ 95.67	$ 1,148.03	2022
3" Connection	$ 116.97	$ 1,403.64	$ 144.30	$ 1,731.60	2022
4" Connection	$ 155.96	$ 1,871.52	$ 192.40	$ 2,308.80	2022
6" Connection	$ 233.94	$ 2,807.28	$ 288.60	$ 3,463.20	2022

Current Fees	
Impact Fee	Connection Fee
$ 2,433.00	$ 150.00

Interest Rate on Cash on Hand	0.32%
Inflation	3.0%

Wastewater Improvements	
City Amount	$ -
Grant Amount	$ -
Loan Amount	$ 5,484,000
Interest Rate	2.50%
Term (Years)	30
Project Cost	$ 5,484,000
Year Start	2025

Lift Station O&M	$10,000
Operation Start	2025

	0	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
Yearly Growth Rate Residential	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Yearly Growth Rate Commercial	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Indexed Inflation Multiplier				1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344	1.384	1.426	1.469	1.513	1.558	1.605	1.653	1.702	1.754	1.806
General Information																								
Flow Information																								
Average Calculated Flow (thousand gal/year)				223350	230867	238026	245185	253238	261292	269346	277400	285453	294402	303351	312299	321248	331091	340935	350778	360622	371360	382993	394627	406260
Connections																								
Residential - 1"				2173	2227	2282	2339	2397	2456	2517	2579	2643	2709	2776	2845	2916	2988	3062	3138	3216	3296	3377	3461	3547
Residential - 1 1/2"				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Residential - 2"				5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8
Residential - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial - 1"				47	48	49	51	52	53	54	56	57	59	60	62	63	65	66	68	70	71	73	75	77
Commercial - 1 1/2"				10	10	11	11	11	11	12	12	12	12	13	13	13	14	14	14	15	15	16	16	16
Commercial - 2"				13	13	14	14	14	15	15	15	16	16	17	17	17	18	18	19	19	20	20	21	21
Commercial - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi-Family - 1"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 1 1/2"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 2"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
Multi-Family - 4"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
City - 1"				21	22	22	23	23	24	24	25	26	26	27	27	28	29	30	30	31	32	33	33	34
City - 2"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
City - No Bill Rate				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Religious - 2"				9	9	9	10	10	10	10	11	11	11	11	12	12	12	13	13	13	14	14	14	15
Educational - 1"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
Educational - 2"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Educational - 4"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Total Number of Connections				**2320**	**2378**	**2436**	**2497**	**2559**	**2622**	**2687**	**2754**	**2822**	**2892**	**2964**	**3038**	**3113**	**3190**	**3269**	**3350**	**3433**	**3518**	**3606**	**3695**	**3787**
ERUs																								
Sewer - Residential ERU				2680	2750	2820	2890	2970	3050	3130	3210	3290	3380	3470	3560	3650	3750	3850	3950	4050	4160	4270	4380	4490
Sewer - Commercial ERU				236	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	430	450	470
Total Number of ERUs				**2916**	**3000**	**3080**	**3160**	**3250**	**3340**	**3430**	**3520**	**3610**	**3710**	**3810**	**3910**	**4010**	**4120**	**4230**	**4340**	**4450**	**4570**	**4700**	**4830**	**4960**
New ERUs																								
New - Residential ERU					70	70	70	80	80	80	80	80	90	90	90	90	100	100	100	100	110	110	110	110
New - Commercial ERU					14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	20	20	20
Total Number of New ERUs					**84**	**80**	**80**	**90**	**90**	**90**	**90**	**90**	**100**	**100**	**100**	**100**	**110**	**110**	**110**	**110**	**120**	**130**	**130**	**130**
Revenue																								
Operating Income																								
1" Connection User Rates				$1,053,666	$ 1,079,867	$ 1,364,501	$ 1,399,710	$ 1,433,765	$ 1,469,551	$ 1,505,338	$ 1,542,856	$ 1,581,528	$ 1,620,778	$ 1,660,604	$ 1,701,586	$ 1,743,721	$ 1,788,166	$ 1,832,033	$ 1,877,054	$ 1,923,808	$ 1,971,715	$ 2,020,200	$ 2,069,839	$ 2,121,787
1 1/2" Connection User Rates				$ 13,812	$ 13,812	$ 17,891	$ 18,743	$ 18,743	$ 18,743	$ 19,595	$ 20,447	$ 21,299	$ 21,299	$ 22,151	$ 22,151	$ 22,151	$ 23,855	$ 23,855	$ 23,855	$ 24,707	$ 26,411	$ 27,263	$ 27,263	$ 27,263
2" Connection User Rates				$ 35,363	$ 35,363	$ 44,773	$ 45,921	$ 48,217	$ 50,514	$ 50,514	$ 51,662	$ 52,810	$ 52,810	$ 55,106	$ 57,402	$ 57,402	$ 59,698	$ 60,846	$ 63,142	$ 63,142	$ 67,734	$ 67,734	$ 70,030	$ 72,326
3" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4" Connection User Rates				$ 13,101	$ 13,101	$ 16,162	$ 16,162	$ 18,470	$ 18,470	$ 18,470	$ 18,470	$ 18,470	$ 18,470	$ 20,779	$ 20,779	$ 20,779	$ 20,779	$ 20,779	$ 23,088	$ 23,088	$ 25,397	$ 25,397	$ 27,706	$ 27,706
6" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Connection Fees				$ 10,950	$ 8,400	$ 8,700	$ 9,450	$ 9,300	$ 9,600	$ 9,450	$ 10,200	$ 10,350	$ 10,200	$ 10,950	$ 10,950	$ 10,950	$ 12,150	$ 11,550	$ 12,150	$ 12,300	$ 13,650	$ 12,750	$ 13,350	$ 13,800
Subtotal Operating Income	**$1,041,730**	**$ 967,758**	**$1,213,854**	**$1,126,891**	**$ 1,150,542**	**$ 1,452,027**	**$ 1,489,986**	**$ 1,528,496**	**$ 1,566,878**	**$ 1,603,367**	**$ 1,643,635**	**$ 1,684,457**	**$ 1,723,557**	**$ 1,769,590**	**$ 1,812,867**	**$ 1,855,003**	**$ 1,904,647**	**$ 1,949,063**	**$ 1,999,289**	**$ 2,047,044**	**$ 2,104,907**	**$ 2,153,343**	**$ 2,208,188**	**$ 2,262,882**
Non-Operating Income																								
3810 - INTEREST EARNINGS	$ 5,642.19	$ 9,038.74	$14,201.75	$10,858.19	$ 10,914.99	$ 11,089.31	$ 12,130.70	$ 12,872.73	$ 13,942.81	$ 14,152.83	$ 14,365.17	$ 14,588.47	$ 14,820.94	$ 15,053.41	$ 15,304.26	$ 15,560.81	$ 15,815.38	$ 16,087.84	$ 16,357.23	$ 16,637.71	$ 16,916.87	$ 17,222.36	$ 17,519.27	$ 17,823.11
Residential Impact Fees	$ -	$ -	$ -	$ 2,433.00	$170,310.00	$170,310.00	$170,310.00	$ 194,640.00	$194,640.00	$ 194,640.00	$194,640.00	$194,640.00	$218,970.00	$218,970.00	$218,970.00	$ 218,970.00	$243,300.00	$243,300.00	$243,300.00	$243,300.00	$267,630.00	$267,630.00	$267,630.00	$267,630.00
Commercial Impact Fees	$ -	$ -	$ -	$ -	$ 34,062.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 48,660.00	$ 48,660.00	$ 48,660.00
Subtotal Non-Operating Income	**$ 5,642**	**$ 9,039**	**$ 14,202**	**$ 13,291**	**$ 215,287**	**$ 205,729**	**$ 206,771**	**$ 231,843**	**$ 232,913**	**$ 233,123**	**$ 233,335**	**$ 233,558**	**$ 258,121**	**$ 258,353**	**$ 258,604**	**$ 258,861**	**$ 283,445**	**$ 283,718**	**$ 283,987**	**$ 284,268**	**$ 308,877**	**$ 333,512**	**$ 333,809**	**$ 334,113**
Total Revenue	**$1,047,372**	**$ 976,797**	**$1,228,056**	**$1,140,182**	**$ 1,365,829**	**$ 1,657,756**	**$ 1,696,757**	**$ 1,760,338**	**$ 1,799,791**	**$ 1,836,489**	**$ 1,876,970**	**$ 1,918,015**	**$ 1,981,677**	**$ 2,027,944**	**$ 2,071,472**	**$ 2,113,864**	**$ 2,188,093**	**$ 2,232,780**	**$ 2,283,276**	**$ 2,331,312**	**$ 2,413,784**	**$ 2,486,856**	**$ 2,541,997**	**$ 2,596,995**
Expenses																								
Collection Operating Expenses																								
4011 - Salaries & Wages-Transfer to Admin	$ 53,577	$ 52,389	$ 52,980	$ 52,192	$ 53,758	$ 55,371	$ 57,032	$ 58,743	$ 60,505	$ 62,320	$ 64,190	$ 66,116	$ 68,099	$ 70,142	$ 72,246	$ 74,414	$ 76,646	$ 78,946	$ 81,314	$ 83,753	$ 86,266	$ 88,854	$ 91,520	$ 94,265
4013 - EMP Benefits-Transfer to Admin	$ 27,525	$ 26,152	$ 30,387	$ 29,942	$ 30,840	$ 31,766	$ 32,719	$ 33,700	$ 34,711	$ 35,752	$ 36,825	$ 37,930	$ 39,068	$ 40,240	$ 41,447	$ 42,690	$ 43,971	$ 45,290	$ 46,649	$ 48,048	$ 49,490	$ 50,974	$ 52,504	$ 54,079
4020 - Bad Debt - Write Off	$ -	$ -	$ -	$ 43,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4021 - Books, Subscriptions, & Members	$ -	$ 25	$ 50	$ 25	$ 26	$ 27	$ 27	$ 28	$ 29	$ 30	$ 31	$ 32	$ 33	$ 34	$ 35	$ 36	$ 37	$ 38	$ 39	$ 40	$ 41	$ 43	$ 44	$ 45
4024 - Office Supplies and Expense	$ 5,512	$ 5,323	$ 5,819	$ 5,513	$ 5,678	$ 5,849	$ 6,024	$ 6,205	$ 6,391	$ 6,583	$ 6,780	$ 6,983	$ 7,193	$ 7,409	$ 7,631	$ 7,860	$ 8,096	$ 8,339	$ 8,589	$ 8,846	$ 9,112	$ 9,385	$ 9,667	$ 9,957
4025 - Equipment - Supplies & Maintenance	$ 396	$ 676	$ 5,668	$ 1,953	$ 2,012	$ 2,072	$ 2,135	$ 2,199	$ 2,265	$ 2,333	$ 2,402	$ 2,475	$ 2,549	$ 2,625	$ 2,704	$ 2,785	$ 2,869	$ 2,955	$ 3,043	$ 3,135	$ 3,229	$ 3,326	$ 3,425	$ 3,528
4027 - Utilities	$ 1,131	$ 1,294	$ 1,391	$ 1,128	$ 1,162	$ 1,197	$ 1,233	$ 1,270	$ 1,308	$ 1,347	$ 1,387	$ 1,429	$ 1,472	$ 1,516	$ 1,561	$ 1,608	$ 1,656	$ 1,706	$ 1,757	$ 1,810	$ 1,864	$ 1,920	$ 1,978	$ 2,037
4028 - Telephone	$ -	$ 332	$ 293	$ 509	$ 524	$ 540	$ 556	$ 573	$ 590	$ 608	$ 626	$ 645	$ 664	$ 684	$ 705	$ 726	$ 748	$ 770	$ 793	$ 817	$ 842	$ 867	$ 893	$ 920
4029 - Logan Sewer Treatment	$ 640,664	$ 615,688	$ 643,787	$ 726,413	$ 748,205	$ 770,651	$ 793,771	$ 817,584	$ 842,111	$ 867,375	$ 893,396	$ 920,198	$ 947,804	$ 976,238	$ 1,005,525	$ 1,035,691	$ 1,066,762	$ 1,098,764	$ 1,131,727	$ 1,165,679	$ 1,200,650	$ 1,236,669	$ 1,273,769	$ 1,311,982
4031 - Professional & Technical Services	$ 34,934	$ 55,238	$ 58,935	$ 59,976	$ 61,775	$ 63,628	$ 65,537	$ 67,503	$ 69,528	$ 71,614	$ 73,763	$ 75,976	$ 78,255	$ 80,603	$ 83,021	$ 85,511	$ 88,077	$ 90,719	$ 93,440	$ 96,244	$ 99,131	$ 102,105	$ 105,168	$ 108,323
Logan City Impact Fees	$ -	$ -	$ -	$ -	$ 206,805	$ 194,640	$ 194,640	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 243,300	$ 243,300	$ 243,300	$ 243,300	$ 267,630	$ 267,630	$ 267,630	$ 267,630	$ 291,960	$ 316,290	$ 316,290	$ 316,290
4033 - Education and Training	$ 375	$ 308	$ -	$ -	$ 318	$ 327	$ 337	$ 347	$ 357	$ 368	$ 379	$ 391	$ 402	$ 414	$ 427	$ 440	$ 453	$ 466	$ 480	$ 495	$ 510	$ 525	$ 541	$ 557
4040 - Line - Repair & Replace	$ 2,305	$ 5,707	$ 122	$ 4,193	$ 4,318	$ 4,448	$ 103,000	$ 4,719	$ 4,860	$ 5,006	$ 5,156	$ 5,311	$ 5,470	$ 5,634	$ 5,803	$ 5,978	$ 6,157	$ 6,342	$ 6,532	$ 6,728	$ 6,930	$ 7,137	$ 7,352	$ 7,572
4045 - Lift Station - Repair & Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000	$ 10,300	$ 10,609	$ 10,927	$ 11,255	$ 11,593	$ 11,941	$ 12,299	$ 12,668	$ 13,048	$ 13,439	$ 13,842	$ 14,258	$ 14,685	$ 15,126	$ 15,580
4048 - Repairs & Supplies	$ 2,165	$ 1,022	$ 1,035	$ 2,275	$ 2,343	$ 2,413	$ 2,486	$ 2,560	$ 2,637	$ 2,716	$ 2,798	$ 2,882	$ 2,968	$ 3,057	$ 3,149	$ 3,243	$ 3,341	$ 3,441	$ 3,544	$ 3,650	$ 3,760	$ 3,873	$ 3,989	$ 4,109
4062 - Refunds	$ -	$ 150	$ -	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4065 - Depreciation	$ 170,827	$ 181,434	$ 178,712	$ 186,741	$ 192,343	$ 198,114	$ 204,057	$ 210,179	$ 216,484	$ 222,979	$ 229,668	$ 236,558	$ 243,655	$ 250,965	$ 258,494	$ 266,248	$ 274,236	$ 282,463	$ 290,937	$ 299,665	$ 308,655	$ 317,914	$ 327,452	$ 337,275
4090 - Sewer Construction or Capital Expense	$ -	$ -	$ -	$ 1,208	$ 1,244	$ 1,281	$ 1,319	$ 1,359	$ 1,400	$ 1,442	$ 1,485	$ 1,530	$ 1,576	$ 1,623	$ 1,671	$ 1,722	$ 1,773	$ 1,826	$ 1,881	$ 1,938	$ 1,996	$ 2,056	$ 2,117	$ 2,181
Subtotal Collection Operating Expenses	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,464,873**	**$ 1,425,938**	**$ 1,472,147**	**$ 1,509,743**	**$ 1,548,466**	**$ 1,588,351**	**$ 1,653,762**	**$ 1,696,076**	**$ 1,739,659**	**$ 1,784,550**	**$ 1,855,118**	**$ 1,902,742**	**$ 1,951,796**	**$ 2,002,321**	**$ 2,078,691**	**$ 2,156,623**	**$ 2,211,833**	**$ 2,268,700**
Debt Service																								
Debt Payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013	$ 262,013
Reserve Amount (25% Payment)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503	$ 65,503
Subtotal Debt Service	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**	**$ 327,516**
Out of Pocket Project Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expense	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,464,873**	**$ 1,425,938**	**$ 1,799,663**	**$ 1,837,259**	**$ 1,875,982**	**$ 1,915,867**	**$ 1,981,278**	**$ 2,023,592**	**$ 2,067,175**	**$ 2,112,066**	**$ 2,182,633**	**$ 2,230,258**	**$ 2,279,311**	**$ 2,329,836**	**$ 2,406,207**	**$ 2,484,139**	**$ 2,539,349**	**$ 2,596,215**
Debt Coverage Ratio									**1.00**	**1.00**	**1.00**	**1.01**	**1.00**	**1.01**	**1.01**	**1.01**	**1.02**	**1.01**	**1.01**	**1.00**	**1.02**	**1.01**	**1.01**	**1.00**
PROFIT/LOSS ( )	**$ 107,962**	**$ 31,059**	**$ 248,876**	**$ 24,805**	**$ 54,477**	**$ 325,433**	**$ 231,884**	**$ 334,400**	**$ 128**	**$ (769)**	**$ 988**	**$ 2,149**	**$ 399**	**$ 4,352**	**$ 4,297**	**$ 1,798**	**$ 5,459**	**$ 2,522**	**$ 3,965**	**$ 1,476**	**$ 7,576**	**$ 2,717**	**$ 2,648**	**$ 779**
Reserve Account	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 65,503**	**$ 132,631**	**$ 201,423**	**$ 271,922**	**$ 344,168**	**$ 418,207**	**$ 494,082**	**$ 571,838**	**$ 651,523**	**$ 733,184**	**$ 816,870**	**$ 902,631**	**$ 990,520**	**$ 1,080,588**	**$ 1,172,889**	**$ 1,267,480**
Total Sewer Fund	**$2,918,611**	**$3,131,103**	**$3,386,128**	**$3,410,933**	**$ 3,465,411**	**$ 3,790,843**	**$ 4,022,727**	**$ 4,357,127**	**$ 4,357,255**	**$ 4,356,486**	**$ 4,357,474**	**$ 4,359,623**	**$ 4,360,022**	**$ 4,364,374**	**$ 4,368,671**	**$ 4,370,468**	**$ 4,375,928**	**$ 4,378,450**	**$ 4,382,415**	**$ 4,383,891**	**$ 4,391,467**	**$ 4,394,184**	**$ 4,396,832**	**$ 4,397,611**
Total Cash on Hand	**$2,918,611**	**$3,131,103**	**$3,386,128**	**$3,410,933**	**$ 3,465,411**	**$ 3,790,843**	**$ 4,022,727**	**$ 4,357,127**	**$ 4,422,758**	**$ 4,489,117**	**$ 4,558,897**	**$ 4,631,544**	**$ 4,704,191**	**$ 4,782,581**	**$ 4,862,752**	**$ 4,942,306**	**$ 5,027,451**	**$ 5,111,634**	**$ 5,199,285**	**$ 5,286,522**	**$ 5,381,987**	**$ 5,474,772**	**$ 5,569,721**	**$ 5,665,091**

PROVIDENCE WASTEWATER CASH FLOW
Logan Treatment Option - Shared Outfall Line

Water Service Size	Current Sewer User Rates Monthly Rate	Current Sewer User Rates Year Rate	Future Sewer User Rates Monthly Rate	Future Sewer User Rates Year Rate	Year
1" Connection	$ 38.99	$ 467.88	$ 47.02	$ 564.24	2022
1 1/2" Connection	$ 57.55	$ 690.60	$ 69.40	$ 832.83	2022
2" Connection	$ 77.55	$ 930.60	$ 93.52	$ 1,122.26	2022
3" Connection	$ 116.97	$ 1,403.64	$ 141.06	$ 1,692.72	2022
4" Connection	$ 155.96	$ 1,871.52	$ 188.08	$ 2,256.96	2022
6" Connection	$ 233.94	$ 2,807.28	$ 282.12	$ 3,385.44	2022

Current Fees	
Impact Fee	Connection Fee
$ 2,433.00	$ 150.00

Interest Rate on Cash on Hand	0.32%
Inflation	3.0%

Wastewater Improvements	
City Amount	$ -
Grant Amount	$ -
Loan Amount	$ 4,867,000
Interest Rate	2.50%
Term (Years)	30
Project Cost	$ 4,867,000
Year Start	2025

Lift Station O&M	$10,000
Operation Start	2025

	0	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
Yearly Growth Rate Residential	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Yearly Growth Rate Commercial	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Indexed Inflation Multiplier				1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344	1.384	1.426	1.469	1.513	1.558	1.605	1.653	1.702	1.754	1.806
General Information																								
Flow Information																								
Average Calculated Flow (thousand gal/year)				223350	230867	238026	245185	253238	261292	269346	277400	285453	294402	303351	312299	321248	331091	340935	350778	360622	371360	382993	394627	406260
Connections																								
Residential - 1"				2173	2227	2282	2339	2397	2456	2517	2579	2643	2709	2776	2845	2916	2988	3062	3138	3216	3296	3377	3461	3547
Residential - 1 1/2"				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Residential - 2"				5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8
Residential - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial - 1"				47	48	49	51	52	53	54	56	57	59	60	62	63	65	66	68	70	71	73	75	77
Commercial - 1 1/2"				10	10	11	11	11	11	12	12	12	12	13	13	13	14	14	14	15	15	16	16	16
Commercial - 2"				13	13	14	14	14	15	15	15	16	16	17	17	17	18	18	19	19	20	20	21	21
Commercial - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi-Family - 1"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 1 1/2"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 2"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
Multi-Family - 4"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
City - 1"				21	22	22	23	23	24	24	25	26	26	27	27	28	29	30	30	31	32	33	33	34
City - 2"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
City - No Bill Rate				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Religious - 2"				9	9	9	10	10	10	10	11	11	11	11	12	12	12	13	13	13	14	14	14	15
Educational - 1"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
Educational - 2"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Educational - 4"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Total Number of Connections				**2320**	**2378**	**2436**	**2497**	**2559**	**2622**	**2687**	**2754**	**2822**	**2892**	**2964**	**3038**	**3113**	**3190**	**3269**	**3350**	**3433**	**3518**	**3606**	**3695**	**3787**
ERUs																								
Sewer - Residential ERU				2680	2750	2820	2890	2970	3050	3130	3210	3290	3380	3470	3560	3650	3750	3850	3950	4050	4160	4270	4380	4490
Sewer - Commercial ERU				236	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	430	450	470
Total Number of ERUs				**2916**	**3000**	**3080**	**3160**	**3250**	**3340**	**3430**	**3520**	**3610**	**3710**	**3810**	**3910**	**4010**	**4120**	**4230**	**4340**	**4450**	**4570**	**4700**	**4830**	**4960**
New ERUs																								
New - Residential ERU					70	70	70	80	80	80	80	80	90	90	90	90	100	100	100	100	110	110	110	110
New - Commercial ERU					14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	20	20	20
Total Number of New ERUs					**84**	**80**	**80**	**90**	**90**	**90**	**90**	**90**	**100**	**100**	**100**	**100**	**110**	**110**	**110**	**110**	**120**	**130**	**130**	**130**
Revenue																								
Operating Income																								
1" Connection User Rates				$1,053,666	$ 1,079,867	$ 1,333,863	$ 1,368,282	$ 1,401,572	$ 1,436,555	$ 1,471,538	$ 1,508,214	$ 1,546,018	$ 1,584,386	$ 1,623,318	$ 1,663,380	$ 1,704,569	$ 1,748,016	$ 1,790,898	$ 1,834,908	$ 1,880,612	$ 1,927,444	$ 1,974,840	$ 2,023,365	$ 2,074,146
1 1/2" Connection User Rates				$ 13,812	$ 13,812	$ 17,489	$ 18,322	$ 18,322	$ 18,322	$ 19,155	$ 19,988	$ 20,821	$ 20,821	$ 21,654	$ 21,654	$ 21,654	$ 23,319	$ 23,319	$ 23,319	$ 24,152	$ 25,818	$ 26,651	$ 26,651	$ 26,651
2" Connection User Rates				$ 35,363	$ 35,363	$ 43,768	$ 44,890	$ 47,135	$ 49,379	$ 49,379	$ 50,502	$ 51,624	$ 51,624	$ 53,868	$ 56,113	$ 56,113	$ 58,357	$ 59,480	$ 61,724	$ 61,724	$ 66,213	$ 66,213	$ 68,458	$ 70,702
3" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4" Connection User Rates				$ 13,101	$ 13,101	$ 15,799	$ 15,799	$ 18,056	$ 18,056	$ 18,056	$ 18,056	$ 18,056	$ 18,056	$ 20,313	$ 20,313	$ 20,313	$ 20,313	$ 20,313	$ 22,570	$ 22,570	$ 24,827	$ 24,827	$ 27,084	$ 27,084
6" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Connection Fees				$ 10,950	$ 8,400	$ 8,700	$ 9,450	$ 9,300	$ 9,600	$ 9,450	$ 10,200	$ 10,350	$ 10,200	$ 10,950	$ 10,950	$ 10,950	$ 12,150	$ 11,550	$ 12,150	$ 12,300	$ 13,650	$ 12,750	$ 13,350	$ 13,800
Subtotal Operating Income	**$1,041,730**	**$ 967,758**	**$1,213,854**	**$1,126,891**	**$ 1,150,542**	**$ 1,419,620**	**$ 1,456,743**	**$ 1,494,385**	**$ 1,531,912**	**$ 1,567,578**	**$ 1,606,959**	**$ 1,646,868**	**$ 1,685,086**	**$ 1,730,103**	**$ 1,772,409**	**$ 1,813,598**	**$ 1,862,155**	**$ 1,905,559**	**$ 1,954,671**	**$ 2,001,358**	**$ 2,057,951**	**$ 2,105,280**	**$ 2,158,906**	**$ 2,212,383**
Non-Operating Income																								
3810 - INTEREST EARNINGS	$ 5,642.19	$ 9,038.74	$14,201.75	$10,858.19	$ 10,914.99	$ 11,089.31	$ 12,026.99	$ 12,662.31	$ 13,622.57	$ 13,814.00	$ 14,004.49	$ 14,202.42	$ 14,405.90	$ 14,605.84	$ 14,820.16	$ 15,036.29	$ 15,246.61	$ 15,470.50	$ 15,687.21	$ 15,910.56	$ 16,128.23	$ 16,367.21	$ 16,593.07	$ 16,820.93
Residential Impact Fees	$ -	$ -	$ -	$ 2,433.00	$170,310.00	$170,310.00	$170,310.00	$ 194,640.00	$194,640.00	$ 194,640.00	$194,640.00	$194,640.00	$218,970.00	$218,970.00	$218,970.00	$ 218,970.00	$243,300.00	$243,300.00	$243,300.00	$243,300.00	$267,630.00	$267,630.00	$267,630.00	$267,630.00
Commercial Impact Fees	$ -	$ -	$ -	$ -	$ 34,062.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 48,660.00	$ 48,660.00	$ 48,660.00
Subtotal Non-Operating Income	**$ 5,642**	**$ 9,039**	**$ 14,202**	**$ 13,291**	**$ 215,287**	**$ 205,729**	**$ 206,667**	**$ 231,632**	**$ 232,593**	**$ 232,784**	**$ 232,974**	**$ 233,172**	**$ 257,706**	**$ 257,906**	**$ 258,120**	**$ 258,336**	**$ 282,877**	**$ 283,100**	**$ 283,317**	**$ 283,541**	**$ 308,088**	**$ 332,657**	**$ 332,883**	**$ 333,111**
Total Revenue	**$1,047,372**	**$ 976,797**	**$1,228,056**	**$1,140,182**	**$ 1,365,829**	**$ 1,625,349**	**$ 1,663,410**	**$ 1,726,017**	**$ 1,764,505**	**$ 1,800,362**	**$ 1,839,933**	**$ 1,880,040**	**$ 1,942,792**	**$ 1,988,009**	**$ 2,030,529**	**$ 2,071,934**	**$ 2,145,031**	**$ 2,188,660**	**$ 2,237,989**	**$ 2,284,898**	**$ 2,366,040**	**$ 2,437,937**	**$ 2,491,789**	**$ 2,545,493**
Expenses																								
Collection Operating Expenses																								
4011 - Salaries & Wages-Transfer to Admin	$ 53,577	$ 52,389	$ 52,980	$ 52,192	$ 53,758	$ 55,371	$ 57,032	$ 58,743	$ 60,505	$ 62,320	$ 64,190	$ 66,116	$ 68,099	$ 70,142	$ 72,246	$ 74,414	$ 76,646	$ 78,946	$ 81,314	$ 83,753	$ 86,266	$ 88,854	$ 91,520	$ 94,265
4013 - EMP Benefits-Transfer to Admin	$ 27,525	$ 26,152	$ 30,387	$ 29,942	$ 30,840	$ 31,766	$ 32,719	$ 33,700	$ 34,711	$ 35,752	$ 36,825	$ 37,930	$ 39,068	$ 40,240	$ 41,447	$ 42,690	$ 43,971	$ 45,290	$ 46,649	$ 48,048	$ 49,490	$ 50,974	$ 52,504	$ 54,079
4020 - Bad Debt - Write Off	$ -	$ -	$ -	$ 43,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4021 - Books, Subscriptions, & Members	$ -	$ 25	$ 50	$ 25	$ 26	$ 27	$ 27	$ 28	$ 29	$ 30	$ 31	$ 32	$ 33	$ 34	$ 35	$ 36	$ 37	$ 38	$ 39	$ 40	$ 41	$ 43	$ 44	$ 45
4024 - Office Supplies and Expense	$ 5,512	$ 5,323	$ 5,819	$ 5,513	$ 5,678	$ 5,849	$ 6,024	$ 6,205	$ 6,391	$ 6,583	$ 6,780	$ 6,983	$ 7,193	$ 7,409	$ 7,631	$ 7,860	$ 8,096	$ 8,339	$ 8,589	$ 8,846	$ 9,112	$ 9,385	$ 9,667	$ 9,957
4025 - Equipment - Supplies & Maintenance	$ 396	$ 676	$ 5,668	$ 1,953	$ 2,012	$ 2,072	$ 2,135	$ 2,199	$ 2,265	$ 2,333	$ 2,402	$ 2,475	$ 2,549	$ 2,625	$ 2,704	$ 2,785	$ 2,869	$ 2,955	$ 3,043	$ 3,135	$ 3,229	$ 3,326	$ 3,425	$ 3,528
4027 - Utilities	$ 1,131	$ 1,294	$ 1,391	$ 1,128	$ 1,162	$ 1,197	$ 1,233	$ 1,270	$ 1,308	$ 1,347	$ 1,387	$ 1,429	$ 1,472	$ 1,516	$ 1,561	$ 1,608	$ 1,656	$ 1,706	$ 1,757	$ 1,810	$ 1,864	$ 1,920	$ 1,978	$ 2,037
4028 - Telephone	$ -	$ 332	$ 293	$ 509	$ 524	$ 540	$ 556	$ 573	$ 590	$ 608	$ 626	$ 645	$ 664	$ 684	$ 705	$ 726	$ 748	$ 770	$ 793	$ 817	$ 842	$ 867	$ 893	$ 920
4029 - Logan Sewer Treatment	$ 640,664	$ 615,688	$ 643,787	$ 726,413	$ 748,205	$ 770,651	$ 793,771	$ 817,584	$ 842,111	$ 867,375	$ 893,396	$ 920,198	$ 947,804	$ 976,238	$ 1,005,525	$ 1,035,691	$ 1,066,762	$ 1,098,764	$ 1,131,727	$ 1,165,679	$ 1,200,650	$ 1,236,669	$ 1,273,769	$ 1,311,982
4031 - Professional & Technical Services	$ 34,934	$ 55,238	$ 58,935	$ 59,976	$ 61,775	$ 63,628	$ 65,537	$ 67,503	$ 69,528	$ 71,614	$ 73,763	$ 75,976	$ 78,255	$ 80,603	$ 83,021	$ 85,511	$ 88,077	$ 90,719	$ 93,440	$ 96,244	$ 99,131	$ 102,105	$ 105,168	$ 108,323
Logan City Impact Fees	$ -	$ -	$ -	$ -	$ 206,805	$ 194,640	$ 194,640	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 243,300	$ 243,300	$ 243,300	$ 243,300	$ 267,630	$ 267,630	$ 267,630	$ 267,630	$ 291,960	$ 316,290	$ 316,290	$ 316,290
4033 - Education and Training	$ 375	$ 308	$ -	$ -	$ 318	$ 327	$ 337	$ 347	$ 357	$ 368	$ 379	$ 391	$ 402	$ 414	$ 427	$ 440	$ 453	$ 466	$ 480	$ 495	$ 510	$ 525	$ 541	$ 557
4040 - Line - Repair & Replace	$ 2,305	$ 5,707	$ 122	$ 4,193	$ 4,318	$ 4,448	$ 103,000	$ 4,719	$ 4,860	$ 5,006	$ 5,156	$ 5,311	$ 5,470	$ 5,634	$ 5,803	$ 5,978	$ 6,157	$ 6,342	$ 6,532	$ 6,728	$ 6,930	$ 7,137	$ 7,352	$ 7,572
4045 - Lift Station - Repair & Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000	$ 10,300	$ 10,609	$ 10,927	$ 11,255	$ 11,593	$ 11,941	$ 12,299	$ 12,668	$ 13,048	$ 13,439	$ 13,842	$ 14,258	$ 14,685	$ 15,126	$ 15,580
4048 - Repairs & Supplies	$ 2,165	$ 1,022	$ 1,035	$ 2,275	$ 2,343	$ 2,413	$ 2,486	$ 2,560	$ 2,637	$ 2,716	$ 2,798	$ 2,882	$ 2,968	$ 3,057	$ 3,149	$ 3,243	$ 3,341	$ 3,441	$ 3,544	$ 3,650	$ 3,760	$ 3,873	$ 3,989	$ 4,109
4062 - Refunds	$ -	$ 150	$ -	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4065 - Depreciation	$ 170,827	$ 181,434	$ 178,712	$ 186,741	$ 192,343	$ 198,114	$ 204,057	$ 210,179	$ 216,484	$ 222,979	$ 229,668	$ 236,558	$ 243,655	$ 250,965	$ 258,494	$ 266,248	$ 274,236	$ 282,463	$ 290,937	$ 299,665	$ 308,655	$ 317,914	$ 327,452	$ 337,275
4090 - Sewer Construction or Capital Expense	$ -	$ -	$ -	$ 1,208	$ 1,244	$ 1,281	$ 1,319	$ 1,359	$ 1,400	$ 1,442	$ 1,485	$ 1,530	$ 1,576	$ 1,623	$ 1,671	$ 1,722	$ 1,773	$ 1,826	$ 1,881	$ 1,938	$ 1,996	$ 2,056	$ 2,117	$ 2,181
Subtotal Collection Operating Expenses	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,464,873**	**$ 1,425,938**	**$ 1,472,147**	**$ 1,509,743**	**$ 1,548,466**	**$ 1,588,351**	**$ 1,653,762**	**$ 1,696,076**	**$ 1,739,659**	**$ 1,784,550**	**$ 1,855,118**	**$ 1,902,742**	**$ 1,951,796**	**$ 2,002,321**	**$ 2,078,691**	**$ 2,156,623**	**$ 2,211,833**	**$ 2,268,700**
Debt Service																								
Debt Payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534	$ 232,534
Reserve Amount (25% Payment)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133	$ 58,133
Subtotal Debt Service	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**	**$ 290,667**
Out of Pocket Project Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expense	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,464,873**	**$ 1,425,938**	**$ 1,762,815**	**$ 1,800,410**	**$ 1,839,133**	**$ 1,879,018**	**$ 1,944,429**	**$ 1,986,743**	**$ 2,030,327**	**$ 2,075,217**	**$ 2,145,785**	**$ 2,193,410**	**$ 2,242,463**	**$ 2,292,988**	**$ 2,369,359**	**$ 2,447,291**	**$ 2,502,501**	**$ 2,559,367**
Debt Coverage Ratio									**1.01**	**1.00**	**1.00**	**1.00**	**0.99**	**1.00**	**1.00**	**0.99**	**1.00**	**0.98**	**0.98**	**0.97**	**0.99**	**0.97**	**0.96**	**0.95**
PROFIT/LOSS ( )	**$ 107,962**	**$ 31,059**	**$ 248,876**	**$ 24,805**	**$ 54,477**	**$ 293,025**	**$ 198,538**	**$ 300,079**	**$ 1,690**	**$ (48)**	**$ 800**	**$ 1,022**	**$ (1,637)**	**$ 1,266**	**$ 202**	**$ (3,283)**	**$ (754)**	**$ (4,750)**	**$ (4,474)**	**$ (8,090)**	**$ (3,319)**	**$ (9,353)**	**$ (10,711)**	**$ (13,873)**
Reserve Account	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 58,133**	**$ 117,709**	**$ 178,761**	**$ 241,328**	**$ 305,446**	**$ 371,155**	**$ 438,493**	**$ 507,501**	**$ 578,220**	**$ 650,694**	**$ 724,964**	**$ 801,077**	**$ 879,077**	**$ 959,012**	**$ 1,040,929**	**$ 1,124,877**
Total Sewer Fund	**$2,918,611**	**$3,131,103**	**$3,386,128**	**$3,410,933**	**$ 3,465,411**	**$ 3,758,436**	**$ 3,956,973**	**$ 4,257,052**	**$ 4,258,742**	**$ 4,258,694**	**$ 4,259,494**	**$ 4,260,517**	**$ 4,258,879**	**$ 4,260,145**	**$ 4,260,347**	**$ 4,257,064**	**$ 4,256,310**	**$ 4,251,560**	**$ 4,247,086**	**$ 4,238,996**	**$ 4,235,677**	**$ 4,226,324**	**$ 4,215,613**	**$ 4,201,740**
Total Cash on Hand	**$2,918,611**	**$3,131,103**	**$3,386,128**	**$3,410,933**	**$ 3,465,411**	**$ 3,758,436**	**$ 3,956,973**	**$ 4,257,052**	**$ 4,316,876**	**$ 4,376,403**	**$ 4,438,256**	**$ 4,501,844**	**$ 4,564,325**	**$ 4,631,299**	**$ 4,698,840**	**$ 4,764,565**	**$ 4,834,531**	**$ 4,902,254**	**$ 4,972,050**	**$ 5,040,073**	**$ 5,114,754**	**$ 5,185,336**	**$ 5,256,542**	**$ 5,326,617**

PROVIDENCE WASTEWATER CASH FLOW

Hyrum Treatment Option

Water Service Size	Current Sewer User Rates Monthly Rate	Current Sewer User Rates Year Rate	Future Sewer User Rates Monthly Rate	Future Sewer User Rates Year Rate	Year
1" Connection	$ 38.99	$ 467.88	$ 73.27	$ 879.24	2022
1 1/2" Connection	$ 57.55	$ 690.60	$ 108.15	$ 1,297.78	2022
2" Connection	$ 77.55	$ 930.60	$ 145.73	$ 1,748.78	2022
3" Connection	$ 116.97	$ 1,403.64	$ 219.81	$ 2,637.72	2022
4" Connection	$ 155.96	$ 1,871.52	$ 293.08	$ 3,516.96	2022
6" Connection	$ 233.94	$ 2,807.28	$ 439.62	$ 5,275.44	2022

Current Fees	
Impact Fee	Connection Fee
$ 2,433.00	$ 150.00

Interest Rate on Cash on Hand	0.32%
Inflation	3.0%

Wastewater Improvements	
City Amount	$ -
Grant Amount	$ 8,724,000
Loan Amount	$ 21,965,000
Interest Rate	2.50%
Term (Years)	30
Project Cost	$ 30,689,000
Year	2025

Lift Station O&M	$20,000
Operation Start	2025
WWTP Startup	2025

2021 Treatment Costs	
Utilities	$ 226,607
Plant Equipment & Maintenance	$ 287,163
MBR Cleaning Chemicals	$ 106,601
Aluminum Sulfate	$ 20,382
Professional Services	$ 37,139
Insurance	$ 16,800
Travel and Training	$ 2,183
Lab Supplies	$ 2,549
Personnel	$ 90,000

	0	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
Yearly Growth Rate Residential	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Yearly Growth Rate Commercial	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Indexed Inflation Multiplier				1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344	1.384	1.426	1.469	1.513	1.558	1.605	1.653	1.702	1.754	1.806
General Information																								
Flow Information																								
Average Calculated Flow (thousand gal/year)				223350	230867	238026	245185	253238	261292	269346	277400	285453	294402	303351	312299	321248	331091	340935	350778	360622	371360	382993	394627	406260
Connections																								
Residential - 1"				2173	2227	2282	2339	2397	2456	2517	2579	2643	2709	2776	2845	2916	2988	3062	3138	3216	3296	3377	3461	3547
Residential - 1 1/2"				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Residential - 2"				5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8
Residential - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial - 1"				47	48	49	51	52	53	54	56	57	59	60	62	63	65	66	68	70	71	73	75	77
Commercial - 1 1/2"				10	10	11	11	11	11	12	12	12	12	13	13	13	14	14	14	15	15	16	16	16
Commercial - 2"				13	13	14	14	14	15	15	15	16	16	17	17	17	18	18	19	19	20	20	21	21
Commercial - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi-Family - 1"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 1 1/2"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 2"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
Multi-Family - 4"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
City - 1"				21	22	22	23	23	24	24	25	26	26	27	27	28	29	30	30	31	32	33	33	34
City - 2"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
City - No Bill Rate				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Religious - 2"				9	9	9	10	10	10	10	11	11	11	11	12	12	12	13	13	13	14	14	14	15
Educational - 1"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
Educational - 2"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Educational - 4"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Total Number of Connections				**2320**	**2378**	**2436**	**2497**	**2559**	**2622**	**2687**	**2754**	**2822**	**2892**	**2964**	**3038**	**3113**	**3190**	**3269**	**3350**	**3433**	**3518**	**3606**	**3695**	**3787**
ERUs																								
Sewer - Residential ERU				2680	2750	2820	2890	2970	3050	3130	3210	3290	3380	3470	3560	3650	3750	3850	3950	4050	4160	4270	4380	4490
Sewer - Commercial ERU				236	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	430	450	470
Total Number of ERUs				**2916**	**3000**	**3080**	**3160**	**3250**	**3340**	**3430**	**3520**	**3610**	**3710**	**3810**	**3910**	**4010**	**4120**	**4230**	**4340**	**4450**	**4570**	**4700**	**4830**	**4960**
New ERUs																								
New - Residential ERU					70	70	70	80	80	80	80	80	90	90	90	90	100	100	100	100	110	110	110	110
New - Commercial ERU					14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	20	20	20
Total Number of New ERUs					**84**	**80**	**80**	**90**	**90**	**90**	**90**	**90**	**100**	**100**	**100**	**100**	**110**	**110**	**110**	**110**	**120**	**130**	**130**	**130**
Revenue																								
Operating Income																								
1" Connection User Rates				$ 1,053,666	$ 1,079,867	$ 2,078,523	$ 2,132,157	$ 2,184,032	$ 2,238,545	$ 2,293,058	$ 2,350,209	$ 2,409,118	$ 2,468,906	$ 2,529,573	$ 2,592,000	$ 2,656,184	$ 2,723,886	$ 2,790,708	$ 2,859,288	$ 2,930,507	$ 3,003,484	$ 3,077,340	$ 3,152,955	$ 3,232,086
1 1/2" Connection User Rates				$ 13,812	$ 13,812	$ 27,253	$ 28,551	$ 28,551	$ 28,551	$ 29,849	$ 31,147	$ 32,444	$ 32,444	$ 33,742	$ 33,742	$ 33,742	$ 36,338	$ 36,338	$ 36,338	$ 37,635	$ 40,231	$ 41,529	$ 41,529	$ 41,529
2" Connection User Rates				$ 35,363	$ 35,363	$ 68,203	$ 69,951	$ 73,449	$ 76,946	$ 76,946	$ 78,695	$ 80,444	$ 80,444	$ 83,942	$ 87,439	$ 87,439	$ 90,937	$ 92,686	$ 96,183	$ 96,183	$ 103,178	$ 103,178	$ 106,676	$ 110,173
3" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4" Connection User Rates				$ 13,101	$ 13,101	$ 24,619	$ 24,619	$ 28,136	$ 28,136	$ 28,136	$ 28,136	$ 28,136	$ 28,136	$ 28,136	$ 31,653	$ 31,653	$ 31,653	$ 31,653	$ 35,170	$ 35,170	$ 38,687	$ 38,687	$ 42,204	$ 42,204
6" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Connection Fees				$ 10,950	$ 8,400	$ 8,700	$ 9,450	$ 9,300	$ 9,600	$ 9,450	$ 10,200	$ 10,350	$ 10,200	$ 10,950	$ 10,950	$ 10,950	$ 12,150	$ 11,550	$ 12,150	$ 12,300	$ 13,650	$ 12,750	$ 13,350	$ 13,800
Subtotal Operating Income				**$ 1,041,730**	**$ 967,758**	**$ 1,213,854**	**$ 1,126,891**	**$ 1,150,542**	**$ 2,207,298**	**$ 2,264,728**	**$ 2,323,468**	**$ 2,381,778**	**$ 2,437,439**	**$ 2,498,386**	**$ 2,560,492**	**$ 2,620,130**	**$ 2,689,860**	**$ 2,755,783**	**$ 2,819,968**	**$ 2,894,963**	**$ 2,962,934**	**$ 3,039,129**	**$ 3,111,795**	**$ 3,199,230**	**$ 3,273,484**	**$ 3,356,713**	**$ 3,439,792**
Non-Operating Income																								
3810 - INTEREST EARNINGS				$ 5,642.19	$ 9,038.74	$ 14,201.75	$ 10,858.19	$ 10,914.99	$ 11,089.31	$ 14,548.61	$ 17,778.63	$ 21,408.38	$ 22,251.61	$ 23,149.97	$ 24,115.69	$ 25,150.99	$ 26,320.96	$ 27,575.24	$ 28,899.89	$ 30,284.10	$ 31,834.86	$ 33,450.02	$ 35,150.19	$ 36,918.24	$ 38,876.79	$ 40,977.88	$ 43,166.25
Residential Impact Fees				$ -	$ -	$ -	$ -	$ 2,433.00	$ 170,310.00	$ 170,310.00	$ 170,310.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 218,970.00	$ 218,970.00	$ 218,970.00	$ 243,300.00	$ 243,300.00	$ 243,300.00	$ 243,300.00	$ 267,630.00	$ 267,630.00	$ 267,630.00	$ 267,630.00
Commercial Impact Fees				$ -	$ -	$ -	$ -	$ -	$ 34,062.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 48,660.00	$ 48,660.00
Subtotal Non-Operating Income				**$ 5,642**	**$ 9,039**	**$ 14,202**	**$ 13,291**	**$ 215,287**	**$ 205,729**	**$ 209,189**	**$ 236,749**	**$ 240,378**	**$ 241,222**	**$ 242,120**	**$ 243,086**	**$ 268,451**	**$ 269,621**	**$ 270,875**	**$ 272,200**	**$ 297,914**	**$ 299,465**	**$ 301,080**	**$ 302,780**	**$ 328,878**	**$ 355,167**	**$ 357,268**	**$ 359,456**
Total Revenue				**$ 1,047,372**	**$ 976,797**	**$ 1,228,056**	**$ 1,140,182**	**$ 1,365,829**	**$ 2,413,027**	**$ 2,473,917**	**$ 2,560,216**	**$ 2,622,157**	**$ 2,678,661**	**$ 2,740,506**	**$ 2,803,577**	**$ 2,888,581**	**$ 2,959,481**	**$ 3,026,659**	**$ 3,092,168**	**$ 3,192,877**	**$ 3,262,398**	**$ 3,340,209**	**$ 3,414,575**	**$ 3,528,108**	**$ 3,628,650**	**$ 3,713,981**	**$ 3,799,248**
Expenses																								
Collection Operating Expenses																								
4011 - Salaries & Wages-Transfer to Admin				$ 53,577	$ 52,389	$ 52,980	$ 52,192	$ 53,758	$ 55,371	$ 57,032	$ 58,743	$ 60,505	$ 62,320	$ 64,190	$ 66,116	$ 68,099	$ 70,142	$ 72,246	$ 74,414	$ 76,646	$ 78,946	$ 81,314	$ 83,753	$ 86,266	$ 88,854	$ 91,520	$ 94,265
4013 - EMP Benefits-Transfer to Admin				$ 27,525	$ 26,152	$ 30,387	$ 29,942	$ 30,840	$ 31,766	$ 32,719	$ 33,700	$ 34,711	$ 35,752	$ 36,825	$ 37,930	$ 39,068	$ 40,240	$ 41,447	$ 42,690	$ 43,971	$ 45,290	$ 46,649	$ 48,048	$ 49,490	$ 50,974	$ 52,504	$ 54,079
4020 - Bad Debt - Write Off				$ -	$ -	$ -	$ 43,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4021 - Books, Subscriptions, & Members				$ -	$ 25	$ 50	$ 25	$ -	$ 26	$ 27	$ 27	$ 28	$ 29	$ 30	$ 31	$ 32	$ 33	$ 34	$ 35	$ 36	$ 37	$ 38	$ 39	$ 40	$ 41	$ 43	$ 44	$ 45
4024 - Office Supplies and Expense				$ 5,512	$ 5,323	$ 5,819	$ 5,513	$ 5,678	$ 5,849	$ 6,024	$ 6,205	$ 6,391	$ 6,583	$ 6,780	$ 6,983	$ 7,193	$ 7,409	$ 7,631	$ 7,860	$ 8,096	$ 8,339	$ 8,589	$ 8,846	$ 9,112	$ 9,385	$ 9,667	$ 9,957
4025 - Equipment - Supplies & Maintenance				$ 396	$ 676	$ 5,668	$ 1,953	$ 2,012	$ 2,072	$ 2,135	$ 2,199	$ 2,265	$ 2,333	$ 2,402	$ 2,475	$ 2,549	$ 2,625	$ 2,704	$ 2,785	$ 2,869	$ 2,955	$ 3,043	$ 3,135	$ 3,229	$ 3,326	$ 3,425	$ 3,528
4027 - Utilities				$ 1,131	$ 1,294	$ 1,391	$ 1,128	$ 1,162	$ 1,197	$ 1,233	$ 1,270	$ 1,308	$ 1,347	$ 1,387	$ 1,429	$ 1,472	$ 1,516	$ 1,561	$ 1,608	$ 1,656	$ 1,706	$ 1,757	$ 1,810	$ 1,864	$ 1,920	$ 1,978	$ 2,037
4028 - Telephone				$ -	$ 332	$ 293	$ 509	$ 524	$ 540	$ 556	$ 573	$ 590	$ 608	$ 626	$ 645	$ 664	$ 684	$ 705	$ 726	$ 748	$ 770	$ 793	$ 817	$ 842	$ 867	$ 893	$ 920	
4029 - Logan Sewer Treatment				$ 640,664	$ 615,688	$ 643,787	$ 726,413	$ 748,205	$ 770,651	$ 793,771	$ 817,584	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4031 - Professional & Technical Services				$ 34,934	$ 55,238	$ 58,935	$ 59,976	$ 61,775	$ 63,628	$ 65,537	$ 67,503	$ 69,528	$ 71,614	$ 73,763	$ 75,976	$ 78,255	$ 80,603	$ 83,021	$ 85,511	$ 88,077	$ 90,719	$ 93,440	$ 96,244	$ 99,131	$ 102,105	$ 105,168	$ 108,323
Logan City Impact Fees				$ -	$ -	$ -	$ -	$ -	$ 206,805	$ 194,640	$ 194,640	$ 218,970	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4033 - Education and Training				$ 375	$ 308	$ -	$ -	$ 318	$ -	$ -	$ 327	$ -	$ -	$ 337	$ -	$ -	$ -	$ 347	$ -	$ -	$ 357	$ -	$ -	$ 368	$ -	$ -	$ 379	$ -
4040 - Line - Repair & Replace				$ 2,305	$ 5,707	$ 122	$ 4,193	$ 4,318	$ 4,448	$ 103,000	$ 4,719	$ 4,860	$ 5,006	$ 5,156	$ 5,311	$ 5,470	$ 5,634	$ 5,803	$ 5,978	$ 6,157	$ 6,342	$ 6,532	$ 6,728	$ 6,930	$ 7,137	$ 7,352	$ 7,572
4045 - Lift Station - Repair & Maintenance				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 20,000	$ 20,600	$ 21,218	$ 21,855	$ 22,510	$ 23,185	$ 23,881	$ 24,597	$ 25,335	$ 26,095	$ 26,878	$ 27,685	$ 28,515	$ 29,371	$ 30,252	$ 31,159
4048 - Repairs & Supplies				$ 2,165	$ -	$ 1,022	$ 1,035	$ 2,275	$ 2,343	$ 2,413	$ 2,486	$ 2,560	$ 2,637	$ 2,716	$ 2,798	$ 2,882	$ 2,968	$ 3,057	$ 3,149	$ 3,243	$ 3,341	$ 3,441	$ 3,544	$ 3,650	$ 3,760	$ 3,873	$ 3,989	$ 4,109
4062 - Refunds				$ -	$ -	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4065 - Depreciation				$ 170,827	$ 181,434	$ 178,712	$ 186,741	$ 192,343	$ 198,114	$ 204,057	$ 210,179	$ 216,484	$ 222,979	$ 229,668	$ 236,558	$ 243,655	$ 250,965	$ 258,494	$ 266,248	$ 274,236	$ 282,463	$ 290,937	$ 299,665	$ 308,655	$ 317,914	$ 327,452	$ 337,275
4090 - Sewer Construction or Capital Expense				$ -	$ -	$ -	$ 1,208	$ 1,244	$ 1,281	$ 1,319	$ 1,359	$ 1,400	$ 1,442	$ 1,485	$ 1,530	$ 1,576	$ 1,623	$ 1,671	$ 1,722	$ 1,773	$ 1,826	$ 1,881	$ 1,938	$ 1,996	$ 2,056	$ 2,117	$ 2,181
Subtotal Collection Operating Expenses				**$ 939,410**	**$ 945,738**	**$ 979,180**	**$ 1,115,377**	**$ 1,311,352**	**$ 1,331,996**	**$ 1,464,536**	**$ 1,425,918**	**$ 420,709**	**$ 433,330**	**$ 446,667**	**$ 459,720**	**$ 473,511**	**$ 488,064**	**$ 502,348**	**$ 517,418**	**$ 533,298**	**$ 548,929**	**$ 565,397**	**$ 582,727**	**$ 599,830**	**$ 617,825**	**$ 636,739**	**$ 655,450**
Treatment Operating Expenses																								
Utilities				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 255,048	$ 262,699	$ 270,580	$ 278,698	$ 287,059	$ 295,670	$ 304,541	$ 313,677	$ 323,087	$ 332,780	$ 342,763	$ 353,046	$ 363,637	$ 374,546	$ 385,783	$ 397,356
Plant Equipment and Maintenance				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 323,205	$ 332,901	$ 342,888	$ 353,175	$ 363,770	$ 374,683	$ 385,923	$ 397,501	$ 409,426	$ 421,709	$ 434,360	$ 447,391	$ 460,813	$ 474,637	$ 488,876	$ 503,542
Cleaning Chemicals				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 119,980	$ 123,580	$ 127,287	$ 131,106	$ 135,039	$ 139,090	$ 143,263	$ 147,561	$ 151,988	$ 156,547	$ 161,244	$ 166,081	$ 171,063	$ 176,195	$ 181,481	$ 186,925
Aluminum Sulfate				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22,940	$ 23,629	$ 24,337	$ 25,068	$ 25,820	$ 26,594	$ 27,392	$ 28,214	$ 29,060	$ 29,932	$ 30,830	$ 31,755	$ 32,708	$ 33,689	$ 34,699	$ 35,740
Professional Services				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 41,800	$ 43,054	$ 44,345	$ 45,676	$ 47,046	$ 48,457	$ 49,911	$ 51,408	$ 52,951	$ 54,539	$ 56,175	$ 57,861	$ 59,596	$ 61,384	$ 63,226	$ 65,123
Insurance				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 18,909	$ 19,476	$ 20,060	$ 20,662	$ 21,282	$ 21,920	$ 22,578	$ 23,255	$ 23,953	$ 24,671	$ 25,412	$ 26,174	$ 26,959	$ 27,768	$ 28,601	$ 29,459
Travel and Training				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,457	$ 2,531	$ 2,607	$ 2,685	$ 2,765	$ 2,848	$ 2,934	$ 3,022	$ 3,112	$ 3,206	$ 3,302	$ 3,401	$ 3,503	$ 3,608	$ 3,716	$ 3,828
Lab Supplies				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,869	$ 2,955	$ 3,044	$ 3,135	$ 3,229	$ 3,326	$ 3,426	$ 3,529	$ 3,635	$ 3,744	$ 3,856	$ 3,972	$ 4,091	$ 4,214	$ 4,340	$ 4,470
Personnel				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 101,296	$ 104,335	$ 107,465	$ 110,689	$ 114,009	$ 117,430	$ 120,952	$ 124,581	$ 128,318	$ 132,168	$ 136,133	$ 140,217	$ 144,424	$ 148,756	$ 153,219	$ 157,816
Subtotal Treatment Operating Expenses				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 888,504**	**$ 915,159**	**$ 942,614**	**$ 970,892**	**$ 1,000,019**	**$ 1,030,019**	**$ 1,060,920**	**$ 1,092,748**	**$ 1,125,530**	**$ 1,159,296**	**$ 1,194,075**	**$ 1,229,897**	**$ 1,266,794**	**$ 1,304,798**	**$ 1,343,942**	**$ 1,384,260**
Debt Service																								
Debt Payment				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436	$ 1,049,436
Reserve Amount (25% Payment)				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359	$ 262,359
Subtotal Debt Service				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**	**$ 1,311,795**
Out of Pocket Project Expenses				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expense				**$ 939,410**	**$ 945,738**	**$ 979,180**	**$ 1,115,377**	**$ 1,311,352**	**$ 1,331,996**	**$ 1,464,536**	**$ 1,425,918**	**$ 2,621,007**	**$ 2,660,284**	**$ 2,701,075**	**$ 2,742,406**	**$ 2,785,325**	**$ 2,829,878**	**$ 2,875,063**	**$ 2,921,961**	**$ 2,970,623**	**$ 3,020,020**	**$ 3,071,267**	**$ 3,124,419**	**$ 3,178,419**	**$ 3,234,417**	**$ 3,292,475**	**$ 3,351,505**
Debt Coverage Ratio												**1.00**	**1.01**	**1.03**	**1.05**	**1.08**	**1.10**	**1.13**	**1.17**	**1.18**	**1.21**	**1.12**	**1.22**	**1.27**	**1.30**	**1.32**	**1.34**
PROFIT/LOSS ( )				**$ 107,962**	**$ 31,059**	**$ 248,876**	**$ 24,805**	**$ 54,477**	**$ 1,081,031**	**$ 1,009,381**	**$ 1,134,298**	**$ 1,149**	**$ 18,377**	**$ 39,431**	**$ 61,171**	**$ 103,256**	**$ 129,603**	**$ 151,596**	**$ 170,207**	**$ 222,253**	**$ 242,379**	**$ 268,942**	**$ 290,156**	**$ 349,689**	**$ 394,233**	**$ 421,505**	**$ 447,743**
Reserve Account				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 262,359**	**$ 524,718**	**$ 787,077**	**$ 1,049,436**	**$ 1,311,795**	**$ 1,574,154**	**$ 1,836,513**	**$ 2,098,872**	**$ 2,361,231**	**$ 2,623,590**	**$ 2,885,949**	**$ 3,148,308**	**$ 3,410,667**	**$ 3,673,026**	**$ 3,935,385**	**$ 4,197,744**
Total Sewer Fund				**$ 2,918,611**	**$ 3,131,103**	**$ 3,386,128**	**$ 3,410,933**	**$ 3,465,411**	**$ 4,546,441**	**$ 5,555,822**	**$ 6,690,120**	**$ 6,691,270**	**$ 6,709,647**	**$ 6,749,078**	**$ 6,810,248**	**$ 6,913,505**	**$ 7,043,108**	**$ 7,194,704**	**$ 7,364,911**	**$ 7,587,164**	**$ 7,829,543**	**$ 8,098,485**	**$ 8,388,641**	**$ 8,738,330**	**$ 9,132,563**	**$ 9,554,069**	**$ 10,001,812**
Total Cash on Hand				**$ 2,918,611**	**$ 3,131,103**	**$ 3,386,128**	**$ 3,410,933**	**$ 3,465,411**	**$ 4,546,441**	**$ 5,555,822**	**$ 6,690,120**	**$ 6,953,629**	**$ 7,234,365**	**$ 7,536,154**	**$ 7,859,684**	**$ 8,225,299**	**$ 8,617,262**	**$ 9,031,216**	**$ 9,463,782**	**$ 9,948,395**	**$ 10,453,132**	**$ 10,984,433**	**$ 11,536,949**	**$ 12,148,997**	**$ 12,805,589**	**$ 13,489,453**	**$ 14,199,556**

PROVIDENCE WASTEWATER CASH FLOW

Providence Treatment Option

Water Service Size	Current Sewer User Rates Monthly Rate	Current Sewer User Rates Year Rate	Future Sewer User Rates Monthly Rate	Future Sewer User Rates Year Rate	Year
1" Connection	$ 38.99	$ 467.88	$ 73.27	$ 879.24	2022
1 1/2" Connection	$ 57.55	$ 690.60	$ 108.15	$ 1,297.78	2022
2" Connection	$ 77.55	$ 930.60	$ 145.73	$ 1,748.78	2022
3" Connection	$ 116.97	$ 1,403.64	$ 219.81	$ 2,637.72	2022
4" Connection	$ 155.96	$ 1,871.52	$ 293.08	$ 3,516.96	2022
6" Connection	$ 233.94	$ 2,807.28	$ 439.62	$ 5,275.44	2022

Current Fees	
Impact Fee	Connection Fee
$ 2,433.00	$ 150.00

Interest Rate on Cash on Hand	0.32%
Inflation	3.0%

Wastewater Improvements	
City Amount	$ -
Grant Amount	$ 3,730,000
Loan Amount	$ 20,635,000
Interest Rate	2.50%
Term (Years)	30
Project Cost	$ 24,365,000
Year	2025

Lift Station O&M	$10,000
Operation Start	2025
WWTP Startup	2025

2021 Treatment Costs	
Utilities	$ 226,607
Plant Equipment & Maintenance	$ 287,163
MBR Cleaning Chemicals	$ 106,601
Aluminum Sulfate	$ 20,382
Professional Services	$ 37,139
Insurance	$ 16,800
Travel and Training	$ 2,183
Lab Supplies	$ 2,549
Personnel	$ 170,000

	0	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
Yearly Growth Rate Residential	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Yearly Growth Rate Commercial	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Indexed Inflation Multiplier				1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344	1.384	1.426	1.469	1.513	1.558	1.605	1.653	1.702	1.754	1.806
General Information																								
Flow Information																								
Average Calculated Flow (thousand gal/year)				223350	230867	238026	245185	253238	261292	269346	277400	285453	294402	303351	312299	321248	331091	340935	350778	360622	371360	382993	394627	406260
Connections																								
Residential - 1"				2173	2227	2282	2339	2397	2456	2517	2579	2643	2709	2776	2845	2916	2988	3062	3138	3216	3296	3377	3461	3547
Residential - 1 1/2"				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Residential - 2"				5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8
Residential - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial - 1"				47	48	49	51	52	53	54	56	57	59	60	62	63	65	66	68	70	71	73	75	77
Commercial - 1 1/2"				10	10	11	11	11	11	12	12	12	12	13	13	13	14	14	14	15	15	16	16	16
Commercial - 2"				13	13	14	14	14	15	15	15	16	16	17	17	17	18	18	19	19	20	20	21	21
Commercial - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi-Family - 1"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 1 1/2"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 2"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
Multi-Family - 4"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
City - 1"				21	22	22	23	23	24	24	25	26	26	27	27	28	29	30	30	31	32	33	33	34
City - 2"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
City - No Bill Rate				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Religious - 2"				9	9	9	10	10	10	10	11	11	11	11	12	12	12	13	13	13	14	14	14	15
Educational - 1"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
Educational - 2"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Educational - 4"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Total Number of Connections				**2320**	**2378**	**2436**	**2497**	**2559**	**2622**	**2687**	**2754**	**2822**	**2892**	**2964**	**3038**	**3113**	**3190**	**3269**	**3350**	**3433**	**3518**	**3606**	**3695**	**3787**
ERUs																								
Sewer - Residential ERU				2680	2750	2820	2890	2970	3050	3130	3210	3290	3380	3470	3560	3650	3750	3850	3950	4050	4160	4270	4380	4490
Sewer - Commercial ERU				236	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	430	450	470
Total Number of ERUs				**2916**	**3000**	**3080**	**3160**	**3250**	**3340**	**3430**	**3520**	**3610**	**3710**	**3810**	**3910**	**4010**	**4120**	**4230**	**4340**	**4450**	**4570**	**4700**	**4830**	**4960**
New ERUs																								
New - Residential ERU					70	70	70	80	80	80	80	80	90	90	90	90	100	100	100	100	110	110	110	110
New - Commercial ERU					14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	20	20	20
Total Number of New ERUs					**84**	**80**	**80**	**90**	**90**	**90**	**90**	**90**	**100**	**100**	**100**	**100**	**110**	**110**	**110**	**110**	**120**	**130**	**130**	**130**
Revenue																								
Operating Income																								
1" Connection User Rates				$ 1,053,666	$ 1,079,867	$ 2,078,523	$ 2,132,157	$ 2,184,032	$ 2,238,545	$ 2,293,058	$ 2,350,209	$ 2,409,118	$ 2,468,906	$ 2,529,573	$ 2,592,000	$ 2,656,184	$ 2,723,886	$ 2,790,708	$ 2,859,288	$ 2,930,507	$ 3,003,484	$ 3,077,340	$ 3,152,955	$ 3,232,086
1 1/2" Connection User Rates				$ 13,812	$ 13,812	$ 27,253	$ 28,551	$ 28,551	$ 28,551	$ 29,849	$ 31,147	$ 32,444	$ 32,444	$ 33,742	$ 33,742	$ 33,742	$ 36,338	$ 36,338	$ 36,338	$ 37,635	$ 40,231	$ 41,529	$ 41,529	$ 41,529
2" Connection User Rates				$ 35,363	$ 35,363	$ 68,203	$ 69,951	$ 73,449	$ 76,946	$ 76,946	$ 78,695	$ 80,444	$ 80,444	$ 83,942	$ 87,439	$ 87,439	$ 90,937	$ 92,686	$ 96,183	$ 96,183	$ 103,178	$ 103,178	$ 106,676	$ 110,173
3" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4" Connection User Rates				$ 13,101	$ 13,101	$ 24,619	$ 24,619	$ 28,136	$ 28,136	$ 28,136	$ 28,136	$ 28,136	$ 28,136	$ 28,136	$ 31,653	$ 31,653	$ 31,653	$ 31,653	$ 35,170	$ 35,170	$ 38,687	$ 38,687	$ 42,204	$ 42,204
6" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Connection Fees				$ 10,950	$ 8,400	$ 8,700	$ 9,450	$ 9,300	$ 9,600	$ 9,450	$ 10,200	$ 10,350	$ 10,200	$ 10,950	$ 10,950	$ 10,950	$ 12,150	$ 11,550	$ 12,150	$ 12,300	$ 13,650	$ 12,750	$ 13,350	$ 13,800
Subtotal Operating Income				**$ 1,041,730**	**$ 967,758**	**$ 1,213,854**	**$ 1,126,891**	**$ 1,150,542**	**$ 2,207,298**	**$ 2,264,728**	**$ 2,323,468**	**$ 2,381,778**	**$ 2,437,439**	**$ 2,498,386**	**$ 2,560,492**	**$ 2,620,130**	**$ 2,689,860**	**$ 2,755,783**	**$ 2,819,968**	**$ 2,894,963**	**$ 2,962,934**	**$ 3,039,129**	**$ 3,111,795**	**$ 3,199,230**	**$ 3,273,484**	**$ 3,356,713**	**$ 3,439,792**
Non-Operating Income																								
3810 - INTEREST EARNINGS				$ 5,642.19	$ 9,038.74	$ 14,201.75	$ 10,858.19	$ 10,914.99	$ 11,089.31	$ 14,548.61	$ 17,778.63	$ 21,408.38	$ 22,198.82	$ 23,036.54	$ 23,933.51	$ 24,891.69	$ 25,975.89	$ 27,135.48	$ 28,356.24	$ 29,627.04	$ 31,054.59	$ 32,536.40	$ 34,092.76	$ 35,706.22	$ 37,499.06	$ 39,422.95	$ 41,422.27
Residential Impact Fees				$ -	$ -	$ -	$ -	$ 2,433.00	$ 170,310.00	$ 170,310.00	$ 170,310.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 218,970.00	$ 218,970.00	$ 218,970.00	$ 218,970.00	$ 243,300.00	$ 243,300.00	$ 243,300.00	$ 243,300.00	$ 267,630.00	$ 267,630.00	$ 267,630.00	$ 267,630.00
Commercial Impact Fees				$ -	$ -	$ -	$ -	$ -	$ 34,062.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 48,660.00	$ 48,660.00	$ 48,660.00
Subtotal Non-Operating Income				**$ 5,642**	**$ 9,039**	**$ 14,202**	**$ 13,291**	**$ 215,287**	**$ 205,729**	**$ 209,189**	**$ 236,749**	**$ 240,378**	**$ 241,169**	**$ 242,007**	**$ 242,904**	**$ 268,192**	**$ 269,276**	**$ 270,435**	**$ 271,656**	**$ 297,257**	**$ 298,685**	**$ 300,166**	**$ 301,723**	**$ 327,666**	**$ 353,789**	**$ 355,713**	**$ 357,712**
Total Revenue				**$ 1,047,372**	**$ 976,797**	**$ 1,228,056**	**$ 1,140,182**	**$ 1,365,829**	**$ 2,413,027**	**$ 2,473,917**	**$ 2,560,216**	**$ 2,622,157**	**$ 2,678,608**	**$ 2,740,393**	**$ 2,803,395**	**$ 2,888,322**	**$ 2,959,136**	**$ 3,026,219**	**$ 3,091,624**	**$ 3,192,220**	**$ 3,261,618**	**$ 3,339,295**	**$ 3,413,518**	**$ 3,526,896**	**$ 3,627,273**	**$ 3,712,426**	**$ 3,797,504**
Expenses																								
Collection Operating Expenses																								
4011 - Salaries & Wages-Transfer to Admin				$ 53,577	$ 52,389	$ 52,980	$ 52,192	$ 53,758	$ 55,371	$ 57,032	$ 58,743	$ 60,505	$ 62,320	$ 64,190	$ 66,116	$ 68,099	$ 70,142	$ 72,246	$ 74,414	$ 76,646	$ 78,946	$ 81,314	$ 83,753	$ 86,266	$ 88,854	$ 91,520	$ 94,265
4013 - EMP Benefits-Transfer to Admin				$ 27,525	$ 26,152	$ 30,387	$ 29,942	$ 30,840	$ 31,766	$ 32,719	$ 33,700	$ 34,711	$ 35,752	$ 36,825	$ 37,930	$ 39,068	$ 40,240	$ 41,447	$ 42,690	$ 43,971	$ 45,290	$ 46,649	$ 48,048	$ 49,490	$ 50,974	$ 52,504	$ 54,079
4020 - Bad Debt - Write Off				$ -	$ -	$ -	$ 43,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4021 - Books, Subscriptions, & Members				$ -	$ 25	$ 50	$ 25	$ -	$ 26	$ 27	$ 27	$ 28	$ 29	$ 30	$ 31	$ 32	$ 33	$ 34	$ 35	$ 36	$ 37	$ 38	$ 39	$ 40	$ 41	$ 43	$ 44	$ 45
4024 - Office Supplies and Expense				$ 5,512	$ 5,323	$ 5,819	$ 5,513	$ 5,678	$ 5,849	$ 6,024	$ 6,205	$ 6,391	$ 6,583	$ 6,780	$ 6,983	$ 7,193	$ 7,409	$ 7,631	$ 7,860	$ 8,096	$ 8,339	$ 8,589	$ 8,846	$ 9,112	$ 9,385	$ 9,667	$ 9,957
4025 - Equipment - Supplies & Maintenance				$ 396	$ 676	$ 5,668	$ 1,953	$ 2,012	$ 2,072	$ 2,135	$ 2,199	$ 2,265	$ 2,333	$ 2,402	$ 2,475	$ 2,549	$ 2,625	$ 2,704	$ 2,785	$ 2,869	$ 2,955	$ 3,043	$ 3,135	$ 3,229	$ 3,326	$ 3,425	$ 3,528
4027 - Utilities				$ 1,131	$ 1,294	$ 1,391	$ 1,128	$ 1,162	$ 1,197	$ 1,233	$ 1,270	$ 1,308	$ 1,347	$ 1,387	$ 1,429	$ 1,472	$ 1,516	$ 1,561	$ 1,608	$ 1,656	$ 1,706	$ 1,757	$ 1,810	$ 1,864	$ 1,920	$ 1,978	$ 2,037
4028 - Telephone				$ -	$ 332	$ 293	$ 509	$ 524	$ 540	$ 556	$ 573	$ 590	$ 608	$ 626	$ 645	$ 664	$ 684	$ 705	$ 726	$ 748	$ 770	$ 793	$ 817	$ 842	$ 867	$ 893	$ 920	
4029 - Logan Sewer Treatment				$ 640,664	$ 615,688	$ 643,787	$ 726,413	$ 748,205	$ 770,651	$ 793,771	$ 817,584	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4031 - Professional & Technical Services				$ 34,934	$ 55,238	$ 58,935	$ 59,976	$ 61,775	$ 63,628	$ 65,537	$ 67,503	$ 69,528	$ 71,614	$ 73,763	$ 75,976	$ 78,255	$ 80,603	$ 83,021	$ 85,511	$ 88,077	$ 90,719	$ 93,440	$ 96,244	$ 99,131	$ 102,105	$ 105,168	$ 108,323
Logan City Impact Fees				$ -	$ -	$ -	$ -	$ -	$ 206,805	$ 194,640	$ 194,640	$ 218,970	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4033 - Education and Training				$ 375	$ 308	$ -	$ -	$ 318	$ -	$ -	$ 327	$ -	$ -	$ 337	$ -	$ -	$ -	$ 347	$ -	$ -	$ 357	$ -	$ -	$ 368	$ -	$ -	$ 379	$ -
4040 - Line - Repair & Replace				$ 2,305	$ 5,707	$ 122	$ 4,193	$ 4,318	$ 4,448	$ 103,000	$ 4,719	$ 4,860	$ 5,006	$ 5,156	$ 5,311	$ 5,470	$ 5,634	$ 5,803	$ 5,978	$ 6,157	$ 6,342	$ 6,532	$ 6,728	$ 6,930	$ 7,137	$ 7,352	$ 7,572
4045 - Lift Station - Repair & Maintenance				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000	$ 10,300	$ 10,609	$ 10,927	$ 11,255	$ 11,593	$ 11,941	$ 12,299	$ 12,668	$ 13,048	$ 13,439	$ 13,842	$ 14,258	$ 14,685	$ 15,126	$ 15,580
4048 - Repairs & Supplies				$ 2,165	$ -	$ 1,022	$ 1,035	$ 2,275	$ 2,343	$ 2,413	$ 2,486	$ 2,560	$ 2,637	$ 2,716	$ 2,798	$ 2,882	$ 2,968	$ 3,057	$ 3,149	$ 3,243	$ 3,341	$ 3,441	$ 3,544	$ 3,650	$ 3,760	$ 3,873	$ 3,989	$ 4,109
4062 - Refunds				$ -	$ -	$ 150	$ -	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4065 - Depreciation				$ 170,827	$ 181,434	$ 178,712	$ 186,741	$ 192,343	$ 198,114	$ 204,057	$ 210,179	$ 216,484	$ 222,979	$ 229,668	$ 236,558	$ 243,655	$ 250,965	$ 258,494	$ 266,248	$ 274,236	$ 282,463	$ 290,937	$ 299,665	$ 308,655	$ 317,914	$ 327,452	$ 337,275
4090 - Sewer Construction or Capital Expense				$ -	$ -	$ -	$ 1,208	$ 1,244	$ 1,281	$ 1,319	$ 1,359	$ 1,400	$ 1,442	$ 1,485	$ 1,530	$ 1,576	$ 1,623	$ 1,671	$ 1,722	$ 1,773	$ 1,826	$ 1,881	$ 1,938	$ 1,996	$ 2,056	$ 2,117	$ 2,181
Subtotal Collection Operating Expenses				**$ 939,410**	**$ 945,738**	**$ 979,180**	**$ 1,115,377**	**$ 1,311,352**	**$ 1,331,996**	**$ 1,464,536**	**$ 1,425,918**	**$ 410,709**	**$ 423,030**	**$ 436,058**	**$ 448,792**	**$ 462,256**	**$ 476,471**	**$ 490,407**	**$ 505,120**	**$ 520,631**	**$ 535,882**	**$ 551,958**	**$ 568,885**	**$ 585,572**	**$ 603,139**	**$ 621,613**	**$ 639,871**
Treatment Operating Expenses																								
Utilities				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 255,048	$ 262,699	$ 270,580	$ 278,698	$ 287,059	$ 295,670	$ 304,541	$ 313,677	$ 323,087	$ 332,780	$ 342,763	$ 353,046	$ 363,637	$ 374,546	$ 385,783	$ 397,356
Plant Equipment and Maintenance				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 323,205	$ 332,901	$ 342,888	$ 353,175	$ 363,770	$ 374,683	$ 385,923	$ 397,501	$ 409,426	$ 421,709	$ 434,360	$ 447,391	$ 460,813	$ 474,637	$ 488,876	$ 503,542
Cleaning Chemicals				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 119,980	$ 123,580	$ 127,287	$ 131,106	$ 135,039	$ 139,090	$ 143,263	$ 147,561	$ 151,988	$ 156,547	$ 161,244	$ 166,081	$ 171,063	$ 176,195	$ 181,481	$ 186,925
Aluminum Sulfate				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22,940	$ 23,629	$ 24,337	$ 25,068	$ 25,820	$ 26,594	$ 27,392	$ 28,214	$ 29,060	$ 29,932	$ 30,830	$ 31,755	$ 32,708	$ 33,689	$ 34,699	$ 35,740
Professional Services				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 41,800	$ 43,054	$ 44,345	$ 45,676	$ 47,046	$ 48,457	$ 49,911	$ 51,408	$ 52,951	$ 54,539	$ 56,175	$ 57,861	$ 59,596	$ 61,384	$ 63,226	$ 65,123
Insurance				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 18,909	$ 19,476	$ 20,060	$ 20,662	$ 21,282	$ 21,920	$ 22,578	$ 23,255	$ 23,953	$ 24,671	$ 25,412	$ 26,174	$ 26,959	$ 27,768	$ 28,601	$ 29,459
Travel and Training				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,457	$ 2,531	$ 2,607	$ 2,685	$ 2,765	$ 2,848	$ 2,934	$ 3,022	$ 3,112	$ 3,206	$ 3,302	$ 3,401	$ 3,503	$ 3,608	$ 3,716	$ 3,828
Lab Supplies				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,869	$ 2,955	$ 3,044	$ 3,135	$ 3,229	$ 3,326	$ 3,426	$ 3,529	$ 3,635	$ 3,744	$ 3,856	$ 3,972	$ 4,091	$ 4,214	$ 4,340	$ 4,470
Personnel				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 191,336	$ 197,077	$ 202,989	$ 209,079	$ 215,351	$ 221,811	$ 228,466	$ 235,320	$ 242,379	$ 249,651	$ 257,140	$ 264,854	$ 272,800	$ 280,984	$ 289,414	$ 298,096
Subtotal Treatment Operating Expenses				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 978,544**	**$ 1,007,901**	**$ 1,038,138**	**$ 1,069,282**	**$ 1,101,360**	**$ 1,134,401**	**$ 1,168,433**	**$ 1,203,486**	**$ 1,239,591**	**$ 1,276,779**	**$ 1,315,082**	**$ 1,354,534**	**$ 1,395,170**	**$ 1,437,026**	**$ 1,480,136**	**$ 1,524,540**
Debt Service																								
Debt Payment				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892	$ 985,892
Reserve Amount (25% Payment)				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473	$ 246,473
Subtotal Debt Service				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**	**$ 1,232,365**
Out of Pocket Project Expenses				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expense				**$ 939,410**	**$ 945,738**	**$ 979,180**	**$ 1,115,377**	**$ 1,311,352**	**$ 1,331,996**	**$ 1,464,536**	**$ 1,425,918**	**$ 2,621,618**	**$ 2,663,295**	**$ 2,706,560**	**$ 2,750,439**	**$ 2,795,981**	**$ 2,843,237**	**$ 2,891,205**	**$ 2,940,971**	**$ 2,992,586**	**$ 3,045,025**	**$ 3,099,404**	**$ 3,155,784**	**$ 3,213,107**	**$ 3,272,529**	**$ 3,334,114**	**$ 3,396,775**
Debt Coverage Ratio												**1.00**	**1.01**	**1.03**	**1.04**	**1.07**	**1.09**	**1.11**	**1.12**	**1.16**	**1.18**	**1.19**	**1.21**	**1.25**	**1.29**	**1.31**	**1.33**
PROFIT/LOSS ( )				**$ 107,962**	**$ 31,059**	**$ 248,876**	**$ 24,805**	**$ 54,477**	**$ 1,081,031**	**$ 1,009,381**	**$ 1,134,298**	**$ 539**	**$ 15,313**	**$ 33,833**	**$ 52,956**	**$ 92,341**	**$ 115,899**	**$ 135,014**	**$ 150,654**	**$ 199,634**	**$ 216,594**	**$ 239,891**	**$ 257,734**	**$ 313,789**	**$ 354,743**	**$ 378,312**	**$ 400,729**
Reserve Account				**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 246,473**	**$ 492,946**	**$ 739,419**	**$ 985,892**	**$ 1,232,365**	**$ 1,478,837**	**$ 1,725,310**	**$ 1,971,783**	**$ 2,218,256**	**$ 2,464,729**	**$ 2,711,202**	**$ 2,957,675**	**$ 3,204,148**	**$ 3,450,621**	**$ 3,697,094**	**$ 3,943,566**
Total Sewer Fund				**$ 2,918,611**	**$ 3,131,103**	**$ 3,386,128**	**$ 3,410,933**	**$ 3,465,411**	**$ 4,546,441**	**$ 5,555,822**	**$ 6,690,120**	**$ 6,690,659**	**$ 6,705,972**	**$ 6,739,805**	**$ 6,792,761**	**$ 6,885,102**	**$ 7,001,001**	**$ 7,136,014**	**$ 7,286,668**	**$ 7,486,302**	**$ 7,702,895**	**$ 7,942,786**	**$ 8,200,520**	**$ 8,514,309**	**$ 8,869,052**	**$ 9,247,364**	**$ 9,648,093**
Total Cash on Hand				**$ 2,918,611**	**$ 3,131,103**	**$ 3,386,128**	**$ 3,410,933**	**$ 3,465,411**	**$ 4,546,441**	**$ 5,555,822**	**$ 6,690,120**	**$ 6,937,132**	**$ 7,198,918**	**$ 7,479,223**	**$ 7,778,653**	**$ 8,117,466**	**$ 8,479,838**	**$ 8,861,325**	**$ 9,258,451**	**$ 9,704,558**	**$ 10,167,624**	**$ 10,653,988**	**$ 11,158,195**	**$ 11,718,457**	**$ 12,319,673**	**$ 12,944,458**	**$ 13,591,660**

Appendix E – Impact Fee and User Rate Analysis

Appendix E
Logan Treatment B - Impact Fee and User Rate Analysis

	User Rate			Loan Terms									Impact Fee				
User Rate Structure	Current User Rate	New User Rate	User Rate Increase	Loan Year	Project Cost	Loan Amount	Grant	Down Payment	Interest Rate	Loan Term	Annual Payment	Total Payment	Current Logan Impact	2021-2040 New ERUs	Impact Increase for Providence	Future Total Impact	Year Increased
Water Service Diameter	$ 38.99	$ 41.46	$ 2.47	2025	$ 4,867,000	$ 4,541,028	$ -	$ 325,972	2.50%	20	$ 291,294	$ 5,825,879	$ 2,433	2044	$ 2,850	$ 5,283	2022
ERU	$ 38.99	$ 33.32	$ (5.67)	2025	$ 4,867,000	$ 4,541,028	$ -	$ 325,972	2.50%	20	$ 291,294	$ 5,825,879	$ 2,433	2044	$ 2,850	$ 5,283	2022
Water Service Capacity	$ 38.99	$ 38.66	$ (0.33)	2025	$ 4,867,000	$ 4,541,028	$ -	$ 325,972	2.50%	20	$ 291,294	$ 5,825,879	$ 2,433	2044	$ 2,850	$ 5,283	2022

Capital Improvement	Project Amount	Impact Fee Eligible	Remainder
21" Outfall Line to Lift Station - Providence Portion	$ 3,948,000	$ 3,622,028	$ 325,972
West Side Gravity Collection System	$ 395,000	$ 395,000	$ -
West Side Force Main to Existing System	$ 344,000	$ 344,000	$ -
West Side Lift Station (0.3 MGD)	$ 180,000	$ 180,000	$ -
Total	$ 4,867,000	$ 4,541,028	$ 325,972

PROVIDENCE WASTEWATER CASH FLOW

Logan Treatment Option - Shared Outfall Line - Water Service Diameter User Rate Structure

	Current Sewer User Rates		Future Sewer User Rates		
Water Service Size	Monthly Rate	Year Rate	Monthly Rate	Year Rate	Year
1" Connection	$ 38.99	$ 467.88	$ 41.46	$ 497.52	2022
1 1/2" Connection	$ 57.55	$ 690.60	$ 61.20	$ 734.35	2022
2" Connection	$ 77.55	$ 930.60	$ 82.46	$ 989.55	2022
3" Connection	$ 116.97	$ 1,403.64	$ 124.38	$ 1,492.56	2022
4" Connection	$ 155.96	$ 1,871.52	$ 165.84	$ 1,990.08	2022
6" Connection	$ 233.94	$ 2,807.28	$ 248.76	$ 2,985.12	2022

Current Fees		Collection Impact Fee		
Impact Fee	Connection Fee	Impact Fee	Connection Fee	Year
$ 2,433.00	$ 150.00	$ 2,850.23	$ 150.00	2022

Interest Rate on Cash on Hand	0.32%
Inflation	3.0%

Wastewater Improvements	
City Amount	$ 325,972
Grant Amount	$ -
Loan Amount	$ 4,541,028
Interest Rate	2.50%
Term (Years)	20
Project Cost	$ 4,867,000
Year Start	2025

Lift Station O&M	$10,000
Operation Start	2025

	0	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
Yearly Growth Rate Residential	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Yearly Growth Rate Commercial	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Indexed Inflation Multiplier				1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344	1.384	1.426	1.469	1.513	1.558	1.605	1.653	1.702	1.754	1.806
General Information																								
Flow Information																								
Average Calculated Flow (thousand gal/year)				223350	230867	238026	245185	253238	261292	269346	277400	285453	294402	303351	312299	321248	331091	340935	350778	360622	371360	382993	394627	406260
Connections																								
Residential - 1"				2173	2227	2282	2339	2397	2456	2517	2579	2643	2709	2776	2845	2916	2988	3062	3138	3216	3296	3377	3461	3547
Residential - 1 1/2"				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Residential - 2"				5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8
Residential - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial - 1"				47	48	49	51	52	53	54	56	57	59	60	62	63	65	66	68	70	71	73	75	77
Commercial - 1 1/2"				10	10	11	11	11	11	12	12	12	12	13	13	13	14	14	14	15	15	16	16	16
Commercial - 2"				13	13	14	14	14	15	15	15	16	16	17	17	17	18	18	19	19	20	20	21	21
Commercial - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi-Family - 1"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 1 1/2"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 2"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
Multi-Family - 4"				6	6	6	6	7	7	7	7	7	8	8	8	8	8	8	9	9	9	9	10	10
City - 1"				21	22	22	23	23	24	24	25	26	26	27	27	28	29	30	30	31	32	33	33	34
City - 2"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
City - No Bill Rate				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Religious - 2"				9	9	9	10	10	10	10	11	11	11	11	12	12	12	13	13	13	14	14	14	15
Educational - 1"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
Educational - 2"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Educational - 4"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Total Number of Connections				**2320**	**2378**	**2436**	**2497**	**2559**	**2622**	**2687**	**2754**	**2822**	**2892**	**2964**	**3038**	**3113**	**3190**	**3269**	**3350**	**3433**	**3518**	**3606**	**3695**	**3787**
ERUs																								
Sewer - Residential ERU				2680	2750	2820	2890	2970	3050	3130	3210	3290	3380	3470	3560	3650	3750	3850	3950	4050	4160	4270	4380	4490
Sewer - Commercial ERU				236	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	430	450	470
Total Number of ERUs				**2916**	**3000**	**3080**	**3160**	**3250**	**3340**	**3430**	**3520**	**3610**	**3710**	**3810**	**3910**	**4010**	**4120**	**4230**	**4340**	**4450**	**4570**	**4700**	**4830**	**4960**
New ERUs																								
New - Residential ERU					70	70	70	80	80	80	80	80	90	90	90	90	100	100	100	100	110	110	110	110
New - Commercial ERU					14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	20	20	20
Total Number of New ERUs					**84**	**80**	**80**	**90**	**90**	**90**	**90**	**90**	**100**	**100**	**100**	**100**	**110**	**110**	**110**	**110**	**120**	**130**	**130**	**130**
Revenue																								
Operating Income																								
1" Connection User Rates				$ 1,053,666	$ 1,079,867	$ 1,176,137	$ 1,206,486	$ 1,235,840	$ 1,266,686	$ 1,297,532	$ 1,329,871	$ 1,363,205	$ 1,397,036	$ 1,431,365	$ 1,466,689	$ 1,503,008	$ 1,541,317	$ 1,579,128	$ 1,617,935	$ 1,658,234	$ 1,699,528	$ 1,741,320	$ 1,784,107	$ 1,828,884
1 1/2" Connection User Rates				$ 13,812	$ 13,812	$ 15,421	$ 16,156	$ 16,156	$ 16,156	$ 16,890	$ 17,624	$ 18,359	$ 18,359	$ 19,093	$ 19,093	$ 19,093	$ 20,562	$ 20,562	$ 20,562	$ 21,296	$ 22,765	$ 23,499	$ 23,499	$ 23,499
2" Connection User Rates				$ 35,363	$ 35,363	$ 38,593	$ 39,582	$ 41,561	$ 43,540	$ 43,540	$ 44,530	$ 45,519	$ 45,519	$ 47,499	$ 49,478	$ 49,478	$ 51,457	$ 52,446	$ 54,425	$ 54,425	$ 58,384	$ 58,384	$ 60,363	$ 62,342
3" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4" Connection User Rates				$ 13,101	$ 13,101	$ 13,931	$ 13,931	$ 15,921	$ 15,921	$ 15,921	$ 15,921	$ 15,921	$ 15,921	$ 17,911	$ 17,911	$ 17,911	$ 17,911	$ 17,911	$ 19,901	$ 19,901	$ 21,891	$ 21,891	$ 23,881	$ 23,881
6" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Connection Fees				$ 10,950	$ 8,400	$ 8,700	$ 9,450	$ 9,300	$ 9,600	$ 9,450	$ 10,200	$ 10,350	$ 10,200	$ 10,950	$ 10,950	$ 10,950	$ 12,150	$ 11,550	$ 12,150	$ 12,300	$ 13,650	$ 12,750	$ 13,350	$ 13,800
Subtotal Operating Income				**$ 1,041,730**	**$ 967,758**	**$ 1,213,854**	**$ 1,126,891**	**$ 1,150,542**	**$ 1,252,782**	**$ 1,285,604**	**$ 1,318,777**	**$ 1,351,903**	**$ 1,383,333**	**$ 1,418,146**	**$ 1,453,354**	**$ 1,487,035**	**$ 1,526,817**	**$ 1,564,120**	**$ 1,600,439**	**$ 1,643,396**	**$ 1,681,597**	**$ 1,724,973**	**$ 1,766,157**	**$ 1,816,218**	**$ 1,857,844**	**$ 1,905,200**	**$ 1,952,406**
Non-Operating Income																								
3810 - INTEREST EARNINGS	$ 5,642.19	$ 9,038.74	$ 14,201.75	$ 10,858.19	$ 10,914.99	$ 11,089.31	$ 12,222.77	$ 13,040.74	$ 14,261.12	$ 13,468.30	$ 13,702.09	$ 13,930.05	$ 14,149.84	$ 14,444.07	$ 14,737.53	$ 15,018.35	$ 15,279.35	$ 15,628.74	$ 15,956.13	$ 16,273.60	$ 16,569.58	$ 16,958.95	$ 17,410.20	$ 17,845.71
Residential Impact Fees	$ -	$ -	$ -	$ 2,433.00	$ 170,310.00	$ 170,310.00	$ 170,310.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 218,970.00	$ 218,970.00	$ 218,970.00	$ 218,970.00	$ 243,300.00	$ 243,300.00	$ 243,300.00	$ 243,300.00	$ 267,630.00	$ 267,630.00	$ 267,630.00	$ 267,630.00
Commercial Impact Fees	$ -	$ -	$ -	$ -	$ 34,062.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 48,660.00	$ 48,660.00	$ 48,660.00
Collection Impact Fee	$ -	$ -	$ -	$ -	$ -	$ 228,018.74	$ 228,018.74	$ 256,521.08	$ 256,521.08	$ 256,521.08	$ 256,521.08	$ 256,521.08	$ 285,023.42	$ 285,023.42	$ 285,023.42	$ 285,023.42	$ 313,525.76	$ 313,525.76	$ 313,525.76	$ 313,525.76	$ 342,028.11	$ 370,530.45	$ 370,530.45	$ 370,530.45
Subtotal Non-Operating Income	**$ 5,642**	**$ 9,039**	**$ 14,202**	**$ 13,291**	**$ 215,287**	**$ 433,748**	**$ 434,882**	**$ 488,532**	**$ 489,752**	**$ 488,959**	**$ 489,193**	**$ 489,421**	**$ 542,473**	**$ 542,767**	**$ 543,061**	**$ 543,342**	**$ 596,435**	**$ 596,785**	**$ 597,112**	**$ 597,429**	**$ 650,558**	**$ 703,779**	**$ 704,231**	**$ 704,666**
Total Revenue	**$ 1,047,372**	**$ 976,797**	**$ 1,228,056**	**$ 1,140,182**	**$ 1,365,829**	**$ 1,686,530**	**$ 1,720,486**	**$ 1,807,309**	**$ 1,841,655**	**$ 1,872,293**	**$ 1,907,339**	**$ 1,942,775**	**$ 2,029,508**	**$ 2,069,585**	**$ 2,107,181**	**$ 2,143,781**	**$ 2,239,831**	**$ 2,278,382**	**$ 2,322,085**	**$ 2,363,586**	**$ 2,466,775**	**$ 2,561,623**	**$ 2,609,430**	**$ 2,657,072**
Expenses																								
Collection Operating Expenses																								
4011 - Salaries & Wages-Transfer to Admin	$ 53,577	$ 52,389	$ 52,980	$ 52,192	$ 53,758	$ 55,371	$ 57,032	$ 58,743	$ 60,505	$ 62,320	$ 64,190	$ 66,116	$ 68,099	$ 70,142	$ 72,246	$ 74,414	$ 76,646	$ 78,946	$ 81,314	$ 83,753	$ 86,266	$ 88,854	$ 91,520	$ 94,265
4013 - EMP Benefits-Transfer to Admin	$ 27,525	$ 26,152	$ 30,387	$ 29,942	$ 30,840	$ 31,766	$ 32,719	$ 33,700	$ 34,711	$ 35,752	$ 36,825	$ 37,930	$ 39,068	$ 40,240	$ 41,447	$ 42,690	$ 43,971	$ 45,290	$ 46,649	$ 48,048	$ 49,490	$ 50,974	$ 52,504	$ 54,079
4020 - Bad Debt - Write Off	$ -	$ -	$ -	$ 43,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4021 - Books, Subscriptions, & Members	$ -	$ 25	$ 50	$ 25	$ 26	$ 27	$ 27	$ 28	$ 29	$ 30	$ 31	$ 32	$ 33	$ 34	$ 35	$ 36	$ 37	$ 38	$ 39	$ 40	$ 41	$ 43	$ 44	$ 45
4024 - Office Supplies and Expense	$ 5,512	$ 5,323	$ 5,819	$ 5,513	$ 5,678	$ 5,849	$ 6,024	$ 6,205	$ 6,391	$ 6,583	$ 6,780	$ 6,983	$ 7,193	$ 7,409	$ 7,631	$ 7,860	$ 8,096	$ 8,339	$ 8,589	$ 8,846	$ 9,112	$ 9,385	$ 9,667	$ 9,957
4025 - Equipment - Supplies & Maintenance	$ 396	$ 676	$ 5,668	$ 1,953	$ 2,012	$ 2,072	$ 2,135	$ 2,199	$ 2,265	$ 2,333	$ 2,402	$ 2,475	$ 2,549	$ 2,625	$ 2,704	$ 2,785	$ 2,869	$ 2,955	$ 3,043	$ 3,135	$ 3,229	$ 3,326	$ 3,425	$ 3,528
4027 - Utilities	$ 1,131	$ 1,294	$ 1,391	$ 1,128	$ 1,162	$ 1,197	$ 1,233	$ 1,270	$ 1,308	$ 1,347	$ 1,387	$ 1,429	$ 1,472	$ 1,516	$ 1,561	$ 1,608	$ 1,656	$ 1,706	$ 1,757	$ 1,810	$ 1,864	$ 1,920	$ 1,978	$ 2,037
4028 - Telephone	$ -	$ 332	$ 293	$ 509	$ 524	$ 540	$ 556	$ 573	$ 590	$ 608	$ 626	$ 645	$ 664	$ 684	$ 705	$ 726	$ 748	$ 770	$ 793	$ 817	$ 842	$ 867	$ 893	$ 920
4029 - Logan Sewer Treatment	$ 640,664	$ 615,688	$ 643,787	$ 726,413	$ 748,205	$ 770,651	$ 793,771	$ 817,584	$ 842,111	$ 867,375	$ 893,396	$ 920,198	$ 947,804	$ 976,238	$ 1,005,525	$ 1,035,691	$ 1,066,762	$ 1,098,764	$ 1,131,727	$ 1,165,679	$ 1,200,650	$ 1,236,669	$ 1,273,769	$ 1,311,982
4031 - Professional & Technical Services	$ 34,934	$ 55,238	$ 58,935	$ 59,976	$ 61,775	$ 63,628	$ 65,537	$ 67,503	$ 69,528	$ 71,614	$ 73,763	$ 75,976	$ 78,255	$ 80,603	$ 83,021	$ 85,511	$ 88,077	$ 90,719	$ 93,440	$ 96,244	$ 99,131	$ 102,105	$ 105,168	$ 108,323
Logan City Impact Fees	$ -	$ -	$ -	$ -	$ 206,805	$ 194,640	$ 194,640	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 243,300	$ 243,300	$ 243,300	$ 243,300	$ 267,630	$ 267,630	$ 267,630	$ 267,630	$ 291,960	$ 316,290	$ 316,290	$ 316,290
4033 - Education and Training	$ 375	$ 308	$ -	$ -	$ 318	$ 327	$ 337	$ 347	$ 357	$ 368	$ 379	$ 391	$ 402	$ 414	$ 427	$ 440	$ 453	$ 466	$ 480	$ 495	$ 510	$ 525	$ 541	$ 557
4040 - Line - Repair & Replace	$ 2,305	$ 5,707	$ 122	$ 4,193	$ 4,318	$ 4,448	$ 103,000	$ 4,719	$ 4,860	$ 5,006	$ 5,156	$ 5,311	$ 5,470	$ 5,634	$ 5,803	$ 5,978	$ 6,157	$ 6,342	$ 6,532	$ 6,728	$ 6,930	$ 7,137	$ 7,352	$ 7,572
4045 - Lift Station - Repair & Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000	$ 10,300	$ 10,609	$ 10,927	$ 11,255	$ 11,593	$ 11,941	$ 12,299	$ 12,668	$ 13,048	$ 13,439	$ 13,842	$ 14,258	$ 14,685	$ 15,126	$ 15,580
4048 - Repairs & Supplies	$ 2,165	$ 1,022	$ 1,035	$ 2,275	$ 2,343	$ 2,413	$ 2,486	$ 2,560	$ 2,637	$ 2,716	$ 2,798	$ 2,882	$ 2,968	$ 3,057	$ 3,149	$ 3,243	$ 3,341	$ 3,441	$ 3,544	$ 3,650	$ 3,760	$ 3,873	$ 3,989	$ 4,109
4062 - Refunds	$ -	$ 150	$ -	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4065 - Depreciation	$ 170,827	$ 181,434	$ 178,712	$ 186,741	$ 192,343	$ 198,114	$ 204,057	$ 210,179	$ 216,484	$ 222,979	$ 229,668	$ 236,558	$ 243,655	$ 250,965	$ 258,494	$ 266,248	$ 274,236	$ 282,463	$ 290,937	$ 299,665	$ 308,655	$ 317,914	$ 327,452	$ 337,275
4090 - Sewer Construction or Capital Expense	$ -	$ -	$ -	$ 1,208	$ 1,244	$ 1,281	$ 1,319	$ 1,359	$ 1,400	$ 1,442	$ 1,485	$ 1,530	$ 1,576	$ 1,623	$ 1,671	$ 1,722	$ 1,773	$ 1,826	$ 1,881	$ 1,938	$ 1,996	$ 2,056	$ 2,117	$ 2,181
Subtotal Collection Operating Expenses	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$ 1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,464,873**	**$ 1,425,938**	**$ 1,472,147**	**$ 1,509,743**	**$ 1,548,466**	**$ 1,588,351**	**$ 1,653,762**	**$ 1,696,076**	**$ 1,739,659**	**$ 1,784,550**	**$ 1,855,118**	**$ 1,902,742**	**$ 1,951,796**	**$ 2,002,321**	**$ 2,078,691**	**$ 2,156,623**	**$ 2,211,833**	**$ 2,268,700**
Debt Service																								
Debt Payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294
Reserve Amount (25% Payment)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823
Subtotal Debt Service	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**
Out of Pocket Project Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 325,972**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expense	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$ 1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,464,873**	**$ 1,425,938**	**$ 2,162,236**	**$ 1,873,860**	**$ 1,912,583**	**$ 1,952,468**	**$ 2,017,880**	**$ 2,060,194**	**$ 2,103,777**	**$ 2,148,668**	**$ 2,219,235**	**$ 2,266,860**	**$ 2,315,913**	**$ 2,366,438**	**$ 2,442,809**	**$ 2,520,741**	**$ 2,575,951**	**$ 2,632,817**
Debt Coverage Ratio									**1.01**	**1.00**	**0.99**	**0.97**	**1.03**	**1.03**	**1.01**	**0.99**	**1.06**	**1.03**	**1.02**	**0.99**	**1.07**	**1.11**	**1.09**	**1.07**
PROFIT/LOSS ( )	**$ 107,962**	**$ 31,059**	**$ 248,876**	**$ 24,805**	**$ 54,477**	**$ 354,206**	**$ 255,613**	**$ 381,371**	**$ (320,582)**	**$ (1,568)**	**$ (5,244)**	**$ (9,694)**	**$ 11,629**	**$ 9,391**	**$ 3,405**	**$ (4,886)**	**$ 20,596**	**$ 11,522**	**$ 6,172**	**$ (2,852)**	**$ 23,967**	**$ 40,882**	**$ 33,479**	**$ 24,255**
Reserve Account	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 72,823**	**$ 147,453**	**$ 223,933**	**$ 302,310**	**$ 382,631**	**$ 464,944**	**$ 549,298**	**$ 635,744**	**$ 724,334**	**$ 815,121**	**$ 908,159**	**$ 1,003,505**	**$ 1,101,216**	**$ 1,201,349**	**$ 1,303,966**	**$ 1,409,128**
Total Sewer Fund	**$ 2,918,611**	**$ 3,131,103**	**$ 3,386,128**	**$ 3,410,933**	**$ 3,465,411**	**$ 3,819,617**	**$ 4,075,230**	**$ 4,456,601**	**$ 4,136,019**	**$ 4,134,451**	**$ 4,129,207**	**$ 4,119,513**	**$ 4,131,142**	**$ 4,140,533**	**$ 4,143,938**	**$ 4,139,051**	**$ 4,159,647**	**$ 4,171,170**	**$ 4,177,341**	**$ 4,174,489**	**$ 4,198,456**	**$ 4,239,338**	**$ 4,272,817**	**$ 4,297,072**
Total Cash on Hand	**$ 2,918,611**	**$ 3,131,103**	**$ 3,386,128**	**$ 3,410,933**	**$ 3,465,411**	**$ 3,819,617**	**$ 4,075,230**	**$ 4,456,601**	**$ 4,208,842**	**$ 4,281,904**	**$ 4,353,140**	**$ 4,421,824**	**$ 4,513,773**	**$ 4,605,477**	**$ 4,693,236**	**$ 4,774,795**	**$ 4,883,981**	**$ 4,986,290**	**$ 5,085,501**	**$ 5,177,994**	**$ 5,299,671**	**$ 5,440,687**	**$ 5,576,784**	**$ 5,706,200**

PROVIDENCE WASTEWATER CASH FLOW

Logan Treatment Option - Shared Outfall Line - ERU User Rate Structure

	Current Sewer User Rates		Future Sewer User Rates		
	Monthly Rate	Year Rate	Monthly Rate	Year Rate	Year
User Rate	$ 38.99	$ 467.88	$ 33.32	$ 399.84	2022

Current Fees		Collection Impact Fee		
Impact Fee	Connection Fee	Impact Fee	Connection Fee	Year
$ 2,433.00	$ 150.00	$ 2,850.23	$ 150.00	2022

Interest Rate on Cash on Hand	0.32%
Inflation	3.0%

Wastewater Improvements	
City Amount	$ 325,972
Grant Amount	$ -
Loan Amount	$ 4,541,028
Interest Rate	2.50%
Term (Years)	20
Project Cost	$ 4,867,000
Year Start	2025

Lift Station O&M	$10,000
Operation Start	2025

	0	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
Yearly Growth Rate Residential	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Yearly Growth Rate Commercial	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Indexed Inflation Multiplier				1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344	1.384	1.426	1.469	1.513	1.558	1.605	1.653	1.702	1.754	1.806
General Information																								
Flow Information																								
Average Calculated Flow (thousand gal/year)				223350	230867	238026	245185	253238	261292	269346	277400	285453	294402	303351	312299	321248	331091	340935	350778	360622	371360	382993	394627	406260
Connections																								
Residential - 1"				2173	2227	2282	2339	2397	2456	2517	2579	2643	2709	2776	2845	2916	2988	3062	3138	3216	3296	3377	3461	3547
Residential - 1 1/2"				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Residential - 2"				5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8
Residential - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial - 1"				47	48	49	51	52	53	54	56	57	59	60	62	63	65	66	68	70	71	73	75	77
Commercial - 1 1/2"				10	10	11	11	11	11	12	12	12	12	13	13	13	14	14	14	15	15	16	16	16
Commercial - 2"				13	13	14	14	14	15	15	15	16	16	17	17	17	18	18	19	19	20	20	21	21
Commercial - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi-Family - 1"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 1 1/2"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 2"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
Multi-Family - 4"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
City - 1"				21	22	22	23	23	24	24	25	26	26	27	27	28	29	30	30	31	32	33	33	34
City - 2"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
City - No Bill Rate				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Religious - 2"				9	9	9	10	10	10	10	11	11	11	11	12	12	12	13	13	13	14	14	14	15
Educational - 1"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
Educational - 2"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Educational - 4"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Total Number of Connections				**2320**	**2378**	**2436**	**2497**	**2559**	**2622**	**2687**	**2754**	**2822**	**2892**	**2964**	**3038**	**3113**	**3190**	**3269**	**3350**	**3433**	**3518**	**3606**	**3695**	**3787**
ERUs																								
Sewer - Residential ERU				2680	2750	2820	2890	2970	3050	3130	3210	3290	3380	3470	3560	3650	3750	3850	3950	4050	4160	4270	4380	4490
Sewer - Commercial ERU				236	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	430	450	470
Total Number of ERUs				**2916**	**3000**	**3080**	**3160**	**3250**	**3340**	**3430**	**3520**	**3610**	**3710**	**3810**	**3910**	**4010**	**4120**	**4230**	**4340**	**4450**	**4570**	**4700**	**4830**	**4960**
New ERUs																								
New - Residential ERU					70	70	70	80	80	80	80	80	90	90	90	90	100	100	100	100	110	110	110	110
New - Commercial ERU					14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	20	20	20
Total Number of New ERUs					**84**	**80**	**80**	**90**	**90**	**90**	**90**	**90**	**100**	**100**	**100**	**100**	**110**	**110**	**110**	**110**	**120**	**130**	**130**	**130**
Revenue																								
Operating Income																								
Residential User Rates					$ 1,253,918	$ 1,286,670	$ 1,127,549	$ 1,155,538	$ 1,187,525	$ 1,219,512	$ 1,251,499	$ 1,283,486	$ 1,315,474	$ 1,351,459	$ 1,387,445	$ 1,423,430	$ 1,459,416	$ 1,499,400	$ 1,539,384	$ 1,579,368	$ 1,619,352	$ 1,663,334	$ 1,707,317	$ 1,751,299	$ 1,795,282
Commercial User Rates					$ 110,420	$ 116,970	$ 103,958	$ 107,957	$ 111,955	$ 115,954	$ 119,952	$ 123,950	$ 127,949	$ 131,947	$ 135,946	$ 139,944	$ 143,942	$ 147,941	$ 151,939	$ 155,938	$ 159,936	$ 163,934	$ 171,931	$ 179,928	$ 187,925
Connection Fees					$ 10,950	$ 8,400	$ 8,700	$ 9,450	$ 9,300	$ 9,600	$ 9,450	$ 10,200	$ 10,350	$ 10,200	$ 10,950	$ 10,950	$ 10,950	$ 12,150	$ 11,550	$ 12,150	$ 12,300	$ 13,650	$ 12,750	$ 13,350	$ 13,800
Subtotal Operating Income				**$ 1,041,730**	**$ 967,758**	**$ 1,213,854**	**$ 1,375,288**	**$ 1,412,040**	**$ 1,240,207**	**$ 1,272,944**	**$ 1,308,780**	**$ 1,345,066**	**$ 1,380,901**	**$ 1,417,637**	**$ 1,453,772**	**$ 1,493,606**	**$ 1,534,340**	**$ 1,574,324**	**$ 1,614,308**	**$ 1,659,491**	**$ 1,702,873**	**$ 1,747,456**	**$ 1,791,588**	**$ 1,840,919**	**$ 1,891,998**	**$ 1,944,577**	**$ 1,997,006**
Non-Operating Income																								
3810 - INTEREST EARNINGS	$ 5,642.19	$ 9,038.74	$ 14,201.75	$ 10,858.19	$ 11,709.86	$ 12,723.52	$ 13,821.97	$ 14,604.54	$ 15,797.94	$ 14,988.15	$ 15,219.03	$ 15,450.21	$ 15,676.20	$ 15,996.35	$ 16,318.85	$ 16,637.39	$ 16,947.94	$ 17,354.18	$ 17,755.17	$ 18,150.34	$ 18,533.71	$ 19,008.41	$ 19,575.51	$ 20,143.95
Residential Impact Fees	$ -	$ -	$ -	$ 2,433.00	$ 170,310.00	$ 170,310.00	$ 170,310.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 218,970.00	$ 218,970.00	$ 218,970.00	$ 218,970.00	$ 243,300.00	$ 243,300.00	$ 243,300.00	$ 243,300.00	$ 267,630.00	$ 267,630.00	$ 267,630.00	$ 267,630.00
Commercial Impact Fees	$ -	$ -	$ -	$ -	$ 34,062.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 48,660.00	$ 48,660.00	$ 48,660.00
Collection Impact Fee	$ -	$ -	$ -	$ -	$ -	$228,018.74	$228,018.74	$256,521.08	$256,521.08	$256,521.08	$256,521.08	$256,521.08	$285,023.42	$285,023.42	$285,023.42	$285,023.42	$313,525.76	$313,525.76	$313,525.76	$313,525.76	$342,028.11	$370,530.45	$370,530.45	$370,530.45
Subtotal Non-Operating Income	**$ 5,642**	**$ 9,039**	**$ 14,202**	**$ 13,291**	**$ 216,082**	**$ 435,382**	**$ 436,481**	**$ 490,096**	**$ 491,289**	**$ 490,479**	**$ 490,710**	**$ 490,941**	**$ 544,000**	**$ 544,320**	**$ 544,642**	**$ 544,961**	**$ 598,104**	**$ 598,510**	**$ 598,911**	**$ 599,306**	**$ 652,522**	**$ 705,829**	**$ 706,396**	**$ 706,964**
Total Revenue	**$ 1,047,372**	**$ 976,797**	**$ 1,228,056**	**$ 1,388,579**	**$ 1,628,122**	**$ 1,675,589**	**$ 1,709,425**	**$ 1,798,876**	**$ 1,836,355**	**$ 1,871,380**	**$ 1,908,347**	**$ 1,944,714**	**$ 2,037,606**	**$ 2,078,660**	**$ 2,118,967**	**$ 2,159,269**	**$ 2,257,595**	**$ 2,301,383**	**$ 2,346,367**	**$ 2,390,894**	**$ 2,493,441**	**$ 2,597,827**	**$ 2,650,973**	**$ 2,703,971**
Expenses																								
Collection Operating Expenses																								
4011 - Salaries & Wages-Transfer to Admin	$ 53,577	$ 52,389	$ 52,980	$ 52,192	$ 53,758	$ 55,371	$ 57,032	$ 58,743	$ 60,505	$ 62,320	$ 64,190	$ 66,116	$ 68,099	$ 70,142	$ 72,246	$ 74,414	$ 76,646	$ 78,946	$ 81,314	$ 83,753	$ 86,266	$ 88,854	$ 91,520	$ 94,265
4013 - EMP Benefits-Transfer to Admin	$ 27,525	$ 26,152	$ 30,387	$ 29,942	$ 30,840	$ 31,766	$ 32,719	$ 33,700	$ 34,711	$ 35,752	$ 36,825	$ 37,930	$ 39,068	$ 40,240	$ 41,447	$ 42,690	$ 43,971	$ 45,290	$ 46,649	$ 48,048	$ 49,490	$ 50,974	$ 52,504	$ 54,079
4020 - Bad Debt - Write Off	$ -	$ -	$ -	$ 43,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4021 - Books, Subscriptions, & Members	$ -	$ 25	$ 50	$ 25	$ 26	$ 27	$ 27	$ 28	$ 29	$ 30	$ 31	$ 32	$ 33	$ 34	$ 35	$ 36	$ 37	$ 38	$ 39	$ 40	$ 41	$ 43	$ 44	$ 45
4024 - Office Supplies and Expense	$ 5,512	$ 5,323	$ 5,819	$ 5,513	$ 5,678	$ 5,849	$ 6,024	$ 6,205	$ 6,391	$ 6,583	$ 6,780	$ 6,983	$ 7,193	$ 7,409	$ 7,631	$ 7,860	$ 8,096	$ 8,339	$ 8,589	$ 8,846	$ 9,112	$ 9,385	$ 9,667	$ 9,957
4025 - Equipment - Supplies & Maintenance	$ 396	$ 676	$ 5,668	$ 1,953	$ 2,012	$ 2,072	$ 2,135	$ 2,199	$ 2,265	$ 2,333	$ 2,402	$ 2,475	$ 2,549	$ 2,625	$ 2,704	$ 2,785	$ 2,869	$ 2,955	$ 3,043	$ 3,135	$ 3,229	$ 3,326	$ 3,425	$ 3,528
4027 - Utilities	$ 1,131	$ 1,294	$ 1,391	$ 1,128	$ 1,162	$ 1,197	$ 1,233	$ 1,270	$ 1,308	$ 1,347	$ 1,387	$ 1,429	$ 1,472	$ 1,516	$ 1,561	$ 1,608	$ 1,656	$ 1,706	$ 1,757	$ 1,810	$ 1,864	$ 1,920	$ 1,978	$ 2,037
4028 - Telephone	$ -	$ 332	$ 293	$ 509	$ 524	$ 540	$ 556	$ 573	$ 590	$ 608	$ 626	$ 645	$ 664	$ 684	$ 705	$ 726	$ 748	$ 770	$ 793	$ 817	$ 842	$ 867	$ 893	$ 920
4029 - Logan Sewer Treatment	$ 640,664	$ 615,688	$ 643,787	$ 726,413	$ 748,205	$ 770,651	$ 793,771	$ 817,584	$ 842,111	$ 867,375	$ 893,396	$ 920,198	$ 947,804	$ 976,238	$ 1,005,525	$ 1,035,691	$ 1,066,762	$ 1,098,764	$ 1,131,727	$ 1,165,679	$ 1,200,650	$ 1,236,669	$ 1,273,769	$ 1,311,982
4031 - Professional & Technical Services	$ 34,934	$ 55,238	$ 58,935	$ 59,976	$ 61,775	$ 63,628	$ 65,537	$ 67,503	$ 69,528	$ 71,614	$ 73,763	$ 75,976	$ 78,255	$ 80,603	$ 83,021	$ 85,511	$ 88,077	$ 90,719	$ 93,440	$ 96,244	$ 99,131	$ 102,105	$ 105,168	$ 108,323
Logan City Impact Fees	$ -	$ -	$ -	$ -	$ 206,805	$ 194,640	$ 194,640	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 243,300	$ 243,300	$ 243,300	$ 243,300	$ 267,630	$ 267,630	$ 267,630	$ 267,630	$ 291,960	$ 316,290	$ 316,290	$ 316,290
4033 - Education and Training	$ 375	$ 308	$ -	$ -	$ 318	$ 327	$ 337	$ 347	$ 357	$ 368	$ 379	$ 391	$ 402	$ 414	$ 427	$ 440	$ 453	$ 466	$ 480	$ 495	$ 510	$ 525	$ 541	$ 557
4040 - Line - Repair & Replace	$ 2,305	$ 5,707	$ 122	$ 4,193	$ 4,318	$ 4,448	$ 103,000	$ 4,719	$ 4,860	$ 5,006	$ 5,156	$ 5,311	$ 5,470	$ 5,634	$ 5,803	$ 5,978	$ 6,157	$ 6,342	$ 6,532	$ 6,728	$ 6,930	$ 7,137	$ 7,352	$ 7,572
4045 - Lift Station - Repair & Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000	$ 10,300	$ 10,609	$ 10,927	$ 11,255	$ 11,593	$ 11,941	$ 12,299	$ 12,668	$ 13,048	$ 13,439	$ 13,842	$ 14,258	$ 14,685	$ 15,126	$ 15,580
4048 - Repairs & Supplies	$ 2,165	$ 1,022	$ 1,035	$ 2,275	$ 2,343	$ 2,413	$ 2,486	$ 2,560	$ 2,637	$ 2,716	$ 2,798	$ 2,882	$ 2,968	$ 3,057	$ 3,149	$ 3,243	$ 3,341	$ 3,441	$ 3,544	$ 3,650	$ 3,760	$ 3,873	$ 3,989	$ 4,109
4062 - Refunds	$ -	$ 150	$ -	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4065 - Depreciation	$ 170,827	$ 181,434	$ 178,712	$ 186,741	$ 192,343	$ 198,114	$ 204,057	$ 210,179	$ 216,484	$ 222,979	$ 229,668	$ 236,558	$ 243,655	$ 250,965	$ 258,494	$ 266,248	$ 274,236	$ 282,463	$ 290,937	$ 299,665	$ 308,655	$ 317,914	$ 327,452	$ 337,275
4090 - Sewer Construction or Capital Expense	$ -	$ -	$ -	$ 1,208	$ 1,244	$ 1,281	$ 1,319	$ 1,359	$ 1,400	$ 1,442	$ 1,485	$ 1,530	$ 1,576	$ 1,623	$ 1,671	$ 1,722	$ 1,773	$ 1,826	$ 1,881	$ 1,938	$ 1,996	$ 2,056	$ 2,117	$ 2,181
Subtotal Collection Operating Expenses	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$ 1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,464,873**	**$ 1,425,938**	**$ 1,472,147**	**$ 1,509,743**	**$ 1,548,466**	**$ 1,588,351**	**$ 1,653,762**	**$ 1,696,076**	**$ 1,739,659**	**$ 1,784,550**	**$ 1,855,118**	**$ 1,902,742**	**$ 1,951,796**	**$ 2,002,321**	**$ 2,078,691**	**$ 2,156,623**	**$ 2,211,833**	**$ 2,268,700**
Debt Service																								
Debt Payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294
Reserve Amount (25% Payment)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823
Subtotal Debt Service	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**
Out of Pocket Project Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 325,972**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expense	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$ 1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,464,873**	**$ 1,425,938**	**$ 2,162,236**	**$ 1,873,860**	**$ 1,912,583**	**$ 1,952,468**	**$ 2,017,880**	**$ 2,060,194**	**$ 2,103,777**	**$ 2,148,668**	**$ 2,219,235**	**$ 2,266,860**	**$ 2,315,913**	**$ 2,366,438**	**$ 2,442,809**	**$ 2,520,741**	**$ 2,575,951**	**$ 2,632,817**
Debt Coverage Ratio									**1.00**	**0.99**	**0.99**	**0.98**	**1.05**	**1.05**	**1.04**	**1.03**	**1.11**	**1.09**	**1.08**	**1.07**	**1.14**	**1.21**	**1.21**	**1.20**
PROFIT/LOSS ( )	**$ 107,962**	**$ 31,059**	**$ 248,876**	**$ 273,202**	**$ 316,770**	**$ 343,266**	**$ 244,552**	**$ 372,937**	**$ (325,882)**	**$ (2,480)**	**$ (4,236)**	**$ (7,755)**	**$ 19,726**	**$ 18,467**	**$ 15,190**	**$ 10,602**	**$ 38,359**	**$ 34,523**	**$ 30,453**	**$ 24,456**	**$ 50,632**	**$ 77,086**	**$ 75,022**	**$ 71,154**
Reserve Account	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 72,823**	**$ 147,453**	**$ 223,933**	**$ 302,310**	**$ 382,631**	**$ 464,944**	**$ 549,298**	**$ 635,744**	**$ 724,334**	**$ 815,121**	**$ 908,159**	**$ 1,003,505**	**$ 1,101,216**	**$ 1,201,349**	**$ 1,303,966**	**$ 1,409,128**
Total Sewer Fund	**$ 2,918,611**	**$ 3,131,103**	**$ 3,386,128**	**$ 3,659,330**	**$ 3,976,100**	**$ 4,319,366**	**$ 4,563,918**	**$ 4,936,855**	**$ 4,610,974**	**$ 4,608,494**	**$ 4,604,257**	**$ 4,596,503**	**$ 4,616,229**	**$ 4,634,696**	**$ 4,649,885**	**$ 4,660,487**	**$ 4,698,846**	**$ 4,733,370**	**$ 4,763,823**	**$ 4,788,279**	**$ 4,838,911**	**$ 4,915,997**	**$ 4,991,019**	**$ 5,062,173**
Total Cash on Hand	**$ 2,918,611**	**$ 3,131,103**	**$ 3,386,128**	**$ 3,659,330**	**$ 3,976,100**	**$ 4,319,366**	**$ 4,563,918**	**$ 4,936,855**	**$ 4,683,797**	**$ 4,755,947**	**$ 4,828,191**	**$ 4,898,813**	**$ 4,998,860**	**$ 5,099,639**	**$ 5,199,183**	**$ 5,296,231**	**$ 5,423,180**	**$ 5,548,491**	**$ 5,671,983**	**$ 5,791,784**	**$ 5,940,127**	**$ 6,117,346**	**$ 6,294,986**	**$ 6,471,301**

PROVIDENCE WASTEWATER CASH FLOW

Logan Treatment Option - Shared Outfall Line - Water Service Capacity User Rate Structure

	Current Sewer User Rates		Future Sewer User Rates			
Water Service Size	Monthly Rate	Year Rate	Diameter	Monthly Rate	Year Rate	Year
1" Connection	$ 38.99	$ 467.88	1	$ 38.66	$ 463.92	2022
1 1/2" Connection	$ 57.55	$ 690.60	1.5	$ 86.99	$ 1,043.82	2022
2" Connection	$ 77.55	$ 930.60	2	$ 154.64	$ 1,855.68	2022
3" Connection	$ 116.97	$ 1,403.64	3	$ 347.94	$ 4,175.28	2022
4" Connection	$ 155.96	$ 1,871.52	4	$ 618.56	$ 7,422.72	2022
6" Connection	$ 233.94	$ 2,807.28	6	$ 1,391.76	$ 16,701.12	2022

Current Fees		Collection Impact Fee		
Impact Fee	Connection Fee	Impact Fee	Connection Fee	Year
$ 2,433.00	$ 150.00	$ 2,850.23	$ 150.00	2022

Interest Rate on Cash on Hand	0.32%
Inflation	3.0%

Wastewater Improvements	
City Amount	$ 325,972
Grant Amount	$ -
Loan Amount	$ 4,541,028
Interest Rate	2.50%
Term (Years)	20
Project Cost	$ 4,867,000
Year Start	2025

Lift Station O&M	$10,000
Operation Start	2025

	0	0	0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	2017	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**
Yearly Growth Rate Residential	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Yearly Growth Rate Commercial	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%	2.48%
Indexed Inflation Multiplier				1.000	1.030	1.061	1.093	1.126	1.159	1.194	1.230	1.267	1.305	1.344	1.384	1.426	1.469	1.513	1.558	1.605	1.653	1.702	1.754	1.806
General Information																								
Flow Information																								
Average Calculated Flow (thousand gal/year)				223350	230867	238026	245185	253238	261292	269346	277400	285453	294402	303351	312299	321248	331091	340935	350778	360622	371360	382993	394627	406260
Connections																								
Residential - 1"				2173	2227	2282	2339	2397	2456	2517	2579	2643	2709	2776	2845	2916	2988	3062	3138	3216	3296	3377	3461	3547
Residential - 1 1/2"				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Residential - 2"				5	5	5	5	6	6	6	6	6	6	6	7	7	7	7	7	7	8	8	8	8
Residential - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial - 1"				47	48	49	51	52	53	54	56	57	59	60	62	63	65	66	68	70	71	73	75	77
Commercial - 1 1/2"				10	10	11	11	11	11	12	12	12	12	13	13	13	14	14	14	15	15	16	16	16
Commercial - 2"				13	13	14	14	14	15	15	15	16	16	17	17	17	18	18	19	19	20	20	21	21
Commercial - 4"				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multi-Family - 1"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 1 1/2"				7	7	7	8	8	8	8	8	9	9	9	9	9	10	10	10	10	11	11	11	11
Multi-Family - 2"				6	6	6	6	7	7	7	7	7	7	8	8	8	8	8	9	9	9	9	10	10
Multi-Family - 4"				6	6	6	6	7	7	7	7	7	8	8	8	8	8	8	9	9	9	9	10	10
City - 1"				21	22	22	23	23	24	24	25	26	26	27	27	28	29	30	30	31	32	33	33	34
City - 2"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
City - No Bill Rate				3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	4	4	5	5	5	5
Religious - 2"				9	9	9	10	10	10	10	11	11	11	11	12	12	12	13	13	13	14	14	14	15
Educational - 1"				4	4	4	4	4	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	7
Educational - 2"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Educational - 4"				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2
Total Number of Connections				**2320**	**2378**	**2436**	**2497**	**2559**	**2622**	**2687**	**2754**	**2822**	**2892**	**2964**	**3038**	**3113**	**3190**	**3269**	**3350**	**3433**	**3518**	**3606**	**3695**	**3787**
ERUs																								
Sewer - Residential ERU				2680	2750	2820	2890	2970	3050	3130	3210	3290	3380	3470	3560	3650	3750	3850	3950	4050	4160	4270	4380	4490
Sewer - Commercial ERU				236	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	430	450	470
Total Number of ERUs				**2916**	**3000**	**3080**	**3160**	**3250**	**3340**	**3430**	**3520**	**3610**	**3710**	**3810**	**3910**	**4010**	**4120**	**4230**	**4340**	**4450**	**4570**	**4700**	**4830**	**4960**
New ERUs																								
New - Residential ERU					70	70	70	80	80	80	80	80	90	90	90	90	100	100	100	100	110	110	110	110
New - Commercial ERU					14	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	20	20	20
Total Number of New ERUs					**84**	**80**	**80**	**90**	**90**	**90**	**90**	**90**	**100**	**100**	**100**	**100**	**110**	**110**	**110**	**110**	**120**	**130**	**130**	**130**
Revenue																								
Operating Income																								
1" Connection User Rates				$ 1,053,666	$ 1,079,867	$ 1,096,707	$ 1,125,006	$ 1,152,377	$ 1,181,140	$ 1,209,903	$ 1,240,058	$ 1,271,141	$ 1,302,687	$ 1,334,698	$ 1,367,636	$ 1,401,502	$ 1,437,224	$ 1,472,482	$ 1,508,668	$ 1,546,245	$ 1,584,751	$ 1,623,720	$ 1,663,617	$ 1,705,370
1 1/2" Connection User Rates				$ 13,812	$ 13,812	$ 21,920	$ 22,964	$ 22,964	$ 22,964	$ 24,008	$ 25,052	$ 26,096	$ 26,096	$ 27,139	$ 27,139	$ 27,139	$ 29,227	$ 29,227	$ 29,227	$ 30,271	$ 32,358	$ 33,402	$ 33,402	$ 33,402
2" Connection User Rates				$ 35,363	$ 35,363	$ 72,372	$ 74,227	$ 77,939	$ 81,650	$ 81,650	$ 83,506	$ 85,361	$ 85,361	$ 89,073	$ 92,784	$ 92,784	$ 96,495	$ 98,351	$ 102,062	$ 102,062	$ 109,485	$ 109,485	$ 113,196	$ 116,908
3" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4" Connection User Rates				$ 13,101	$ 13,101	$ 51,959	$ 51,959	$ 59,382	$ 59,382	$ 59,382	$ 59,382	$ 59,382	$ 59,382	$ 66,804	$ 66,804	$ 66,804	$ 66,804	$ 66,804	$ 74,227	$ 74,227	$ 81,650	$ 81,650	$ 89,073	$ 89,073
6" Connection User Rates				$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Connection Fees				$ 10,950	$ 8,400	$ 8,700	$ 9,450	$ 9,300	$ 9,600	$ 9,450	$ 10,200	$ 10,350	$ 10,200	$ 10,950	$ 10,950	$ 10,950	$ 12,150	$ 11,550	$ 12,150	$ 12,300	$ 13,650	$ 12,750	$ 13,350	$ 13,800
Subtotal Operating Income				**$ 1,041,730**	**$ 967,758**	**$ 1,213,854**	**$ 1,126,891**	**$ 1,150,542**	**$ 1,251,658**	**$ 1,283,606**	**$ 1,321,962**	**$ 1,354,736**	**$ 1,384,393**	**$ 1,418,197**	**$ 1,452,329**	**$ 1,483,726**	**$ 1,528,664**	**$ 1,565,314**	**$ 1,599,180**	**$ 1,641,901**	**$ 1,678,415**	**$ 1,726,334**	**$ 1,765,106**	**$ 1,821,894**	**$ 1,861,007**	**$ 1,912,638**	**$ 1,958,553**
Non-Operating Income																								
3810 - INTEREST EARNINGS	$ 5,642.19	$ 9,038.74	$ 14,201.75	$ 10,858.19	$ 10,914.99	$ 11,089.31	$ 12,219.18	$ 13,030.73	$ 14,261.28	$ 13,477.52	$ 13,714.74	$ 13,942.90	$ 14,159.45	$ 14,443.13	$ 14,742.49	$ 15,027.15	$ 15,284.14	$ 15,628.77	$ 15,945.97	$ 16,267.77	$ 16,560.36	$ 16,967.87	$ 17,429.27	$ 17,888.64
Residential Impact Fees	$ -	$ -	$ -	$ 2,433.00	$ 170,310.00	$ 170,310.00	$ 170,310.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 194,640.00	$ 218,970.00	$ 218,970.00	$ 218,970.00	$ 218,970.00	$ 243,300.00	$ 243,300.00	$ 243,300.00	$ 243,300.00	$ 267,630.00	$ 267,630.00	$ 267,630.00	$ 267,630.00
Commercial Impact Fees	$ -	$ -	$ -	$ -	$ 34,062.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 24,330.00	$ 48,660.00	$ 48,660.00	$ 48,660.00
Collection Impact Fee	$ -	$ -	$ -	$ -	$ -	$ 228,018.74	$ 228,018.74	$ 256,521.08	$ 256,521.08	$ 256,521.08	$ 256,521.08	$ 256,521.08	$ 285,023.42	$ 285,023.42	$ 285,023.42	$ 285,023.42	$ 313,525.76	$ 313,525.76	$ 313,525.76	$ 313,525.76	$ 342,028.11	$ 370,530.45	$ 370,530.45	$ 370,530.45
Subtotal Non-Operating Income	**$ 5,642**	**$ 9,039**	**$ 14,202**	**$ 13,291**	**$ 215,287**	**$ 433,748**	**$ 434,878**	**$ 488,522**	**$ 489,752**	**$ 488,969**	**$ 489,206**	**$ 489,434**	**$ 542,483**	**$ 542,767**	**$ 543,066**	**$ 543,351**	**$ 596,440**	**$ 596,785**	**$ 597,102**	**$ 597,424**	**$ 650,548**	**$ 703,788**	**$ 704,250**	**$ 704,709**
Total Revenue	**$ 1,047,372**	**$ 976,797**	**$ 1,228,056**	**$ 1,140,182**	**$ 1,365,829**	**$ 1,685,406**	**$ 1,718,484**	**$ 1,810,483**	**$ 1,844,488**	**$ 1,873,361**	**$ 1,907,403**	**$ 1,941,763**	**$ 2,026,209**	**$ 2,071,431**	**$ 2,108,380**	**$ 2,142,531**	**$ 2,238,341**	**$ 2,275,199**	**$ 2,323,436**	**$ 2,362,529**	**$ 2,472,443**	**$ 2,564,796**	**$ 2,616,888**	**$ 2,663,262**
Expenses																								
Collection Operating Expenses																								
4011 - Salaries & Wages-Transfer to Admin	$ 53,577	$ 52,389	$ 52,980	$ 52,192	$ 53,758	$ 55,371	$ 57,032	$ 58,743	$ 60,505	$ 62,320	$ 64,190	$ 66,116	$ 68,099	$ 70,142	$ 72,246	$ 74,414	$ 76,646	$ 78,946	$ 81,314	$ 83,753	$ 86,266	$ 88,854	$ 91,520	$ 94,265
4013 - EMP Benefits-Transfer to Admin	$ 27,525	$ 26,152	$ 30,387	$ 29,942	$ 30,840	$ 31,766	$ 32,719	$ 33,700	$ 34,711	$ 35,752	$ 36,825	$ 37,930	$ 39,068	$ 40,240	$ 41,447	$ 42,690	$ 43,971	$ 45,290	$ 46,649	$ 48,048	$ 49,490	$ 50,974	$ 52,504	$ 54,079
4020 - Bad Debt - Write Off	$ -	$ -	$ -	$ 43,160	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4021 - Books, Subscriptions, & Members	$ -	$ 25	$ 50	$ 25	$ 26	$ 27	$ 27	$ 28	$ 29	$ 30	$ 31	$ 32	$ 33	$ 34	$ 35	$ 36	$ 37	$ 38	$ 39	$ 40	$ 41	$ 43	$ 44	$ 45
4024 - Office Supplies and Expense	$ 5,512	$ 5,323	$ 5,819	$ 5,513	$ 5,678	$ 5,849	$ 6,024	$ 6,205	$ 6,391	$ 6,583	$ 6,780	$ 6,983	$ 7,193	$ 7,409	$ 7,631	$ 7,860	$ 8,096	$ 8,339	$ 8,589	$ 8,846	$ 9,112	$ 9,385	$ 9,667	$ 9,957
4025 - Equipment - Supplies & Maintenance	$ 396	$ 676	$ 5,668	$ 1,953	$ 2,012	$ 2,072	$ 2,135	$ 2,199	$ 2,265	$ 2,333	$ 2,402	$ 2,475	$ 2,549	$ 2,625	$ 2,704	$ 2,785	$ 2,869	$ 2,955	$ 3,043	$ 3,135	$ 3,229	$ 3,326	$ 3,425	$ 3,528
4027 - Utilities	$ 1,131	$ 1,294	$ 1,391	$ 1,128	$ 1,162	$ 1,197	$ 1,233	$ 1,270	$ 1,308	$ 1,347	$ 1,387	$ 1,429	$ 1,472	$ 1,516	$ 1,561	$ 1,608	$ 1,656	$ 1,706	$ 1,757	$ 1,810	$ 1,864	$ 1,920	$ 1,978	$ 2,037
4028 - Telephone	$ -	$ 332	$ 293	$ 509	$ 524	$ 540	$ 556	$ 573	$ 590	$ 608	$ 626	$ 645	$ 664	$ 684	$ 705	$ 726	$ 748	$ 770	$ 793	$ 817	$ 842	$ 867	$ 893	$ 920
4029 - Logan Sewer Treatment	$ 640,664	$ 615,688	$ 643,787	$ 726,413	$ 748,205	$ 770,651	$ 793,771	$ 817,584	$ 842,111	$ 867,375	$ 893,396	$ 920,198	$ 947,804	$ 976,238	$ 1,005,525	$ 1,035,691	$ 1,066,762	$ 1,098,764	$ 1,131,727	$ 1,165,679	$ 1,200,650	$ 1,236,669	$ 1,273,769	$ 1,311,982
4031 - Professional & Technical Services	$ 34,934	$ 55,238	$ 58,935	$ 59,976	$ 61,775	$ 63,628	$ 65,537	$ 67,503	$ 69,528	$ 71,614	$ 73,763	$ 75,976	$ 78,255	$ 80,603	$ 83,021	$ 85,511	$ 88,077	$ 90,719	$ 93,440	$ 96,244	$ 99,131	$ 102,105	$ 105,168	$ 108,323
Logan City Impact Fees	$ -	$ -	$ -	$ -	$ 206,805	$ 194,640	$ 194,640	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 218,970	$ 243,300	$ 243,300	$ 243,300	$ 243,300	$ 267,630	$ 267,630	$ 267,630	$ 267,630	$ 291,960	$ 316,290	$ 316,290	$ 316,290
4033 - Education and Training	$ 375	$ 308	$ -	$ -	$ 318	$ 327	$ 337	$ 347	$ 357	$ 368	$ 379	$ 391	$ 402	$ 414	$ 427	$ 440	$ 453	$ 466	$ 480	$ 495	$ 510	$ 525	$ 541	$ 557
4040 - Line - Repair & Replace	$ 2,305	$ 5,707	$ 122	$ 4,193	$ 4,318	$ 4,448	$ 103,000	$ 4,719	$ 4,860	$ 5,006	$ 5,156	$ 5,311	$ 5,470	$ 5,634	$ 5,803	$ 5,978	$ 6,157	$ 6,342	$ 6,532	$ 6,728	$ 6,930	$ 7,137	$ 7,352	$ 7,572
4045 - Lift Station - Repair & Maintenance	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,000	$ 10,300	$ 10,609	$ 10,927	$ 11,255	$ 11,593	$ 11,941	$ 12,299	$ 12,668	$ 13,048	$ 13,439	$ 13,842	$ 14,258	$ 14,685	$ 15,126	$ 15,580
4048 - Repairs & Supplies	$ 2,165	$ 1,022	$ 1,035	$ 2,275	$ 2,343	$ 2,413	$ 2,486	$ 2,560	$ 2,637	$ 2,716	$ 2,798	$ 2,882	$ 2,968	$ 3,057	$ 3,149	$ 3,243	$ 3,341	$ 3,441	$ 3,544	$ 3,650	$ 3,760	$ 3,873	$ 3,989	$ 4,109
4062 - Refunds	$ -	$ 150	$ -	$ 150	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4065 - Depreciation	$ 170,827	$ 181,434	$ 178,712	$ 186,741	$ 192,343	$ 198,114	$ 204,057	$ 210,179	$ 216,484	$ 222,979	$ 229,668	$ 236,558	$ 243,655	$ 250,965	$ 258,494	$ 266,248	$ 274,236	$ 282,463	$ 290,937	$ 299,665	$ 308,655	$ 317,914	$ 327,452	$ 337,275
4090 - Sewer Construction or Capital Expense	$ -	$ -	$ -	$ 1,208	$ 1,244	$ 1,281	$ 1,319	$ 1,359	$ 1,400	$ 1,442	$ 1,485	$ 1,530	$ 1,576	$ 1,623	$ 1,671	$ 1,722	$ 1,773	$ 1,826	$ 1,881	$ 1,938	$ 1,996	$ 2,056	$ 2,117	$ 2,181
Subtotal Collection Operating Expenses	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$ 1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,464,873**	**$ 1,425,938**	**$ 1,472,147**	**$ 1,509,743**	**$ 1,548,466**	**$ 1,588,351**	**$ 1,653,762**	**$ 1,696,076**	**$ 1,739,659**	**$ 1,784,550**	**$ 1,855,118**	**$ 1,902,742**	**$ 1,951,796**	**$ 2,002,321**	**$ 2,078,691**	**$ 2,156,623**	**$ 2,211,833**	**$ 2,268,700**
Debt Service																								
Debt Payment	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294	$ 291,294
Reserve Amount (25% Payment)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823	$ 72,823
Subtotal Debt Service	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**	**$ 364,117**
Out of Pocket Project Expenses	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 325,972**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expense	**$ 939,410**	**$ 945,738**	**$ 979,180**	**$ 1,115,377**	**$ 1,311,352**	**$ 1,332,323**	**$ 1,464,873**	**$ 1,425,938**	**$ 2,162,236**	**$ 1,873,860**	**$ 1,912,583**	**$ 1,952,468**	**$ 2,017,880**	**$ 2,060,194**	**$ 2,103,777**	**$ 2,148,668**	**$ 2,219,235**	**$ 2,266,860**	**$ 2,315,913**	**$ 2,366,438**	**$ 2,442,809**	**$ 2,520,741**	**$ 2,575,951**	**$ 2,632,817**
Debt Coverage Ratio									**1.02**	**1.00**	**0.99**	**0.97**	**1.02**	**1.03**	**1.01**	**0.98**	**1.05**	**1.02**	**1.02**	**0.99**	**1.08**	**1.12**	**1.11**	**1.08**
PROFIT/LOSS ( )	**$ 107,962**	**$ 31,059**	**$ 248,876**	**$ 24,805**	**$ 54,477**	**$ 353,082**	**$ 253,611**	**$ 384,545**	**$ (317,748)**	**$ (499)**	**$ (5,180)**	**$ (10,705)**	**$ 8,329**	**$ 11,237**	**$ 4,603**	**$ (6,137)**	**$ 19,106**	**$ 8,339**	**$ 7,523**	**$ (3,909)**	**$ 29,634**	**$ 44,055**	**$ 40,937**	**$ 30,445**
Reserve Account	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 72,823**	**$ 147,453**	**$ 223,933**	**$ 302,310**	**$ 382,631**	**$ 464,944**	**$ 549,298**	**$ 635,744**	**$ 724,334**	**$ 815,121**	**$ 908,159**	**$ 1,003,505**	**$ 1,101,216**	**$ 1,201,349**	**$ 1,303,966**	**$ 1,409,128**
Total Sewer Fund	**$ 2,918,611**	**$ 3,131,103**	**$ 3,386,128**	**$ 3,410,933**	**$ 3,465,411**	**$ 3,818,493**	**$ 4,072,104**	**$ 4,456,649**	**$ 4,138,901**	**$ 4,138,402**	**$ 4,133,222**	**$ 4,122,517**	**$ 4,130,846**	**$ 4,142,084**	**$ 4,146,687**	**$ 4,140,550**	**$ 4,159,655**	**$ 4,167,995**	**$ 4,175,518**	**$ 4,171,609**	**$ 4,201,243**	**$ 4,245,297**	**$ 4,286,235**	**$ 4,316,680**
Total Cash on Hand	**$ 2,918,611**	**$ 3,131,103**	**$ 3,386,128**	**$ 3,410,933**	**$ 3,465,411**	**$ 3,818,493**	**$ 4,072,104**	**$ 4,456,649**	**$ 4,211,725**	**$ 4,285,855**	**$ 4,357,155**	**$ 4,424,828**	**$ 4,513,477**	**$ 4,607,027**	**$ 4,695,984**	**$ 4,776,294**	**$ 4,883,989**	**$ 4,983,116**	**$ 5,083,677**	**$ 5,175,114**	**$ 5,302,458**	**$ 5,446,647**	**$ 5,590,201**	**$ 5,725,808**

Appendix F – ERU Values and User Rates for Non Single-Family Connections

Customer	Type	Rate	ERU Value	Water Diameter	User Rates Current	User Rates Water Service Diameter	User Rates ERU	User Rates Water Service Capacity
UPTOWN PARK BALL FIELD	CITY	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64
HAMPSHIRE PARK	CITY	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64
UPTOWN PARK BUILDING	CITY	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
CITY SHOP BUILDING	CITY	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
PROVIDENCE CITY SHOP PAINTWASH	CITY	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
PROVIDENCE CITY	CITY	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
PROVIDENCE CITY SHOP WEST HYD	CITY	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
PROVIDENCE CITY FOXRIDGE	CITY	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
PROVIDENCE CITY CMPO	CITY	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
PROVIDENCE CITY LIBRARY	CITY	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
BRAEGGER PARK-RESTROOMS	CITY	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
PIONEER BUILDERS COMPANY, INC	COMMERCIAL	WATER - 1 1/2 INCH LINE	1.5	1.5	$ 57.55	$ 62.19	$ 49.98	$ 86.99
SAUNDERS OFFICE BUILDING	COMMERCIAL	WATER - 1 1/2 INCH LINE	1	1.5	$ 57.55	$ 62.19	$ 33.32	$ 86.99
DISCOUNT TIRE	COMMERCIAL	WATER - 1 1/2 INCH LINE	1	1.5	$ 57.55	$ 62.19	$ 33.32	$ 86.99
MTN. VIEW VETERINARY	COMMERCIAL	WATER - 1 1/2 INCH LINE	1	1.5	$ 57.55	$ 62.19	$ 33.32	$ 86.99
WATERTREE DENTAL CLINIC	COMMERCIAL	WATER - 1 1/2 INCH LINE	1.5	1.5	$ 57.55	$ 62.19	$ 49.98	$ 86.99
PIONEER BUILDERS COMPANY, INC.	COMMERCIAL	WATER - 1 1/2 INCH LINE	1	1.5	$ 57.55	$ 62.19	$ 33.32	$ 86.99
SOUTH VALLEY EYECARE	COMMERCIAL	WATER - 1 1/2 INCH LINE	1	1.5	$ 57.55	$ 62.19	$ 33.32	$ 86.99
LINCOTEK MEDICAL LLC	COMMERCIAL	WATER - 1 1/2 INCH LINE	2.5	1.5	$ 57.55	$ 62.19	$ 83.30	$ 86.99
PANDA EXPRESS	COMMERCIAL	WATER - 1 1/2 INCH LINE	18.5	1.5	$ 57.55	$ 62.19	$ 616.42	$ 86.99
BIG O TIRES	COMMERCIAL	WATER - 1 1/2 INCH LINE	1	1.5	$ 57.55	$ 62.19	$ 33.32	$ 86.99
GATEWAY PROFESSIONAL PLAZA, LLC	COMMERCIAL	WATER - 2 INCH LINE	5	2	$ 77.55	$ 82.92	$ 166.60	$ 154.64
LARRY H. MILLER THEATRES, INC	COMMERCIAL	WATER - 2 INCH LINE	1.5	2	$ 77.55	$ 82.92	$ 49.98	$ 154.64
SPRING CREEK LOGAN LLC	COMMERCIAL	WATER - 2 INCH LINE	2.5	2	$ 77.55	$ 82.92	$ 83.30	$ 154.64
PROVIDENCE PLAZA	COMMERCIAL	WATER - 2 INCH LINE	3.5	2	$ 77.55	$ 82.92	$ 116.62	$ 154.64
INTERMOUNTAIN HEALTH CARE	COMMERCIAL	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64
AMSOURCE PROVIDENCE, LLC	COMMERCIAL	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64
MACEY'S INC.	COMMERCIAL	WATER - 2 INCH LINE	36	2	$ 77.55	$ 82.92	$ 1,199.52	$ 154.64
AMSOURCE PROVIDENCE, LLC.	COMMERCIAL	WATER - 2 INCH LINE	1.5	2	$ 77.55	$ 82.92	$ 49.98	$ 154.64
DOLLAR TREE #3879	COMMERCIAL	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64
LOGAN EXTERMINATION	COMMERCIAL	WATER - 2 INCH LINE	1.5	2	$ 77.55	$ 82.92	$ 49.98	$ 154.64
PROVIDENCE PROFESSIONAL CONDO ASSOCATION	COMMERCIAL	WATER - 2 INCH LINE	3	2	$ 77.55	$ 82.92	$ 99.96	$ 154.64
BLACK BEAR DINER	COMMERCIAL	WATER - 2 INCH LINE	5.5	2	$ 77.55	$ 82.92	$ 183.26	$ 154.64
QQ UTAH 3, LLC	COMMERCIAL	WATER - 2 INCH LINE	51.5	2	$ 77.55	$ 82.92	$ 1,715.98	$ 154.64
U.S. POST OFFICE	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
ELITE INVESTMENT ENTERPRISES LLC	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
PIONEER BUILDERS COMPANY, INC.	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
ARBOR FIELDS, LLC	COMMERCIAL	WATER - CITY	2	1	$ 38.99	$ 41.46	$ 66.64	$ 38.66
FRONTIER CORP.	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
REAL PROPERTY MANAGEMENT CACHE VALLEY	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66

Customer	Type	Rate	ERU Value	Water Diameter	User Rates			
					Current	Water Service Diameter	ERU	Water Service Capacity
SPRING CR. OFFICE CONDO ASSOC.	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
COMMUNITY NURSING SERVICES	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
MASTER MECHANIC & AUTO GLASS	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
KELLY ELECTRONICS, INC	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
SPRING CREEK LOGAN LLC	COMMERCIAL	WATER - CITY	3	1	$ 38.99	$ 41.46	$ 99.96	$ 38.66
WILLOWS MINIATURE GOLF	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
AMSOURCE PROVIDENCE, LLC	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
MOUNT LOGAN CHIROPRACTIC	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
GECKO SOFTWARE	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
LHT ASSOCIATES	COMMERCIAL	WATER - CITY	1.5	1	$ 38.99	$ 41.46	$ 49.98	$ 38.66
REDWOOD DENTAL	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
LHT ASSOC.	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
CLEAR RECOVERY OF CACHE VALLEY	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
OLSEN TRUST	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
OLSEN TRUST	COMMERCIAL	WATER - CITY	3	1	$ 38.99	$ 41.46	$ 99.96	$ 38.66
SOUTH CACHE LAND COMPANY	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
S.C. COMM LOT 2 OWNERS ASSOC	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
MACEY'S FUEL STATION	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
BAER WELDING	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
AMERICA FIRST DRIVE THROUGH	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
S.C. COMM LOT 2 OWNERS ASSOC	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
ZIONS BANCORPORATION	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
SOUTH CACHE LAND COMPANY	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
SPRING CREEK DENTAL	COMMERCIAL	WATER - CITY	1.5	1	$ 38.99	$ 41.46	$ 49.98	$ 38.66
PROVIDENCE FAMILY MEDICINE	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
PARKWAY MEDICAL PLAZA	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
SOUTH CACHE LAND COMPANY	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
JPMORGAN CHASE BANK - 541122	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
COBBLESTONE COMMERCIAL	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
COBBLESTONE COMMERCIAL	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
TRACTOR SUPPLY COMPANY	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
DELUXE PROPERTY MANAGEMENT	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
MEMBERS FIRST CREDIT UNION - PROVIDENCE	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
GOLDENWEST FEDERAL CREDIT UNION	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
COBBLESTONE COMMERCIAL	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
MORTENSON DENTAL	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
COBBLESTONE COMMERCIAL	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
500 NORTH, LLC	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
EFORCE	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66
SOUTH CACHE COMMERCIAL BLDG 6	COMMERCIAL	WATER - CITY	1	1	$ 38.99	$ 41.46	$ 33.32	$ 38.66

Customer	Type	Rate	ERU Value	Water Diameter	User Rates: Current	User Rates: Water Service Diameter	User Rates: ERU	User Rates: Water Service Capacity
PROVIDENCE MIDDLE SCHOOL	EDUCATIONAL	WATER - 2 INCH LINE	4.5	2	$ 77.55	$ 82.92	$ 149.94	$ 154.64
CCID	EDUCATIONAL	WATER - 4 INCH LINE	2	4	$ 155.96	$ 165.84	$ 66.64	$ 618.56
CENTRO DE LA FAMILIA	EDUCATIONAL	WATER - CITY	3.5	1	$ 38.99	$ 41.46	$ 116.62	$ 38.66
PROVIDENCE ELEMENTARY SCHOOL	EDUCATIONAL	WATER - CITY	2.5	1	$ 38.99	$ 41.46	$ 83.30	$ 38.66
CREEKSIDE TOWNHOMES	MULTI-FAMILY	WATER - 1 1/2 INCH LINE	10	1.5	$ 57.55	$ 62.19	$ 333.20	$ 86.99
CREEKSIDE TOWNHOMES	MULTI-FAMILY	WATER - 1 1/2 INCH LINE	10	1.5	$ 57.55	$ 62.19	$ 333.20	$ 86.99
CREEKSIDE TOWNHOMES	MULTI-FAMILY	WATER - 1 1/2 INCH LINE	10	1.5	$ 57.55	$ 62.19	$ 333.20	$ 86.99
CREEKSIDE TOWNHOMES	MULTI-FAMILY	WATER - 1 1/2 INCH LINE	10	1.5	$ 57.55	$ 62.19	$ 333.20	$ 86.99
CREEKSIDE TOWNHOMES	MULTI-FAMILY	WATER - 1 1/2 INCH LINE	10	1.5	$ 57.55	$ 62.19	$ 333.20	$ 86.99
CREEKSIDE TOWNHOMES	MULTI-FAMILY	WATER - 1 1/2 INCH LINE	10	1.5	$ 57.55	$ 62.19	$ 333.20	$ 86.99
CREEKSIDE TOWNHOMES	MULTI-FAMILY	WATER - 1 1/2 INCH LINE	15	1.5	$ 57.55	$ 62.19	$ 499.80	$ 86.99
COTTAGE CREEK HOMEOWNERS ASSOC	MULTI-FAMILY	WATER - 2 INCH LINE	13	2	$ 77.55	$ 82.92	$ 433.16	$ 154.64
PROVIDENCE PLACE HOUSING CORP.	MULTI-FAMILY	WATER - 2 INCH LINE	22	2	$ 77.55	$ 82.92	$ 733.04	$ 154.64
HIDDEN CREEK TOWNHOMES	MULTI-FAMILY	WATER - 2 INCH LINE	11	2	$ 77.55	$ 82.92	$ 366.52	$ 154.64
GEDA LLC	MULTI-FAMILY	WATER - 2 INCH LINE	3	2	$ 77.55	$ 82.92	$ 99.96	$ 154.64
CACHE VALLEY ASSISTED LIVING	MULTI-FAMILY	WATER - 4 INCH LINE	50	4	$ 155.96	$ 165.84	$ 1,666.00	$ 618.56
COBBLESTONE AT SPRING CREEK	MULTI-FAMILY	WATER - 4 INCH LINE	114	4	$ 155.96	$ 165.84	$ 3,798.48	$ 618.56
DEER CREEK VILLAGE PROVIDENCE	MULTI-FAMILY	WATER - 4 INCH LINE	96	4	$ 155.96	$ 165.84	$ 3,198.72	$ 618.56
MT. VIEW CONDO ASSOCIATION	MULTI-FAMILY	WATER - 4 INCH LINE	48	4	$ 155.96	$ 165.84	$ 1,599.36	$ 618.56
PROVIDENCE GATEWAY	MULTI-FAMILY	WATER - 4 INCH LINE	22.5	4	$ 155.96	$ 165.84	$ 749.70	$ 618.56
RIDGEVIEW PARK LLC	MULTI-FAMILY	WATER - 4 INCH LINE	1	4	$ 155.96	$ 165.84	$ 33.32	$ 618.56
ANDERSON, BLAINE	MULTI-FAMILY	WATER - CITY	2	1	$ 38.99	$ 41.46	$ 66.64	$ 38.66
PARRY, DENNIS (FOURPLEX)	MULTI-FAMILY	WATER - CITY	4	1	$ 38.99	$ 41.46	$ 133.28	$ 38.66
HOTH FAMILY TRUST (FOURPLEX)	MULTI-FAMILY	WATER - CITY	4	1	$ 38.99	$ 41.46	$ 133.28	$ 38.66
HIDDEN CREEK TOWNHOMES	MULTI-FAMILY	WATER - CITY	11	1	$ 38.99	$ 41.46	$ 366.52	$ 38.66
RIDGE VIEW TOWNHOMES HOA, INC	MULTI-FAMILY	WATER - CITY	25	1	$ 38.99	$ 41.46	$ 833.00	$ 38.66
THE CHURCH OF JESUS CHRIST	RELIGIOUS	WATER - 2 INCH LINE	1.5	2	$ 77.55	$ 82.92	$ 49.98	$ 154.64
THE CHURCH OF JESUS CHRIST	RELIGIOUS	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64
THE CHURCH OF JESUS CHRIST	RELIGIOUS	WATER - 2 INCH LINE	6	2	$ 77.55	$ 82.92	$ 199.92	$ 154.64
THE CHURCH OF JESUS CHRIST	RELIGIOUS	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64
THE CHURCH OF JESUS CHRIST	RELIGIOUS	WATER - 2 INCH LINE	1.5	2	$ 77.55	$ 82.92	$ 49.98	$ 154.64
THE CHURCH OF JESUS CHRIST	RELIGIOUS	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64
THE CHURCH OF JESUS CHRIST	RELIGIOUS	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64
THE CHURCH OF JESUS CHRIST	RELIGIOUS	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64
THE CHURCH OF JESUS CHRIST	RELIGIOUS	WATER - 2 INCH LINE	1	2	$ 77.55	$ 82.92	$ 33.32	$ 154.64

Appendix G – Logan City & Providence City 1988 Agreement

INTER-CITY SEWAGE TREATMENT SERVICE AGREEMENT

This Agreement, made and entered into this 20th day of September, 1988, by and between the City of Logan, hereinafter called "First Party," and Providence City, Utah, hereinafter called "Second Party":

WITNESSETH:

WHEREAS, Second Party presently has no sewage disposal system and the governing body of Second Party desires to install a collection system for sewage in Providence City; and

WHEREAS, First Party has a sewage lagoon treatment facility, presently being upgraded to be capable of handling and treating the sewage of Second Party; and

WHEREAS, the parties to this agreement desire to enter into an agreement in writing, whereby and whereunder Logan will accept and treat sewage from Second Party;

NOW THEREFORE, in consideration of the mutual covenants and undertakings hereinafter stated, to which each party hereby binds and commits itself, it is agreed as followed:

1. Trunkline. Second Party will, upon obtaining necessary financing, install a sewage collection system within its corporate limits at its sole cost and expense and a trunk line extending from the collection system to a point agreed upon by both parties (as shown on Exhibit A attached hereto) where a measuring device will be installed. (This point is hereinafter referred to as the Main Collection Point.) Second Party will further install at its own expense such gravity sewer lines, pump station and pressure sewer lines as shown and agreed upon by both parties. (Size and capacity of lines and pumps to be approved by the Logan City Engineer). The sewage will be discharged (whether gravity or pressure) into the existing Logan City system at a point approved by the Logan City Engineer, where there will be sufficient capacity to handle the sewage. (See Exhibit A.)

2. Ownership/Maintenance. It is agreed that all lines above the main collection point (meter) shall be owned and maintained by Second Party. The ownership of all lines (gravity and pressure), pumps and metering station below said metering station shall be turned over to and maintained by Logan City after the Logan City Engineer's acceptance of same. Logan City reserves the right to connect to main lines above the main collection point at no charge.

3. Meter. The measuring devices installed at the collection points shall be owned and maintained by Logan, as stated above. Second Party agrees to pay all reasonable costs to operate, maintain, repair and/or replace said devices, and shall have the right to verify the meter readings and the devices at any time.

4. Acceptance of Sewage Permits. First Party agrees to accept all sewage wastes from Second Party so long as said sewage meets all requirements of Logan's ordinances, including Pretreatment and Local Limits Standards. Second Party agrees to set up sewage collection and treatment ordinances that comply with EPA and State requirements, as well as Logan City standards. Second Party also agrees to the establishment of user charges associated with the treatment of industrial and/or commercial wastes and that permits for the above be administered and approved by the City of Logan. Second Party hereby agrees to provide all necessary data to enable Logan to administer said permits.

5. Payments. Second Party agrees to pay First Party, and First Party agrees to accept from the same for accepting, conveying, treating and disposing of wastes, a regular fee of:

$4.00/connection + $0.175/1,000 gal./mo. for residential wastes
$8.00 + 0.175/1,000 gal. for commercial and industrial use (including schools, churches, boarding houses, etc.);
and $18.00 + 0.175/1,000 gal. for all regulated users

These rates are based on $0.175/1,000 gallons of waste measured at the metering station, up to a maximum average each month of 150 gallons per capita per day. Excess usage above this amount will be charged at $0.35/1,000 gallons. Any Logan City connections above the metering station shall be deducted at the same rate.

6. Regulated users must have a permit from the City of Logan to enable Logan to monitor wastes or substances that cause problems with collection and/or treatment systems (SEE SEWAGE PRETREATMENT ORDINANCE). Any charges for testing, sampling, or other charges to an individual regulated user, in addition to the $18.00 + $0.175/1,000 gal. including surcharge fees, will be billed and collected directly by Logan.

7. Rate Charges. It is agreed that fees charged to Second Party may be adjusted on the same basis as rates may be adjusted to Logan City users for capital and/or operation and maintenance costs for treatment and/or appropriate main line costs, unless special circumstances exist that would make collection and treatment of Second Party's wastes more expensive than Logan's waste, or if the rate, charged to Logan's users is subsidized by other Logan City funds or operations.

8. Capital Improvements. Capital improvement costs for repair, replacement or maintenance (other than routine maintenance) of lift stations and trunk lines from the Main Collection Point to the main 600 North trunk line shall be shared on the basis of the relative number of connections within each entity that are served by said trunk line and lift station appurtenances. All connections above the main collection shall participate on a per connection basis for main line costs above the main collection point.

Capital improvement costs for maintenance, repair or replacement of the treatment lagoons, outfall ditch and main 600 North trunk line shall be shared based on the relative number of connections from each entity.

These costs can be budgeted for and paid by Second Party or charged as mutually agreed upon by both parties.

9. If any part of this agreement is found to be in violation of law or unenforceable then this agreement shall become terminable by either party giving the other party a one (1) year written notice of its intent to so terminate.

10. Second Party and First Party agree that wherever practicable, uniform rules and regulations will be established, including but not limited to the discharge of harmful substances into the sewage system in excess of minimum standards prescribed; the use of food waste disposal units for domestic and commercial food wastes entering the sanitary sewer system; to prevent storm, surface or groundwater from entering the sewer system; and to provide adequate inspection of building, sewer and street construction to prevent such from entering the sewer system.

11. This Agreement shall remain in effect for a period of 20 years from the date hereof. It shall continue in effect for two-year periods thereafter unless terminated by either party by giving the other party two year's written notice.

12. Second Party agrees to adopt rules and ordinances identical to those of Logan as they presently exist and as they may from time to time be amended or added upon, governing the discharge of water or materials of any kind into Second Party's collection system and to be responsible for the administration and enforcement of said rules or ordinances. Nothing herein shall, however, require Second Party to require the removal by its residents of septic tanks, the use of which are discontinued when users connect to First Party's sewage collection system. If Second Party fails to enforce, or if any of its residents fail to enforce or comply with said rules or ordinances, then in that event, upon 48 hours written notice by Logan requesting compliance and/or enforcement, Logan may cease its acceptance of Second Party's waste at the collection point until enforcement or compliance is effected. If 48 hours appears too short a period within which Second Party or its residents could enforce or comply due to circumstances beyond their control, then Second Party may respond in writing to Logan within said 48-hour period stating what a reasonable period within which enforcement or compliance effected would be, setting forth in detail the facts and circumstances justifying the same. In no event shall the breach, failure to comply or enforce remain in existence for a period in excess of ninety (90) days.

13. All costs, damages, and expenses, including but not limited to attorney's fees and the reasonable value of Logan City equipment and employee time incurred by Logan because of Second Party or its residents' failure to abide by this agreement or failure to comply with applicable rules and ordinances regulating discharge of materials into the sewage collection system, shall be born and paid by Second Party.

14. Each party shall be responsible for their own collection system and trunk lines and each agrees to indemnify and hold the other harmless for loss, damage, demands, or claims of any kind arising from their own acts or neglect.

IN WITNESS WHEREOF, these presents are executed the day and year first above written.

CITY OF LOGAN

by _____
Mayor

ATTEST:

_____
City Recorder

CITY OF PROVIDENCE

by _____
Mayor

ATTEST:

_____
City Recorder

APPROVED AS TO FORM:

_____
Logan City Attorney

_____
Providence City Attorney

SEWAGE/ENG2

Kymber,

In the Addendum to Inter-City Sewage Treatment Service Agreement with Providence City that we are drafting, recommend the following language be incorporated, such that the paragraphs read as follows:

1. This agreement will be extended to the following location as described herein as Exhibit 1: Logan Crossroads Phase 1 Commercial Subdivision, with plans on file in the Logan City Engineer's office as prepared by Knighton and Crow P. C. These plans were approved by the City of Logan Engineer on August 11, 1999.

2. Providence will be responsible, at their own expense, for the installation of a new waste water meter (sewage) and the telemetry equipment, including power to operate it at the location described in Exhibit 1. Providence will also be required to connect the meter into the Logan City automated control system. The specifications for said water meter and installation shall be as described in the construction plans referenced as Exhibit 1. Upon completion of the installation of said water meter system and inspection and acceptance of same by the City of Logan, the water meter system shall be dedicated to the City of Logan. After dedication, Logan shall be responsible for all operation, maintenance and repairs to the waste water meter. except power. Providence City will provide electric power to the meter.

3. Providence City authorizes the City of Logan to install or have installed a storm drainage pipe in the Providence City easement, as described in Exhibit 1, page C6, Storm drain plan and profile. Providence City further agrees to perform or have performed any needed maintenance and repair on the storm drainage pipe located within said easement and to bill the City of Logan for the cost of repairs.

ADDENDUM TO INTER-CITY SEWAGE TREATMENT SERVICE AGREEMENT

This ADDENDUM to the Inter-City Sewage Treatment Service Agreement, dated the 20th day of September, 1988, by and between the City of Logan, a municipal corporation of the State of Utah, and Providence City, a municipal corporation of the State of Utah, is made and entered into this ___ day of November, 1999.

The provisions of this ADDENDUM are as follows:

1. This agreement will be extended to the following location as described in Exhibit 1. Exhibit 1 is defined and described as follows: The Logan Crossroads Phase 1 Commercial Subdivision Plat and accompanying construction plans which are on file in the Logan City Engineer's office as prepared by Knighton and Crow P.C. and approved by the City of Logan Engineer on August 11, 1999. Exhibit 1 is incorporated herein by reference and made fully a part of this Addendum.

2. Providence will be responsible, at their own expense, for the installation of a new wastewater (sewage) meter and the telemetry equipment, including power to operate it at the location described in Exhibit 1. Providence will also be required to connect the meter into the Logan City automated control system. The specifications for said wastewater meter and installation shall be as described in the construction plans referenced in Exhibit 1. Upon completion of the installation of said wastewater meter system and inspection and acceptance of same by the City of Logan, the water meter system shall be dedicated to the City of Logan. After dedication, Logan shall be responsible for all operation, maintenance and repairs to the wastewater meter, except power. Providence City will provide electric power to the wastewater meter.

3. Providence City authorizes the City of Logan to install or have installed a storm drainage pipe in the Providence City easement, as described in Exhibit 1, page C6: Storm Drain Plan and Profile.. Providence City further agrees to perform or have performed any needed maintenance and repair on the storm drainage pipe located within said easement and to bill the City of Logan for the cost of repairs.

4. Providence City agrees to inform Logan City Public Works Department of any new industries, businesses or any other commercial entities that could discharge materials that are subject to sewage pretreatment requirements, as published by Logan City. Providence City also agrees to require these businesses to obtain pretreatment permits from Logan City Permits and Compliance Division before they issue building

permits, and to allow Logan City Permits and Compliance Division to perform necessary inspections to assure the adequacy of the requisite pretreatment processes.

CITY OF LOGAN

By _____
Mayor

ATTEST:

_____
City Recorder

Approved as to Form:

_____
Logan City Attorney

PROVIDENCE CITY

By _____
Mayor

ATTEST:

_____
City Recorder

_____
Providence City Attorney