



Wastewater Impact Fee Facilities Plan & Impact Fee Analysis Update

Enoch City, Utah | January 2026



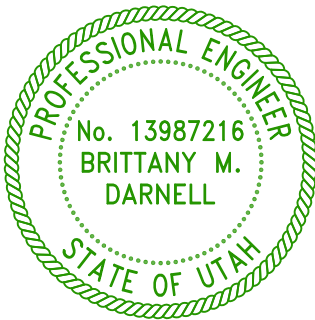
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ENOCH CITY

Wastewater Impact Fee Facilities Plan & Impact Fee Analysis Update

January 2026

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1 EXECUTIVE SUMMARY

Enoch City partnered with Sunrise Engineering to update its Wastewater Impact Fee Facilities Plan (IFFP), and Impact Fee Analysis (IFA). This update evaluates existing system conditions, projected growth, infrastructure needs, and financial capacity. It provides City leaders with guidance for maintaining reliable service while preparing for continued development.

Enoch is experiencing steady growth. Based on historic trends and coordination with City staff, an annual growth rate of 3.5 percent was used for planning. Growth projections are defined by fiscal year planning horizons. Equivalent Residential Units (ERUs) are projected to increase from 2,813 to 3,457 over the 5-year planning period and to 4,106 over the 10-year planning period. Long term buildout is estimated at approximately 10,775 ERUs, anticipated around fiscal year 2064. The ERU ratio to a residential connection for all non-residential connections is 1.5.

The wastewater collection system consists of approximately 60 miles of gravity sewer pipe. The City owns two lift stations and associated force mains, with one station currently active. All wastewater is conveyed to the Cedar City Regional Wastewater Treatment Facility, with treatment charges based on metered flows. One flow meter is currently operated on the outfall line.

A hydraulic model of the collection system was prepared using AquaTwin Sewer, incorporating current field data, GIS information, and projected flows based on population and ERU growth. Metered data indicate a peak usage rate of 319 gallons per ERU per day. Peak flows are estimated at 766 gallons per minute for the five year horizon and 910 gallons per minute for the ten year horizon. The model assumes pipelines operate at two thirds full under design conditions and identifies capacity constraints in portions of the trunkline.

Construction of a parallel trunkline from the outfall at 2300 West to Minersville Highway is recommended to provide adequate capacity for projected growth. Additional flow meters are also recommended to improve data reliability and future model calibration. Some locations may require upsizing at long term buildout and should be evaluated through future plan updates.

The financial analysis evaluates user rates, impact fees, and funding options for the recommended improvements. This analysis provides a recommended average monthly user rate of \$29.00 for residential connections and a rate of \$43.50 for non-residential connections. The maximum allowable impact fee, calculated from impact fee eligible project costs and the projected increase in ERUs over the next 20 years, is \$3,196.37 for residential connections and \$4,794.56 for non-residential connections.

A cash flow analysis demonstrates that the recommended improvements can be implemented with the proposed financing approach, which includes a loan through the Utah Department of Environmental Quality, Water Quality Board for the parallel trunkline project construction and a Planning Advance for the design. Impact fees can fully fund the growth-related portion of the recommended infrastructure.

2 INTRODUCTION

2.1 Purpose and Scope

Enoch City (City) has entered into an agreement with Sunrise Engineering, LLC to prepare this Wastewater Impact Fee Facilities Plan & Impact Fee Analysis (Plan). This Plan updates the prior Wastewater Impact Fee Facilities Plan & Impact Fee Analysis, dated June 2017, completed by Sunrise Engineering. The Plan provides community leaders with the information they need to make important decisions relating to the wastewater infrastructure as the City continues to grow and develop. The Plan includes information regarding the existing wastewater infrastructure, analyzes these facilities for adequacy, and makes recommendations to meet the projected demands.

It is important to note that unless specified as calendar years (CY), the dates referenced in this report follow City fiscal years (FY) beginning July 1st and extending to June 30th. The Plan focuses on the existing system in the current fiscal year (2026), along with the 5-year (FY 2031) and 10-year (FY 2036) planning horizons, as well as a buildout projection. Project costs and impact fee calculations are based on a 20-year (FY 2046) planning horizon.

The Plan contains recommendations for improvements to the wastewater system and a possible financing plan as a potential means to fund the recommended improvements.

The Plan also analyzes the existing user rates and impact fees as a possible means of supporting the recommended system improvements. The user rates and impact fees recommended within the Plan will allow Enoch City to maintain the level of service that is required of the system for the present time and over the defined planning periods.

The Plan serves as the City's Impact Facilities Plan and includes an Impact Fee Analysis.

2.2 Background Information

Enoch City is a growing rural community in Iron County, located just north of Cedar City. Its current and future economic development benefits significantly from Interstate 15, which borders the City to the east. Enoch acknowledges its pioneer heritage from the 1800s, a theme reflected in the City's seal and community identity.

The surrounding terrain is generally flat to gently sloping, with elevations that transition from the mountains in the east to the valley floor in the west. The Dixie National Forest, Brian Head Ski Resort, and Cedar Breaks National Monument lie to the east, offering residents and visitors access to a variety of recreational opportunities and scenic landscapes.

Considerable growth and increases in economic development have been observed over the past several decades; the U.S. Census Bureau (CY 2020) reports a population of 7,374. Population growth is projected to continue increasing in the coming years.

3 GROWTH AND SYSTEM USER ANALYSIS

3.1 Planning Horizon

The agreement between Sunrise Engineering and Enoch City identified two planning periods where the model results dictate recommended improvements: a 5-year and a 10-year planning period. The Plan assumes the first fiscal year of the planning period is 2027, with the 5th year as 2031 and the 10th and final year as 2036.

Rule R317-3-2 of the Utah Administrative Code (R317) specifies that wastewater facilities shall be designed for the estimated ultimate tributary population or the 50-year planning period, whichever requires a larger capacity. Therefore, it is necessary to project growth over the 50-year period and size recommended improvements accordingly.

3.2 Growth Rate

An essential element in the analysis of the City's wastewater system and development of a facilities plan is the projection of the City's population growth rate on an annual basis. This projection helps estimate future demands for the wastewater system for the length of the planning period. All planning for the future should be based on the expected population growth.

Projecting the number of future wastewater connections with any degree of accuracy can be a subjective process. An effective method of estimation is by analyzing available population records and using the data to find growth trends. This study considered U.S. Census Bureau data and wastewater connection data from the City's CY 2022-2024 billing summaries to evaluate the growth trends and provide a projection of future growth. Table 1 shows the historic population and annual growth rate based on Census counts from CY 1980 to 2020.

Table 1: US Census Growth Data

Census Growth Data		
Year	Population	Annual Growth Rate
1980	678	-
1990	1,947	11.1%
2000	3,467	5.9%
2010	5,803	5.3%
2020	7,374	2.4%

In recent years, the community has grown steadily. At the time of the previous wastewater master plan, the City anticipated growth between 1.5% and 3% between the calendar years of 2016 and 2025. Based on historic growth, it is reasonable to assume that Enoch will continue to experience similar growth.

From analysis of the Census and historical wastewater connection data provided by the City, the average growth rate was determined to be approximately 4%. **Upon concurrence with City staff, a growth rate of 3.5% was selected for the Plan.**

3.3 Population Projections

Based on the estimated growth rate above, the future population estimates the City will need to plan for were calculated using the compound growth formula as shown below:

Equation 1: Compound Annual Growth Formula

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

where:

- F = Future Value
- P = Present Value
- i = Growth Rate
- n = Years

Equation 1 was used to project the community population for each fiscal year in the planning period. Table 2 provides a summary of the results of the population projection. The full results are included in Appendix A.

Table 2: Population Growth Estimates

Population Growth Estimates		
Year	Est. Growth Rate	Est. Population
2026	3.50%	9,063
2031	3.50%	10,764
2036	3.50%	12,785
2046	3.50%	18,032
2076	3.50%	50,612

A visual representation of the population projections over time is shown in Figure 1.

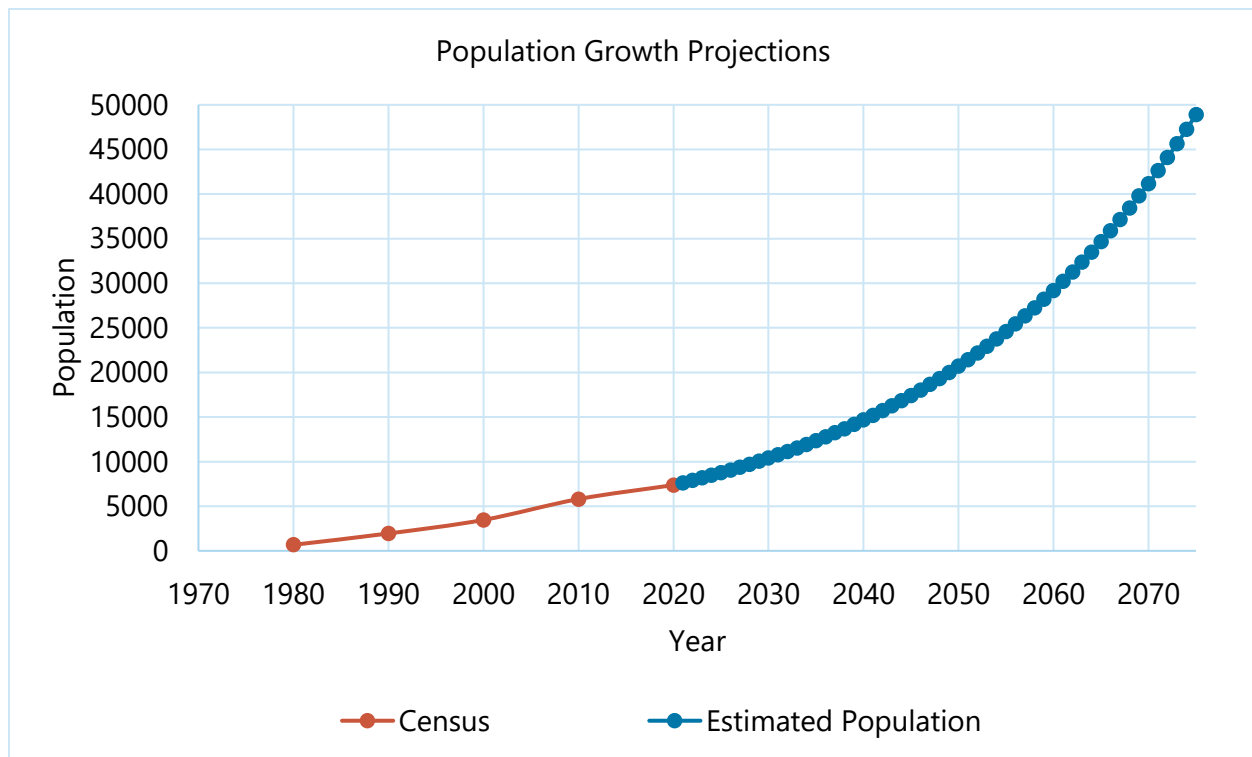


Figure 1: Population Growth Projections

3.4 Equivalent Residential Units

An Equivalent Residential Unit (ERU) value allows the comparison of usage between a residential connection and other classifications. In order to properly analyze the system usage, connections are converted to ERUs. However, the City does not meter wastewater usage per connection. This Plan assumes that wastewater usage would follow the same relative patterns as culinary water, so the ERU calculations are based on culinary water connections and usage.

The City provided culinary water connection and usage data from CY 2022-2024. This data is summarized in Appendix B. Data was not provided for CY 2025. Connections were reported as either agricultural, commercial, residential, county, city, institutional, or unclassified. For this Plan, connection types were classified as either residential or non-residential. Table 3 shows a summary of the number of connections by type.

Table 3: Culinary Water Connections by Type

Culinary Water Connections By Type			
Year	Residential	Non-Residential	Total
2022	2,382	97	2,479
2023	2,450	83	2,533
2024	2,564	105	2,669

From the provided data, the average annual usage per connection in gallons for each connection type was determined to be as shown in Table 4.

Table 4: Average Annual Gallons Usage Per Connection

Average Annual Gallons Usage Per Connection			
Year	Residential	Non-Residential	Total
2022	166,243	390,227	175,007
2023	161,851	222,042	163,824
2024	192,982	283,687	196,550

An ERU ratio is calculated by dividing the average daily culinary water usage per the respective connection by the average daily usage per residential connection. The ERU ratios were calculated, and the results for each of the fiscal years are summarized in Table 5.

Table 5: ERU Ratios by Connection Type

ERU Ratios		
Year	Residential	Non-Residential
2022	1.00	2.35
2023	1.00	1.37
2024	1.00	1.47

A non-residential ERU ratio of 1.5 was selected for the Plan, as it closely aligns with the ratio calculated for FY 2024. This means that the average non-residential connection uses 1.5 more culinary water than the average residential connection. This Plan assumes that wastewater would follow the same relative flow ratio between residential and non-residential use.

Multiplying the number of connections by the ERU ratio for the connection type results in the number of ERUs. A summary of the ERUs is provided in Table 6.

Table 6: Number of ERUs by Connection Type

# of ERUs			
Year	Residential	Non-Residential	Total
2022	2,382	228	2,610
2023	2,450	114	2,564
2024	2,564	154	2,718

The number of ERUs for each fiscal year of the planning horizon was projected from the number of ERUs in FY 2024 at the predetermined annual growth rate of 3.5%. A summary of these estimates is provided in Table 7 and the full results are included in Appendix A.

Table 7: ERU Growth Estimates

ERU Growth Estimates		
Year	Est. Growth Rate	Est. Total ERU's
2026	3.50%	2,911
2031	3.50%	3,457
2036	3.50%	4,106
2046	3.50%	5,793
2076	3.50%	16,260

3.5 Buildout Projections

While population growth is essential to determining system needs over a specific planning period, eventually the available lots within the current City boundaries may reach maximum capacity. If the maximum number of developable lots is reached earlier or later than projected, future improvements to support growth may need to be implemented sooner or later. Because of this, buildout is considered.

Area within the City was first split into developed and undeveloped acreage by zoning using the City's current boundary. The acreage of land with an occupancy status was subtracted from the total to get the acreage of undeveloped land. Dividing the undeveloped acreage in each zone by the minimum lot size specified in the City's code for the respective zones produced an estimated number of future connections. Adding the number of existing and estimated future connections gave the estimated total possible connections. The total developed and undeveloped area by zone and estimated maximum possible connections by zone at buildout are given in Table 8.

Table 8: Wastewater Connections Buildout by Zoning

Buildout Connections by Zone						
Zoning Description	Zone Total Acres	Zone Developed Acres	Zone Undeveloped Acres	Existing Connections	Future Connections	Total Possible Connections
Community Commercial (C-C)	435	139	296	58	114	172
Mixed Residential (MXR_18)	45	41	4	47	100	147
Mobile Home Park (MHP)	10	10	0	41	0	41
Multiple Residential (M-R-2)	62	18	44	31	76	107
Neighborhood Commercial (N-C)	5	5	0	3	0	3
Professional Office (P-O)	1	1	0	1	0	1
Regional Commercial (R-C)	4	4	0	1	0	1
Research Industrial Park (R/I-P)	430	193	237	33	40	73
Residential 11 (R-1-11)	887	128	759	301	3,036	3,337
Residential 18 (R-1-18)	2,587	1,656	931	2,247	4,039	6,286
RV Park (RVP)	5	4	1	1	1	2
Rural Residential 1 (R-R-1)	468	139	329	43	358	401
Rural Residential 5 (R-R-5)	188	112	76	10	22	32
Total All Zones	5,127	2,450	2,677	2,817	7,786	10,603

Each zone was then classified as either residential or non-residential. The number of total possible connections per zone was multiplied by the respective ERU ratio to determine the total possible ERUs for the current zoning. The results are provided in Table 9.

Table 9: Buildout ERUs by Zone

Buildout ERUs by Zone				
Zoning Description	Connection Type	Total Possible Connections	ERU Ratio	Total Possible ERUs
Community Commercial (C-C)	Non-Residential	172	1.5	258
Mixed Residential (MXR_18)	Residential	147	1.0	147
Mobile Home Park (MHP)	Residential	41	1.0	41
Multiple Residential (M-R-2)	Residential	107	1.0	107
Neighborhood Commercial (N-C)	Non-Residential	3	1.5	5
Professional Office (P-O)	Non-Residential	1	1.5	2
Regional Commercial (R-C)	Non-Residential	1	1.5	2
Research Industrial Park (R/I-P)	Non-Residential	73	1.5	110
Residential 11 (R-1-11)	Residential	3,337	1.0	3,337
Residential 18 (R-1-18)	Residential	6,286	1.0	6,286
RV Park (RVP)	Non-Residential	2	1.5	3
Rural Residential 1 (R-R-1)	Residential	401	1.0	401
Rural Residential 5 (R-R-5)	Residential	32	1.0	32
Total All Zones		10,603		10,731

It is important to note that these projections do not consider any areas that the City may annex in the future from the City's Tier 2 zoning boundary. The buildout is also based on the current City code regarding minimum lot size per zone. Potential zoning code revisions could increase or decrease the maximum possible connections.

3.6 Wastewater Flow Projections

The City provided FY 2022-2024 wastewater flow data from their existing flow meter for analysis. Data was not provided for FY 2025. The data provided, which is included in Appendix B, consisted of total measured flow on a monthly basis, and peak instantaneous flow. The monthly flow data was averaged out to gallons per day (gpd) and gallons per minute (gpm) flow rates. The average daily usage and peak flow values in FY 2024 were used for this Plan and are provided in Table 10.

Table 10: 2024 Flow Data

2024 Flow Data		
Average Daily Usage	298,508	gpd
Average Daily Usage	207	gpm
Measured Peak Flow	597	gpm

Maximum flow data, or peak flow was used for projecting flows in the model because a wastewater system is expected to function properly during peak flows. A peaking factor was calculated to be by dividing the measured peak flow rate by the average flow rates and is shown in Table 11.

Table 11: Peaking Factor Calculations

Peaking Factor Calculation		
Measured Peak Flow (2024)	597	gpd
Average Daily Usage (2024)	207	gpd
Peaking Factor	2.9	

To project future wastewater flow, the usage was related to the ERU projections. The results are summarized in Table 12. The average daily flow in FY 2024 was divided by the number of ERUs calculated for that year, resulting in an average daily usage. The average daily usage per ERU was then multiplied by the peaking factor to get a peak daily usage of 319 gallons per ERU. The existing level of service (LOS) for this Plan is defined as the condition in which the wastewater collection system pipes do not exceed two-thirds (2/3) of their full-flow capacity during the peak daily usage of 319 gallons per ERU.

Table 12: Existing Usage per ERU

Usage per ERU		
Average Daily Usage	298,508	gallons
Number of ERUs	2,718	
Average Daily Usage per ERU	110	gallons
Calculated Peaking Factor	2.9	
Peak Daily Usage per ERU	319	gallons

Multiplying the usage per ERU by the number of ERUs projected each year gives the peak flows for each year in the planning period. The peak flows were calculated and converted to units of gpm. A summary of the projected flows for each planning period are shown in Table 13 and the full results are included Appendix C.

Table 13: Peak Flow Estimates for Each Planning Period

Peak Flow Estimates		
Year	ERUs Estimated	Peak Flow (gpm)
2026	2,911	645
2031	3,457	766
2036	4,106	910
2076	16,260	3,602

4 EXISTING FACILITIES

4.1 Gravity Pipe Network

Wastewater collection systems are generally made up of a network of discharge and flow lines, drains, inlets, valve works and connections that transport domestic and industrial wastewater flows to regional treatment facilities. The most significant component of the wastewater system is the gravity collection pipe network. Gravity flow transports wastewater along downward sloping pipelines using the force of gravity. The slope and size of the pipeline are selected to maintain required flow and velocity without pressurizing the pipeline. Gravity pipe networks are the most effective and desirable means of moving wastewater effluent since pumping energy is not required.

The existing gravity wastewater collection system primarily consists of 8-inch collectors and interceptors but also includes some larger interceptor and outfall lines ranging from 10-inch to 24-inch in diameter. An exhibit of the existing wastewater collection system is included in Appendix D.

4.2 Force Mains & Lift Stations

In locations where topography, density of existing utilities, lack of adequate rights-of-way or other circumstances limit the continuation of a gravity wastewater system, it becomes necessary to construct pressurized force mains to route wastewater over or around obstacles. Force mains are associated with wastewater lift stations; the two are normally designed in conjunction with one another. Because of the perpetual pumping energy and additional maintenance required to operate lift stations, these facilities are normally avoided if possible.

There is one active force main and accompanying lift station, serving Phases 1 & 2 of the Valley Gate Estates subdivision which is lower in elevation compared to the existing gravity system. Additionally, there is a force main and accompanying lift station in the northern section of the City to accommodate a development. The development within the service area of the lift station ceased because of unstable ground conditions. Development is not anticipated to resume in this area. As a result, the lift station and force main remain unused.

4.3 Treatment Systems

The City does not operate its own wastewater treatment facility but is a stakeholder in the Cedar City Regional Wastewater Treatment Facility (CCRWTF). Flow from Enoch City is metered and a fee is issued to the City on a monthly basis for their portion of the facility's operation and maintenance costs. This plan does not recommend that the City construct or operate their own treatment plant.

4.4 Metered Flow Rate

The City has one meter, which is located in the middle of the outfall line, outside of the City limits. The meter takes a measurement of flow every 15 minutes.

5 MODEL ANALYSIS

5.1 Introduction

As part of the Wastewater Impact Fee Facilities Plan & Impact Fee Analysis, dated June 2017, field measurements had been collected for each manhole and pipe that existed at the time. The rim elevation of each manhole had been recorded using survey-grade GPS equipment, and the depth down to flow, or invert elevation, had been measured. Pipe diameters had been verified concurrently with the invert measurements. These values were incorporated into the City's Geographic Information System (GIS) database, providing a reliable foundation for the hydraulic model developed by Sunrise Engineering during that project.

Since 2017, Sunrise Engineering has maintained updated sewer and GIS models for the City's wastewater collection system. As new developments are planned, design parameters and critical values from the plans are incorporated into the GIS and analyzed in the sewer model to confirm that the proposed infrastructure meets capacity and design standards.

The modeling software used for this analysis is AquaTwin Sewer, developed by Aquanuity Inc. AquaTwin Sewer is a hydraulic and hydrologic simulation tool that provides a spatially representative interface for data input, calibration, and visualization of results. GIS data collected by Sunrise Engineering was processed and formatted to allow seamless import into the model. Attributes such as pipe invert elevations, lengths, diameters, slopes, and associated manholes or junctions were imported into the model.

5.2 Demand Calculations

The demands for the existing model were based on the 2026 peak flow estimate shown in Table 13. These flow demands were distributed throughout the model by dividing the peak flow by the number of manholes within areas contributing to the flow. This value was assigned as inflow directly to each of the manholes.

Future flow demands were based on the peak flow estimates shown in Table 13, the ERU estimates shown in Table 7, and the estimate of ERUs at buildout shown in Table 9. It was assumed that demand from 15% of the new ERUs would be received directly by the existing infrastructure and added to the inflow value previously assigned to the existing manholes. The remaining 85% of new ERU flow demands were assigned to undeveloped areas beyond the limits of the existing system, but within the City's current boundary. New gravity pipe and manholes were modeled in these areas so that flow demands could be represented in the model. These new branches of infrastructure were included for modeling purposes only and are not intended to be a design for the future wastewater network.

Distribution of future flow demand to the new manholes modeled was performed by first calculating the area of undeveloped land by zoning classification within the City boundary that is assumed to contribute flow to the new manholes. The area calculations are provided in Table 14.

Table 14: Developable Acres by Zoning Assumed to Contribute Flow to New Manholes

Developable Acres by Zoning	
Zoning Classification	Acres
C-C	272
R-1-11	579
R-1-18	427
R-R-1	396
R-R-5	76
N-C	3
Total	1,753

The percentage of the area within each zone relative to the total area was calculated and the approximate percentages are shown in Table 15.

Table 15: Percentage of Total Area in Each Zone

Percentage of Total Area in Each Zone	
Zoning Classification	Percent Area
C-C	15.5%
R-1-11	33.0%
R-1-18	24.4%
R-R-1	22.6%
R-R-5	4.3%
N-C	0.2%

The percentages were then multiplied by the estimated number of new ERUs to determine the number of ERUs expected in each zone. Table 16 shows the rounded projection of ERUs in each zone for each planning scenario.

Table 16: ERU Projection by Zoning for Each Model Scenario

Number of ERUs by Zoning			
Zoning Classification	ERUs		
	5-Year	10-Year	Buildout
C-C	72	157	1,030
R-1-11	153	335	2,194
R-1-18	113	248	1,622
R-R-1	105	230	1,502
R-R-5	20	44	286
N-C	1	2	13
Total	464	1,016	6,647

For each new manhole, a percentage of the area of each zone to the total area contributing to the manhole was calculated. This ratio was then multiplied by the number of ERUs expected in each zoning category to determine how to allocate the future ERUs across the developable areas. Appendix E shows a delineation of wastewater basins with the flow distribution across the basins.

5.3 Assumptions and Design Criteria

Design criteria applied within the AquaTwin model included the assumption that the pipe network operates at two-thirds full under design flow conditions, meaning that when the depth of the pipe is two-thirds (66.7%) full. This depth represents a pipe at 80% of its flow capacity. Figure 2 shows this relationship between the depth of two-thirds and the associated flow capacity.

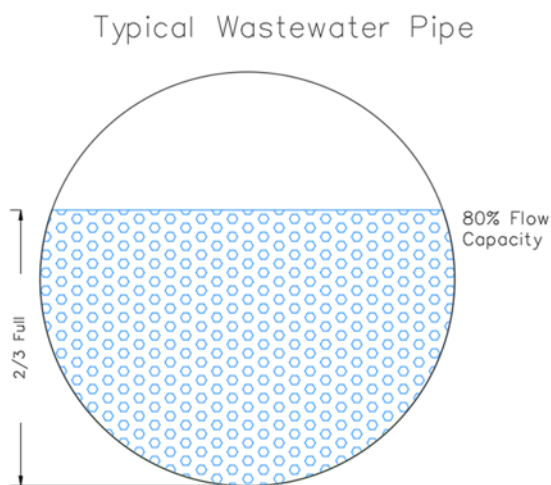


Figure 2: Relationship Between Flow Depth and Capacity

Another input for the system included a Manning's roughness coefficient. The Manning's roughness coefficient or "n" is a value used in hydraulics to represent how "smooth" or "rough" the inside of a pipe is. It directly affects the capacity of the pipe. A lower coefficient indicates a smoother interior, allowing water to flow more easily and increasing the pipe's capacity, while a higher coefficient indicates a rougher interior, which slows the flow and reduces capacity. Section 3.4 of Enoch City Engineering Standards, dated April 2023, state that a "n" value of 0.013 should be used for design of wastewater pipes. However, this value is considered highly conservative, as many manufacturers recommend a value of 0.009 for plastic pipe. With approval from the City staff, a value of 0.009 was used for this analysis, since the City's existing network is primarily composed of PVC pipe.

It is important to note that the future flow assignment detailed in Section 5.2 assumes that 15% of the future flow occurs as infill to the existing manholes and that the remainder is assigned evenly across developable areas. The assumptions of potential development and flow routing are highly subject to change based on actual development.

5.4 Model Results

Exhibits detailing the resulting pipe capacities for each planning period are provided in Appendix F.

6 RECOMMENDED IMPROVEMENTS

The model analyses identified future potential deficiencies that should be remedied to support continued growth. The recommended improvements are intended to allow the wastewater system to support future growth while maintaining the existing level of service. Based on the results of the model analysis, the following list of recommended improvements within each planning period is provided. A map showing the recommended improvements is included in Appendix G.

6.1 5-Year Planning Window Improvements

6.1.1 Parallel Trunkline (Outfall to Minersville Highway)

The model results indicate one significant improvement to properly manage wastewater flow within the City. Portions of the existing trunk line between the outfall at 2300 West and Minersville Highway approach or reach their allowable design capacity, and one segment is exceeding capacity. These portions cannot sustain additional flows brought on by future growth. It is recommended that additional capacity be provided for this trunkline.

This Plan proposes the installation of a 24" parallel pipeline from the outfall location at 2300 West to Minersville Highway. Where the outfall line is in continuous use, the addition of a parallel pipeline will mitigate substantial costs associated with bypass pumping that would otherwise be necessary to upsize the existing line in individual sections.

6.1.2 Install Additional Wastewater Flow Meters

The flow data used for this Plan comes from a single meter on the outfall line. Installing additional meters at critical locations, as identified in Appendix G, would allow confirmation of the existing meter data and improve the calibration and accuracy of the wastewater model.

6.1.3 Impact Fee Analysis Update

It is recommended that the City update their IFFP at least every 5 years, or more frequently if growth trends warrant.

6.2 10-Year Planning Window Improvements

The model results do not indicate a need for system improvements within the 10-year planning period if the 5-year improvement projects are implemented. It is recommended that the City continue to update its IFFP at least every five years, or as necessary depending on growth.

6.3 Buildout Improvement Considerations

The buildout scenario model results highlight sections that may require additional capacity in the future. These sections are detailed below. It is recommended that these areas be monitored as growth continues, and the need for project implementation be evaluated in future IFFP updates.

6.3.1 Outfall Trunkline (Minersville Highway to 5200 N)

The model results suggest that the design capacity of the outfall trunkline could be exceeded upstream of the 5-year improvement project extents. It may become necessary to replace the line from Minersville Highway to 600 E and along 600 E to 5200 N.

6.3.2 5200 N (600 E to Veterans Memorial Drive)

Portions of the line on 5200 North between 600 E and Veterans Memorial Drive may approach or exceed design capacity. Upsizing this line may be required.

6.3.3 600 E (Midvalley Road to 5020 N)

One portion of the line on 600 E may exceed design capacity, and several segments are approaching capacity. Upsizing these sections may be necessary.

7 FINANCIAL ANALYSIS

7.1 Opinion of Probable Cost

An Engineer's Opinion of Probable Cost (EOPC) has been prepared for each of the improvements recommended within the 5-year planning period and can be found in Appendix H. A summary of the anticipated project costs provided in current FY 2026 dollars as well as with inflation based on the fiscal year of estimated implementation at an inflation rate of 3% is provided in Table 17.

Table 17: Cost Estimates for Recommended Improvements

Recommended Improvement Costs			
Project	FY 2026 Cost	Est. Implementation Year	Inflated Costs
Design & Incidentals - Parallel Trunkline (Outfall to Minersville Hwy)	\$ 627,500.00	2027	\$ 646,000.00
Construction - Parallel Trunkline (Outfall to Minersville Hwy)	\$ 5,772,400.00	2028	\$ 6,124,000.00
Install Additional Wastewater Flow Meters	\$ 396,000.00	2029	\$ 433,000.00
Impact Fee Analysis Update (2031)	\$ 55,000.00	2031	\$ 64,000.00
Impact Fee Analysis Update (2036)	\$ 55,000.00	2036	\$ 74,000.00
Total	\$ 6,905,900.00		\$ 7,341,000.00

7.2 Financing Plan

The City has submitted a funding application to the Utah Department of Environmental Quality, Water Quality Board (Board) for financing the 5-year Parallel Trunkline project. This funding package could cover the cost of construction. The initial planning costs of design and incidentals for the project were removed from the following financing plan, as they are expected to be paid with a Planning Advance from the Board and self-participation.

The terms proposed by the Board include a loan of \$5,485,800.00 at a rate of 3.6% with a 20-year term. The remainder of the project costs would be covered through self-participation. This self-participation is anticipated to be sourced using impact fee funds. This funding package results in a total loan payment of \$7,789,752.23, with an annual payment of approximately \$389,487.61. The proposed financing plan is shown in Table 18.

Table 18: Possible Financing Plan for Parallel Trunkline Construction

POSSIBLE FINANCING PLAN				
Construction - Parallel Trunkline (Outfall to Minersville Hwy)				
Project Cost at Implementation				\$ 6,124,000.00
Proposed Funding	Percentage	Interest Rate	Term in Years	Principal
Self Participation	10.42%			\$ 638,200.00
Grant	0%			\$ -
Loan	89.58%	3.6%	20	\$ 5,485,800.00
Total Loan Payment with Interest				\$ 7,789,752.23
Annual Loan Payment				\$389,487.61
Total Project Cost (Self Participation + Total Loan Payment)				\$ 8,427,952.23

The Install Additional Wastewater Flow Meters project and future Impact Fee Analysis Updates are not expected to require external financing.

7.3 Existing User Rate

In general, revenues generated must be sufficient to cover the expenses incurred by the construction, maintenance, operation, and administration of the wastewater system. Anticipated expenses include debt services, insurance, wages and benefits, professional fees, and other miscellaneous items.

The City currently has three user rate fees, which are provided in Table 19.

Table 19: Existing Monthly User Rates

Existing Monthly User Rates	
Description	Fee
Class I Residential	\$25
Commercial	\$25 per set of fixtures (sink & toilet)
Residential Connection Outside City Limit	\$30

7.4 User Rate Analysis

A user rate analysis was performed to determine the user rate required to cover the wastewater system expenses. The 5-year Parallel Trunkline project and future Impact Fee Analysis Updates are assumed to be paid for using impact fees (see Section 7.7). The additional meter installation project is assumed to be paid with reserves in the wastewater fund. Therefore, no additional costs are added to the user rates.

An average user rate was calculated by determining the total annual operating, non-operating, and debt service expenses and then subtracting income from other sources, such as connection fees, impact fees, and existing fund balance appropriations. The result is the amount of expenses that must be covered by user rates. This value was then divided by the projected number of ERUs by 12 months to calculate a monthly rate per ERU.

A user rate analysis was performed for FY 2027 and is included in Appendix I. It was determined that the revenues are sufficient for the current expenses. A user rate analysis was also performed for FY 2028 to capture the FY 2028 bond payment for the Parallel Trunkline project. The average user rate per ERU required to cover estimated expenses was determined to be \$29.00. The full FY 2028 user analysis is provided in Table 20.

It is recommended that the user rates be billed based on the connection type as either residential or non-residential. The current user rate of \$25.00 per residential connection would be increased to \$29.00. Based on the non-residential ERU ratio of 1.5, as determined in Section 3.4, it is recommended that non-residential connections pay a rate that is 1.5 times the residential rate of \$29.00, which would be \$43.50 per connection.

To keep up with inflation and increased costs due to system growth, it is encouraged to increase user rates annually.

Table 20: FY 2028 User Rate Analysis

FY 2028 USER RATE ANALYSIS	
EXPENSES:	
Salaries and Wages	\$269,925.04
Employee Benefits	\$148,239.32
Dues and Memberships	\$109.73
Travel and Training	\$2,743.14
Supplies and Materials	\$3,840.40
Repair and Maintenance Equipment	\$4,937.65
Fuel	\$10,972.56
Utilities	\$2,194.51
Telephone	\$877.81
Postage	\$7,132.17
Uniform Allowance	\$1,097.26
Shop	\$1,097.26
Yard	\$1,097.26
Payment Transaction Fees	\$12,069.82
Raising Manholes	\$2,743.14
Treatment Fee - Cedar City	\$175,561.00
Computer Support	\$6,583.54
Depreciation	\$181,047.28
Office Equipment	\$21,945.13
Interest Expense	\$7,680.79
Renewal and Replacement Fund (5%)	\$43,094.74
SUBTOTAL EXPENSES	\$904,989.52
EXISTING DEBT SERVICE	
2018 GO Sewer Revenue Bonds	\$21,160.50
SUBTOTAL EXISTING DEBT SERVICE:	\$21,160.50
NEW DEBT SERVICE	
FY 2027 Bond (Trunkline Construction)	\$389,487.61
Bond Reserve (Payment/10)	\$38,948.76
SUBTOTAL NEW DEBT SERVICE:	\$428,436.37
TOTAL EXPENSES:	\$1,354,586.40
OTHER INCOME (BESIDES USER RATES)	
Connection Fees	\$26,250.00
Impact Fees (0.5 Growth Factor Applied)	\$167,809.68
Transfer from Impact Fee Fund for Project Costs	\$75,500.00
TOTAL OTHER INCOME:	\$269,559.68
EXPENSES - OTHER INCOME	\$1,085,026.72
ERUs (FY 2028)	3118
Average Monthly Sewer User Rate per ERU	\$29.00
TOTAL ANNUAL INCOME:	\$1,354,586.40

7.5 Cash Flow Analysis

A cash flow analysis for the wastewater system over a 20-year planning horizon was completed to show how the recommended improvements within the planning horizon could be implemented, to analyze the continued viability of proposed user rates, and to illustrate possible trends in impact fee and cash fund balances. Initial data for the cash flow analysis is based on Enoch City's financial audits retrieved from the Utah State Auditor's website for FY 2023-2025. Values projected through the analysis are based on growth, interest, and inflation trends determined during the study. It should be noted that the analysis is a general forecast only and will vary with the speed and pattern of growth and development in the City. The full cash flow analysis is given in Appendix J.

The first section of the cash flow, entitled "Wastewater System Information," contains the basic data upon which many of the values in the cash flow spreadsheet are generated. Of note are the projected growth rate, assumed inflation rates, user rates, impact fees, connection fees, and the projected number of new ERUs for the coming fiscal years. Most of the revenue and expense increases in later sections of the cash flow are generated from the impact fees, billing rates, and ERU values based on assumed growth and inflation rates. User rates were projected assuming an annual increase of 3% for inflation.

The next section of the cash flow is the revenues section, classified as either operating or non-operating income. This section quantifies all revenues generated by the wastewater system, whether through impact fees, user rates, connection fees, transfers from other funds, and interest earned on deposited funds. To be conservative, interest income was not projected in the analysis, and it was assumed that only half of the impact fees are collected.

The following section is the expenses section, which quantifies all expenses incurred by the wastewater system. Included in this section are operating and non-operating costs, new debt service costs, project costs, and other miscellaneous expenses. Future expenses were projected, assuming an annual increase of 3% for inflation and 1.75% to account for increases to operating costs due to system growth (half of the 3.5% projected population growth), resulting in a combined total annual increase of 4.75%.

The difference between the total revenues and the total expenses represents the net cash flow for the system. Cash on hand is calculated as the sum of cash on hand from the previous year and the net cashflow. The amount set aside annually for a renewal and replacement fund is 5% of the operating and on-operating expenses. A renewal and replacement fund is a fiscally responsible method recommended for systems to prepare for replacements as the system ages.

The final section of the cash flow analysis is a system improvements implementation schedule for the next 10 years, showing how the recommended improvement projects were incorporated into the cash flow analysis.

It is important to note that impact fees collected for eligible project costs and payments for the FY 2028 bond are both spread over a period of 20 years. Bond payments will be the same each

year, but impact fee collections will vary over time because the number of ERUs are assumed to grow exponentially. As a result, impact fee revenue will be lower in the early years and higher in later years. In the early years, annual impact fee collections will not be sufficient to fully cover the bond payment. For the purposes of this Plan and maintaining positive cash flow, it was assumed that the difference will be paid using user rates and impact fees previously collected and held in the fund. The amounts to be paid from the impact fee fund are shown as Fund Balance Appropriations under the Non-Operating Income section.

The cash flow also assumes the maximum allowable impact fee is collected in FY 2027, before bond payments begin in FY 2028. These collections are added to the impact fee fund to support future bond payments, which is shown as an Increase to Impact Fee Fund under New Debt Service.

7.6 Existing Impact Fee

Enoch City currently charges a wastewater system impact fee of \$738.38 per residential connection or ERU.

7.7 Impact Fee Analysis

An impact fee analysis was performed based on the EOPCs, estimated year of implementation, inflation, and impact fee eligibility of proposed improvements. A summary of the impact fee analysis is provided in Table 21.

Table 21: Impact Fee Analysis

IMPACT FEE ANALYSIS						
Project	FY 2026 Estimated Cost	Implementation Year	Inflated Costs	Financed Costs	% Impact Fee Eligible	Eligible Costs
Design - Parallel Trunkline (Outfall to Minersville Hwy)	\$ 627,500.00	2027	\$ 646,000.00	\$ -	100.00%	\$ 646,000.00
Construction - Parallel Trunkline (Outfall to Minersville Hwy)	\$ 5,772,400.00	2028	\$ 6,124,000.00	\$ 8,427,952.23	100.00%	\$ 8,427,952.23
Install Additional Wastewater Flow Meters	\$ 396,000.00	2029	\$ 433,000.00	\$ -	0.00%	\$ -
Impact Fee Analysis Update (2031)	\$ 55,000.00	2031	\$ 64,000.00	\$ -	100.00%	\$ 64,000.00
Impact Fee Analysis Update (2036)	\$ 55,000.00	2036	\$ 74,000.00	\$ -	100.00%	\$ 74,000.00
Total Impact Fee Eligible						\$ 9,211,952.23
Current ERUS (2026)						2,911
Projected ERUS (2046)						5,793
Number of New ERUs						2,882
Maximum Impact Fee (Total Eligible Cost/ERU)						\$ 3,196.37

Because the Parallel Trunkline project is solely to support additional growth, the design, incidentals, and construction costs are all 100% impact fee eligible. This means that the entire project can be funded with impact fees. The future Impact Fee Facilities Plan and Impact Fee Analyses will be commissioned to study, among other things, the effects of new growth on the system; Impact Fee Facilities Plans and Impact Fee Analyses are generally considered to be 100% Impact Fee eligible. Eligible costs were calculated by multiplying the inflated probable and financed costs by the impact fee eligible percentages.

The maximum allowable impact fee for the wastewater system is \$3,196.37 per ERU. This value was calculated by dividing the total impact fee eligible cost by the number of new ERUs projected to connect to the system over a 20-year period. This is related to a residential impact fee of \$3,196.37, and a non-residential fee at the same assumed ERU ratio of 1.5 of \$4,794.56.

7.8 Impact Fee Related Items

In general, it is recommended to update this Impact Fee Facilities Plan and Impact Fee Analysis at least every five years. However, if future growth and development differ significantly from the assumptions used in this plan, more frequent updates may be warranted.

City staff should be made aware that, in conformance with Utah Administrative Code 11-36a-602, impact fees can generally only be expended for a system improvement that is defined in the Impact Fee Facilities Plan, only for the specific public facility type for which the fee was collected (i.e., wastewater impact fees cannot be used for culinary water projects). Additionally, impact fees in Utah must be expended or encumbered for a permissible use within six years of receipt unless section 11-36a602(2)(b) of the code applies. Additionally, City staff should ensure that proper accounting (tracking each fee in and out) occurs in accordance with section 11-63a-601.

In accordance with Utah Administrative Code 11-36a-306, this analysis includes a certification of the impact fee analysis, located in Appendix K.

8 REFERENCES

Enoch City. (2023, April). Enoch City Engineering Design Standards & Details [PDF].
https://www.enochcityut.gov/uploads/3/0/3/1/30314955/enoch_city_engineering_design_standards__details_4-17-2024.pdf

U.S. Census Bureau. (2020). Decennial Census. Retrieved December 3, 2025, from
<https://data.census.gov/table/DECENNIALPL2020.P1?g=160XX00US4923200>.

Utah Administrative Code R317. Retrieved December 3, 2025, from <https://adminrules.utah.gov/>

APPENDIX A

Growth Estimates

Population Growth Estimates		
Year	Est. Growth Rate	Est. Population
2020	-	7374
2021	3.50%	7632
2022	3.50%	7899
2023	3.50%	8175
2024	3.50%	8461
2025	3.50%	8757
2026	3.50%	9063
2027	3.50%	9380
2028	3.50%	9708
2029	3.50%	10048
2030	3.50%	10400
2031	3.50%	10764
2032	3.50%	11141
2033	3.50%	11531
2034	3.50%	11935
2035	3.50%	12353
2036	3.50%	12785
2037	3.50%	13232
2038	3.50%	13695
2039	3.50%	14174
2040	3.50%	14670
2041	3.50%	15183
2042	3.50%	15714
2043	3.50%	16264
2044	3.50%	16833
2045	3.50%	17422
2046	3.50%	18032
2047	3.50%	18663
2048	3.50%	19316
2049	3.50%	19992
2050	3.50%	20692
2051	3.50%	21416
2052	3.50%	22166
2053	3.50%	22942
2054	3.50%	23745
2055	3.50%	24576
2056	3.50%	25436
2057	3.50%	26326
2058	3.50%	27247
2059	3.50%	28201
2060	3.50%	29188
2061	3.50%	30210
2062	3.50%	31267
2063	3.50%	32361
2064	3.50%	33494
2065	3.50%	34666
2066	3.50%	35879
2067	3.50%	37135
2068	3.50%	38435

ERU Growth Estimates		
Year	Est. Growth Rate	Est. Total ERU's
2020	-	
2021	-	
2022	-	2610
2023	-	2564
2024	-	2718
2025	3.50%	2813
2026	3.50%	2911
2027	3.50%	3013
2028	3.50%	3118
2029	3.50%	3227
2030	3.50%	3340
2031	3.50%	3457
2032	3.50%	3578
2033	3.50%	3703
2034	3.50%	3833
2035	3.50%	3967
2036	3.50%	4106
2037	3.50%	4250
2038	3.50%	4399
2039	3.50%	4553
2040	3.50%	4712
2041	3.50%	4877
2042	3.50%	5048
2043	3.50%	5225
2044	3.50%	5408
2045	3.50%	5597
2046	3.50%	5793
2047	3.50%	5996
2048	3.50%	6206
2049	3.50%	6423
2050	3.50%	6648
2051	3.50%	6881
2052	3.50%	7122
2053	3.50%	7371
2054	3.50%	7629
2055	3.50%	7896
2056	3.50%	8172
2057	3.50%	8458
2058	3.50%	8754
2059	3.50%	9060
2060	3.50%	9377
2061	3.50%	9705
2062	3.50%	10045
2063	3.50%	10397
2064	3.50%	10761
2065	3.50%	11138
2066	3.50%	11528
2067	3.50%	11931
2068	3.50%	12349

Population Growth Estimates		
Year	Est. Growth Rate	Est. Population
2069	3.50%	39780
2070	3.50%	41172
2071	3.50%	42613
2072	3.50%	44104
2073	3.50%	45648
2074	3.50%	47246
2075	3.50%	48900
2076	3.50%	50612

ERU Growth Estimates		
Year	Est. Growth Rate	Est. Total ERU's
2069	3.50%	12781
2070	3.50%	13228
2071	3.50%	13691
2072	3.50%	14170
2073	3.50%	14666
2074	3.50%	15179
2075	3.50%	15710
2076	3.50%	16260

APPENDIX B

City Provided Usage Data

2022 Flow Data Summary			
Month	Year	Monthly Flow	Daily Average
July	2021	7,422,000	239,419
August	2021	7,885,000	254,355
September	2021	7,258,000	241,933
October	2021	8,534,000	275,290
November	2021	8,465,000	282,167
December	2021	9,225,000	297,581
January	2022	9,439,000	304,484
February	2022	8,003,000	285,821
March	2022	8,669,000	279,645
April	2022	8,127,000	270,900
May	2022	8,517,000	274,742
June	2022	7,714,000	257,133
Total Annual Flow		99,258,000	
Monthly Average		8,271,500	
Daily Average		271,956	

2023 Peak Flows		
Month	Year	Max Flow (gpm)
January	2023	0.000
February	2023	0.000
March	2023	0.000
April	2023	0.000
May	2023	0.000
June	2023	0.000
July	2023	0.000
August	2023	0.000
September	2023	0.000
October	2023	0.000
November	2023	471.471
December	2023	359.964

2023 Flow Data Summary			
Month	Year	Monthly Flow	Daily Average
July	2022	7,790,000	251,290
August	2022	8,472,000	273,290
September	2022	8,456,000	281,867
October	2022	9,705,000	313,065
November	2022	9,812,000	327,067
December	2022	10,296,000	332,129
January	2023	9,869,000	318,355
February	2023	8,845,000	315,893
March	2023	9,607,000	309,903
April	2023	9,005,000	300,167
May	2023	8,828,000	284,774
June	2023	8,229,000	274,300
Total Annual Flow		108,914,000	
Monthly Average		9,076,167	
Daily Average		298,508	

2024 Peak Flows		
Month	Year	Max Flow (gpm)
January	2024	579.176
February	2024	597.304
March	2024	416.920
April	2024	405.626
May	2024	428.980
June	2024	319.054
July	2024	374.604
August	2024	439.449
September	2024	473.272
October	2024	423.717
November	2024	503.795
December	2024	405.568

2024 Flow Data Summary			
Month	Year	Monthly Flow	Daily Average
July	2023	8,150,000	262,903
August	2023	8,339,000	269,000
September	2023	9,630,000	321,000
October	2023	9,547,000	307,968
November	2023	7,847,000	261,567
December	2023	7,940,000	256,129
January	2024	7,976,000	257,290
February	2024	7,302,000	251,793
March	2024	7,739,000	249,645
April	2024	7,245,000	241,500
May	2024	7,577,000	244,419
June	2024	7,220,000	240,667
Total Annual Flow		96,512,000	
Monthly Average		8,042,667	
Daily Average		263,657	

Culinary Water Billing & Usage Summary						
Connection Type	2022		2023		2024	
	Meters	Usage	Meters	Usage	Meters	Usage
Unclassified	27	20,021,132	16	4,510	37	9,750,354
Agriculture	10	1,452,285	10	651,220	8	624,920
Commercial	17	3,813,584	16	5,153,065	18	4,391,750
Residential	2,382	395,990,249	2,450	396,535,736	2,564	494,805,475
County	18	4,839,881	16	4,220,714	16	4,302,244
City Owned	15	2,288,400	15	2,336,470	16	3,895,368
Church/School/Go	10	5,436,713	10	6,063,520	10	6,822,462
Total	2479	433,842,244	2533	414,965,235	2669	524,592,573

Wastewater Billing & Usage Summary						
Connection Type	2022		2023		2024	
	Meters	Usage	Meters	Usage	Meters	Usage
Unclassified	0	N/A	0	N/A	0	N/A
Agriculture	0	N/A	0	N/A	0	N/A
Commercial	14	N/A	13	N/A	14	N/A
Residential	2,459	N/A	2,489	N/A	2,640	N/A
County	4	N/A	3	N/A	3	N/A
City Owned	14	N/A	11	N/A	11	N/A
Church/School/Go	9	N/A	9	N/A	9	N/A
Total	2500	N/A	2525	N/A	2677	N/A

APPENDIX C

Peak Flow Estimates

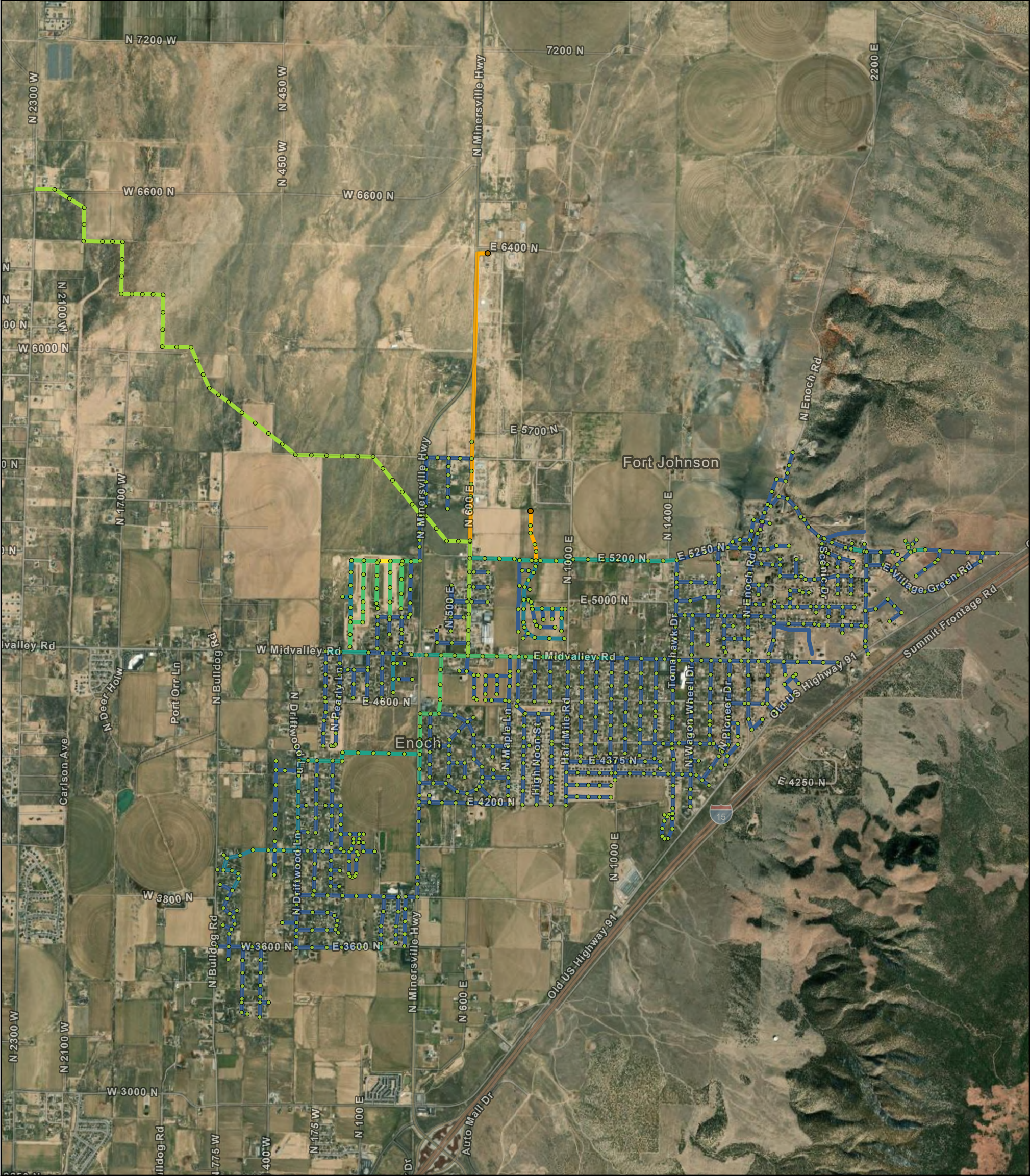
Peak Flow Estimates		
Year	ERUs Estimated	Peak Flow (gpm)
2026	2,911	645
2027	3,013	667
2028	3,118	691
2029	3,227	715
2030	3,340	740
2031	3,457	766
2032	3,578	793
2033	3,703	820
2034	3,833	849
2035	3,967	879
2036	4,106	910
2037	4,250	941
2038	4,399	975
2039	4,553	1,009
2040	4,712	1,044
2041	4,877	1,080
2042	5,048	1,118
2043	5,225	1,157
2044	5,408	1,198
2045	5,597	1,240
2046	5,793	1,283
2047	5,996	1,328
2048	6,206	1,375
2049	6,423	1,423
2050	6,648	1,473
2051	6,881	1,524
2052	7,122	1,578
2053	7,371	1,633
2054	7,629	1,690
2055	7,896	1,749
2056	8,172	1,810
2057	8,458	1,874
2058	8,754	1,939
2059	9,060	2,007
2060	9,377	2,077
2061	9,705	2,150
2062	10,045	2,225
2063	10,397	2,303
2064	10,761	2,384

Peak Flow Estimates		
Year	ERUs Estimated	Peak Flow (gpm)
2065	11,138	2,467
2066	11,528	2,554
2067	11,931	2,643
2068	12,349	2,736
2069	12,781	2,831
2070	13,228	2,930
2071	13,691	3,033
2072	14,170	3,139
2073	14,666	3,249
2074	15,179	3,363
2075	15,710	3,480
2076	16,260	3,602

APPENDIX D

Existing Wastewater Network

Enoch Existing Sewer Network



- Pump
- Junctions
- Sewer Force Mains 8"
- Sewer Gravity Mains 4"
- Sewer Gravity Mains 6"
- Sewer Gravity Mains 8"
- Sewer Gravity Mains 10"
- Sewer Gravity Mains 12"
- Sewer Gravity Mains 15"
- Sewer Gravity Mains 18"
- Sewer Gravity Mains 24"

0 0.25 0.5 Miles

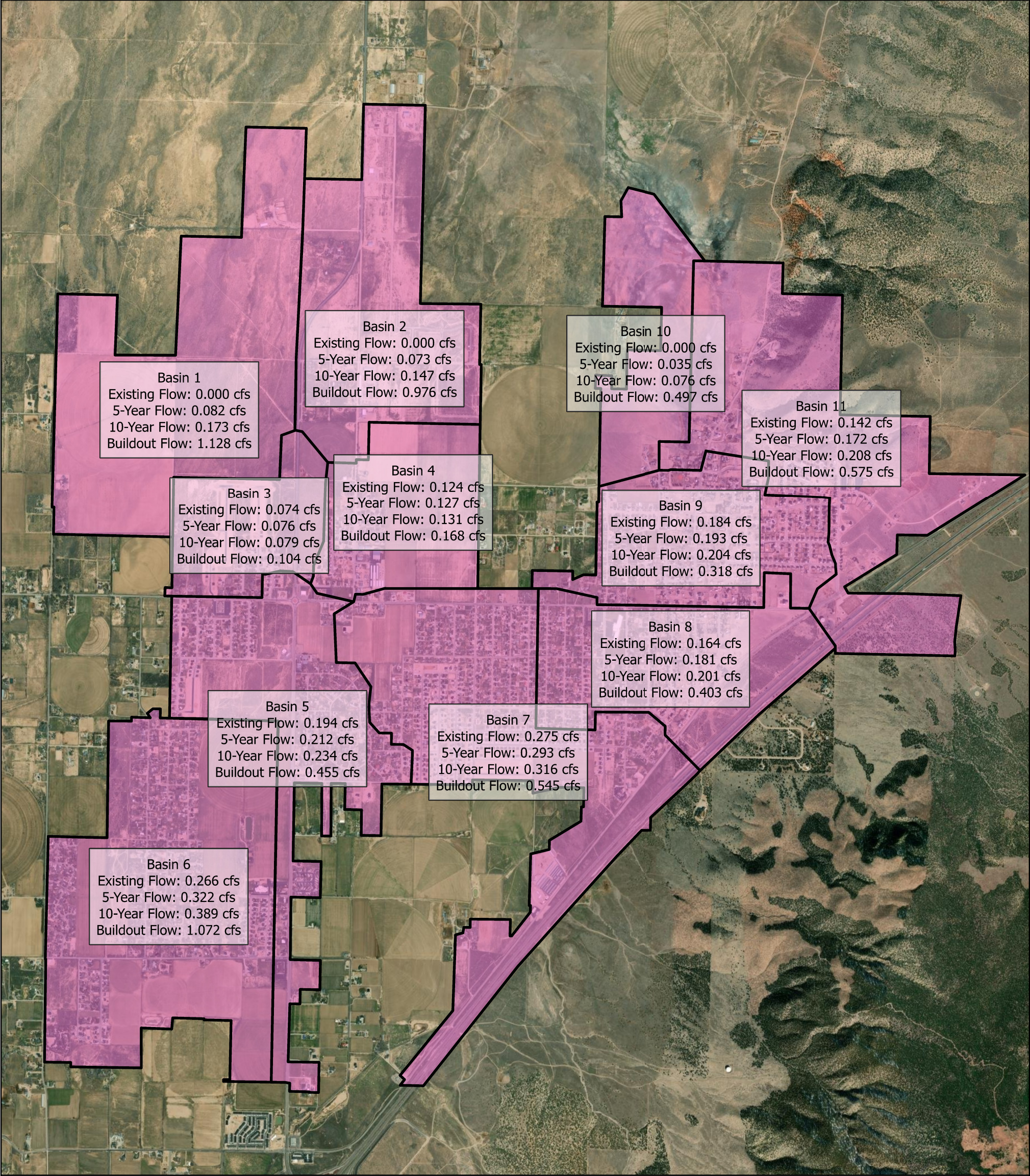


Creating solutions that
work and relationships
that last.

APPENDIX E

Modeled Basins and Flow Distribution

Enoch Modeled Basins & Flow Distribution



 Basins

0 0.2 0.4 Miles



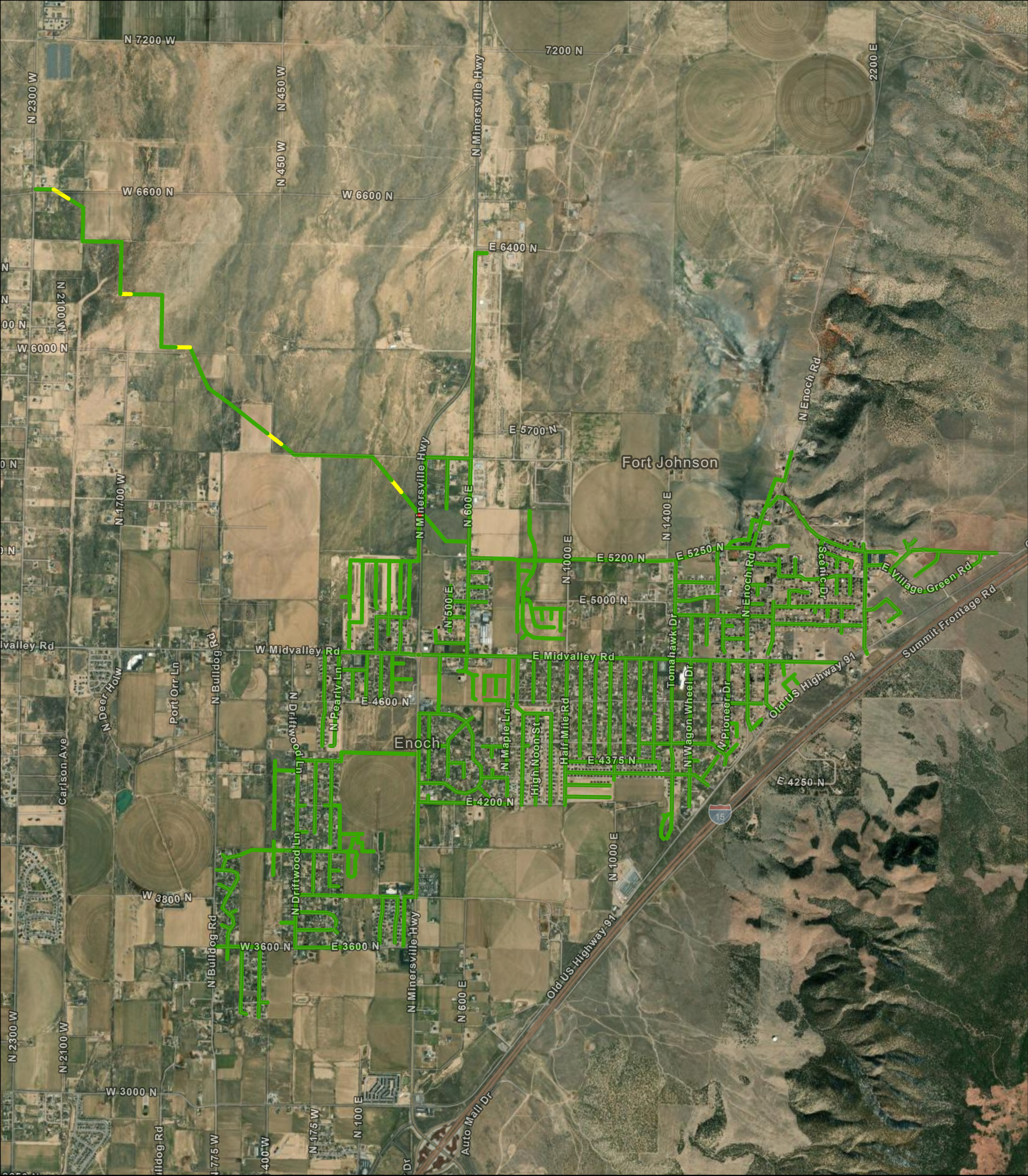
*Creating solutions that
work and relationships
that last.*

APPENDIX F

Pipe Capacity Model Exhibits

Enoch Existing Sewer Model





Adequate Capacity

Approaching Design Capacity

Exceeding Design Capacity

Exceeding Max Capacity and Surcharging

0

0.25

0.5 Miles



SUNRISE

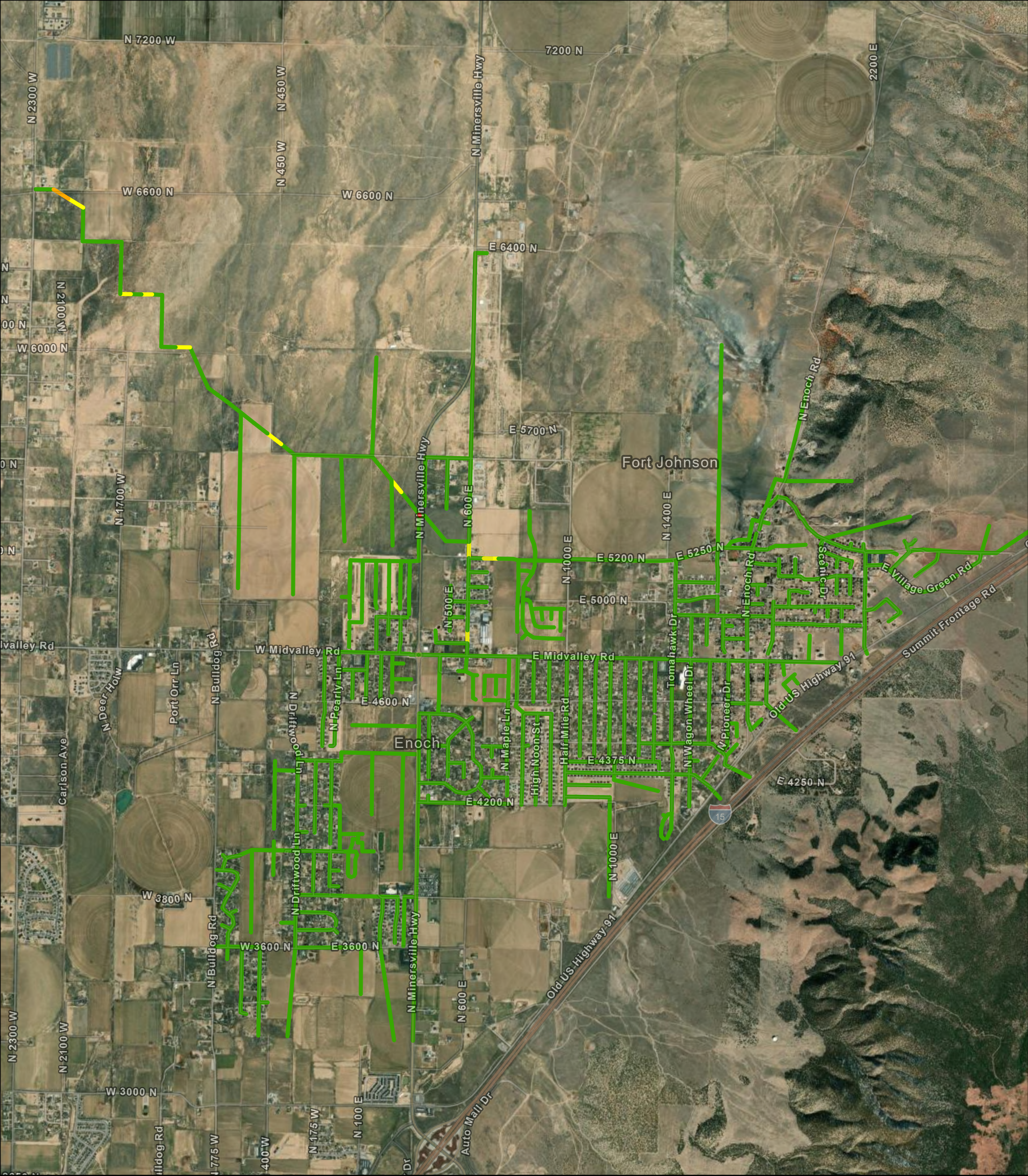
ENGINEERING

Creating solutions that

work and relationships

that last.

Enoch 5-Year Planning Sewer Model



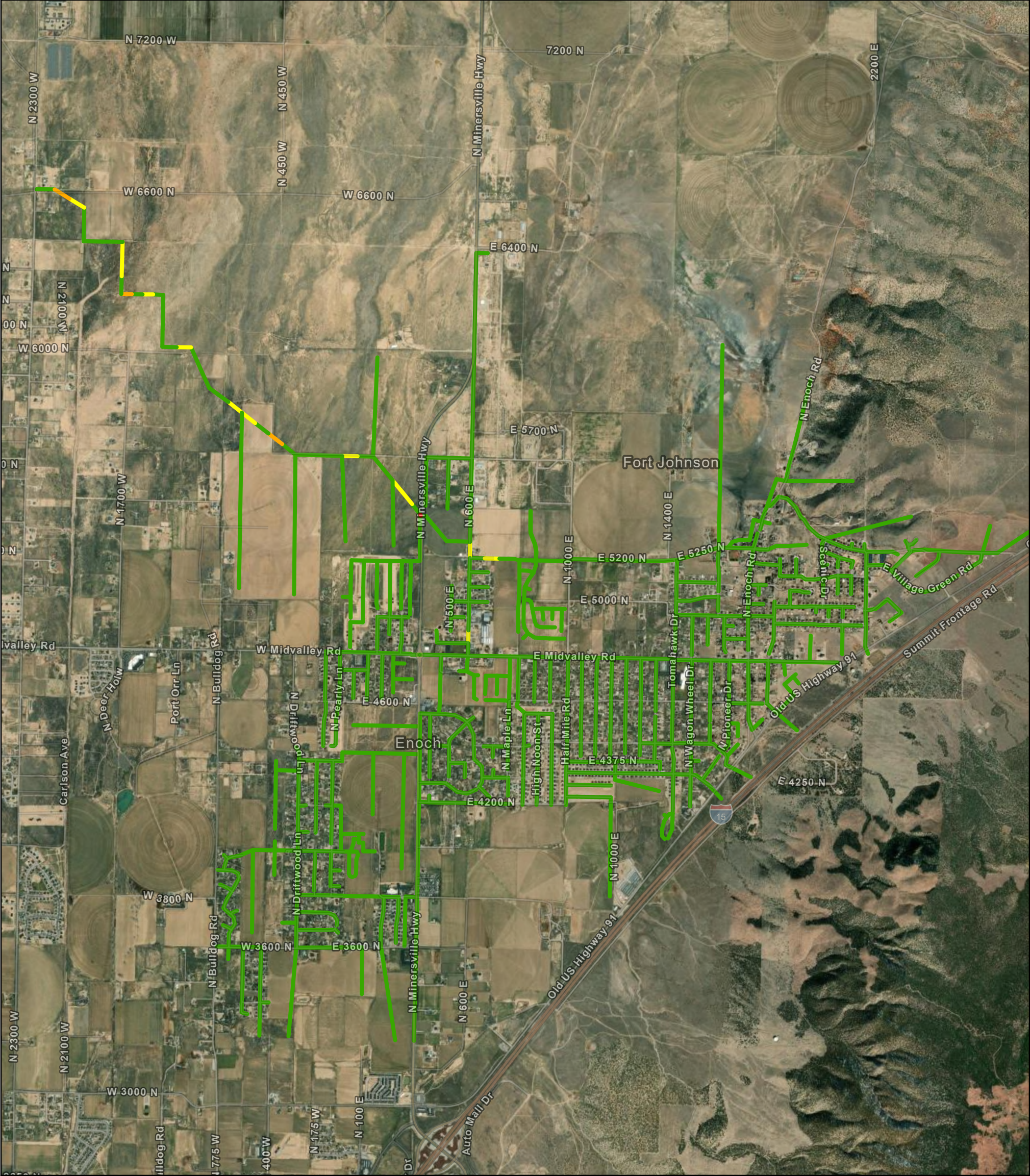
- Adequate Capacity
- Approaching Design Capacity
- Exceeding Design Capacity
- Exceeding Max Capacity and Surcharging

0 0.25 0.5 Miles



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work and relationships
that last.*

Enoch 10-Year Planning Sewer Model

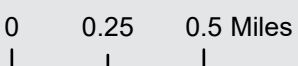


- Adequate Capacity
- Approaching Design Capacity
- Exceeding Design Capacity
- Exceeding Max Capacity and Surcharging

0 0.25 0.5 Miles



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work and relationships
that last.*



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that last.*

APPENDIX G

Recommended Improvements



*Creating solutions that
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APPENDIX H

Engineer's Opinion of Probable Cost

Engineer's Opinion of Probable Cost

Parallel Trunkline (Outfall to Minersville Hwy)
Enoch City

1-Dec-25
RJL/ncw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	MOBILIZATION	1	LS	\$ 214,000.00	\$ 214,000.00
2	TRAFFIC CONTROL	1	LS	\$ 9,500.00	\$ 9,500.00
3	SWPPP COMPLIANCE AND EROSION CONTROL	1	LS	\$ 30,000.00	\$ 30,000.00
4	DUST CONTROL & WATERING	1	LS	\$ 45,000.00	\$ 45,000.00
5	SUBSURFACE INVESTIGATION	8	HR	\$ 250.00	\$ 2,000.00
6	CONSTRUCTION STAKING	1	LS	\$ 30,000.00	\$ 30,000.00
7	CLEARING, GRUBBING, EXCAVATION, & DEMOLITION	1	LS	\$ 60,000.00	\$ 60,000.00
8	30" PVC SDR-35 SEWER MAIN	50	LF	\$ 250.00	\$ 12,500.00
9	24" PVC SDR-35 SEWER MAIN	16,400	LF	\$ 200.00	\$ 3,280,000.00
10	84" PRECAST CONCRETE MANHOLE	2	EA	\$ 20,000.00	\$ 40,000.00
11	60" PRECAST CONCRETE MANHOLE	40	EA	\$ 8,500.00	\$ 340,000.00
12	SHORING/TRENCH BOXES	1	LS	\$ 45,000.00	\$ 45,000.00
13	IMPORTED PIPE BEDDING	7,800	CY	\$ 50.00	\$ 390,000.00
SUBTOTAL					\$ 4,498,000.00
CONTINGENCY				20%	\$ 899,600.00
CONSTRUCTION TOTAL					\$ 5,397,600.00
INCIDENTALS					
1	Engineering Design	4.5%	LS	\$ 285,700.00	\$ 285,700.00
2	Bidding & Negotiating	0.2%	HR	\$ 10,000.00	\$ 10,000.00
3	Engineering Construction Services	5.6%	HR	\$ 359,800.00	\$ 359,800.00
4	Topographic & Property Survey	0.3%	EST	\$ 21,000.00	\$ 21,000.00
5	Bond Attorney	0.3%	EST	\$ 20,000.00	\$ 20,000.00
6	Land & RoW Negotiation/Acquisition	3.1%	EST	\$ 200,000.00	\$ 200,000.00
7	GIS Mapping	0.1%	EST	\$ 5,000.00	\$ 5,000.00
8	Environmental Report	0.8%	EST	\$ 50,000.00	\$ 50,000.00
9	Preliminary Engineering Report (PER)	0.8%	EST	\$ 50,800.00	\$ 50,800.00
SUBTOTAL					\$ 1,002,300.00
TOTAL PROJECT COST					\$ 6,399,900.00

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

Engineer's Opinion of Probable Cost

Install Additional Wastewater Flow Meters
 Enoch City

1-Dec-25
 RJL/ncw

NO.	DESCRIPTION	EST. QTY	UNIT	UNIT PRICE	AMOUNT
GENERAL CONSTRUCTION					
1	FLOW METER AND DATA LOGGER	8	EA	\$ 40,000.00	\$ 320,000.00
2	INSTALLATION	1	LS	\$ 10,000.00	\$ 10,000.00
SUBTOTAL					\$ 330,000.00
CONTINGENCY				20%	\$ 66,000.00
CONSTRUCTION TOTAL					\$ 396,000.00

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

APPENDIX I

FY 2027 User Rate Analysis

FY 2027 USER RATE ANALYSIS	
EXPENSES:	
Salaries and Wages	\$257,685.00
Employee Benefits	\$141,517.25
Dues and Memberships	\$104.75
Travel and Training	\$2,618.75
Supplies and Materials	\$3,666.25
Repair and Maintenance Equipment	\$4,713.75
Fuel	\$10,475.00
Utilities	\$2,095.00
Telephone	\$838.00
Postage	\$6,808.75
Uniform Allowance	\$1,047.50
Shop	\$1,047.50
Yard	\$1,047.50
Payment Transaction Fees	\$11,522.50
Raising Manholes	\$2,618.75
Treatment Fee - Cedar City	\$167,600.00
Computer Support	\$6,285.00
Depreciation	\$172,837.50
Office Equipment	\$20,950.00
Interest Expense	\$7,332.50
Renewal and Replacement Fund (5%)	\$41,140.56
Self-Participation Project Costs	\$646,000.00
SUBTOTAL EXPENSES	\$1,509,951.81
EXISTING DEBT SERVICE	
2018 GO Sewer Revenue Bonds	\$21,679.00
SUBTOTAL EXISTING DEBT SERVICE:	\$21,679.00
NEW DEBT SERVICE	
Increase to Impact Fee Fund Balance for Future Bond Payment	\$163,015.12
SUBTOTAL NEW DEBT SERVICE:	\$163,015.12
TOTAL EXPENSES:	\$1,694,645.93
OTHER INCOME (BESIDES USER RATES)	
Connection Fees	\$25,500.00
Impact Fees (0.5 Growth Factor Applied)	\$163,015.12
Transfer from Impact Fee Fund for Project Costs	\$115,200.00
DEQ Planning Advance	\$530,800.00
TOTAL OTHER INCOME:	\$834,515.12
EXPENSES - OTHER INCOME	\$860,130.81
ERUs (FY 2028)	3118
Average Monthly Sewer User Rate per ERU	\$22.99
TOTAL ANNUAL INCOME:	\$1,694,645.93

APPENDIX J

Cash Flow Analysis

	Fiscal Year	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected	Projected
CASH FLOW	Beginning July 1st Ending June 30th	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
		2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
WASTEWATER SYSTEM INFORMATION																					
Annual Population Growth Rate		3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Inflation Rate		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
User Rate Increase (\$/ERU/Month)	\$	9.25	0.87	1.42	1.49	1.56	1.63	1.71	1.79	1.87	1.96	2.06	2.15	2.26	2.36	2.48	2.59	2.72	2.85	2.98	3.12
User Rate/ERU/Month	\$	29.00	29.87	31.29	32.77	34.33	35.96	37.67	39.46	41.33	43.30	45.35	47.51	49.76	52.13	54.60	57.20	59.91	62.76	65.74	68.86
Connection Fee	\$	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00	250.00
Impact Fee	\$	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37	3,196.37
Total ERU's		3013	3118	3227	3340	3457	3578	3703	3833	3967	4106	4250	4399	4553	4712	4877	5048	5225	5408	5597	5793
New ERU's		102	105	109	113	117	121	125	130	134	139	144	149	154	159	165	171	177	183	189	196
WASTEWATER FUND ACCOUNTING																					
Operating Income																					
Access Fees	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Connection Fees	\$	25,500.00	26,250.00	27,250.00	28,250.00	29,250.00	30,250.00	31,250.00	32,500.00	33,500.00	34,750.00	36,000.00	37,250.00	38,500.00	39,750.00	41,250.00	42,750.00	44,250.00	45,750.00	47,250.00	49,000.00
Wastewater Billing Fees	\$	1,048,487.97	1,117,577.52	1,211,586.83	1,313,578.64	1,424,173.89	1,544,038.09	1,673,884.23	1,814,949.54	1,967,623.35	2,133,303.98	2,313,006.01	2,507,816.90	2,718,901.94	2,947,509.46	3,195,631.65	3,464,793.34	3,756,629.08	4,072,890.51	4,415,454.27	4,787,156.71
Subtotal Operating Income	\$	1,073,987.97	1,143,827.52	1,238,836.83	1,341,828.64	1,453,423.89	1,574,288.09	1,705,134.23	1,847,449.54	2,001,123.35	2,168,053.98	2,349,006.01	2,545,066.90	2,757,401.94	2,987,259.46	3,236,881.65	3,507,543.34	3,800,879.08	4,118,640.51	4,462,704.27	4,836,156.71
Non-Operating Income																					
Interest - Wastewater	\$	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Impact Fees - Sewer	\$	163,015.12	167,809.68	174,202.43	180,595.18	186,987.93	193,380.68	199,773.43	207,764.36	214,157.11	222,148.05	230,138.99	238,129.92	246,120.86	254,111.80	263,700.92	273,290.05	282,879.17	292,468.30	302,057.42	313,244.73
Fund Balance Appropriation (From Impact Fee Fund)	\$	115,200.00	75,500.00	105,123.14	134,746.28	164,369.42	193,992.56	223,615.71	-	-	-	-	-	-	-	-	-	-	-	-	-
DEQ Planning Advance	\$	530,800.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Non-Operating Income	\$	809,015.12	243,309.68	279,325.57	315,341.46	351,357.35	387,373.24	423,389.13	207,764.36	214,157.11	222,148.05	230,138.99	238,129.92	246,120.86	254,111.80	263,700.92	273,290.05	282,879.17	292,468.30	302,057.42	313,244.73
TOTAL REVENUE	\$	1,883,003.09	1,387,137.20	1,518,162.40	1,657,170.10	1,804,781.25	1,961,661.33	2,128,523.36	2,055,213.91	2,215,280.47	2,390,202.03	2,579,145.00	2,783,196.82	3,003,522.80	3,241,371.26	3,500,582.57	3,780,833.38	4,083,758.25	4,411,108.81	4,764,761.69	5,149,401.44
Operating Expenses																					
Salaries and Wages	\$	257,685.00	269,925.04	282,746.48	296,176.93	310,245.34	324,981.99	340,418.64	356,588.52	373,526.48	391,268.98	409,854.26	429,322.34	449,715.15	471,076.62	493,452.76	516,891.77	541,444.12	567,162.72	594,102.95	622,322.84
Employee Benefits	\$	141,517.25	148,239.32	155,280.69	162,656.52	170,382.70	178,475.88	186,953.49	195,833.78	205,135.88	214,879.84	225,086.63	235,778.24	246,977.71	258,709.15	270,997.84	283,870.23	297,354.07	311,478.39	326,273.61	341,771.61
Dues and Memberships	\$	104.75	109.73	114.94	120.40	126.12	132.11	138.38	144.95	151.84	159.05	166.61	174.52	182.81	191.49	200.59	210.12	220.10	230.55	241.51	252.98
Travel and Training	\$	2,618.75	2,743.14	2,873.44	3,009.93	3,152.90	3,302.66	3,459.54	3,623.87	3,796.00	3,976.31	4,165.19	4,363.03	4,570.28	4,787.36	5,014.76	5,252.97	5,502.48	5,763.85	6,037.63	6,324.42
Supplies and Materials	\$	3,666.25	3,840.40	4,022.82	4,213.90	4,414.06	4,623.73	4,843.35	5,073.41	5,314.40	5,566.84	5,831.26	6,108.24	6,398.39	6,702.31	7,020.67	7,354.15	7,703.47	8,069.39	8,452.68	8,854.19
Repair and Maintenance Equipment	\$	4,713.75	4,937.65	5,172.19	5,417.87	5,675.22	5,944.79	6,227.17	6,522.96	6,832.80	7,157.36	7,497.33	7,853.46	8,226.50	8,617.26	9,026.57	9,455.34	9,904.47	10,374.93	10,867.74	11,383.95
Fuel	\$	10,475.00	10,972.56	11,493.76	12,039.71	12,611.60	13,210.65	13,838.16	14,495.47	15,184.00	15,905.24	16,660.74	17,452.13	18,281.10	19,149.46	20,059.06	21,011.86	22,009.92	23,055.40	24,150.53	25,297.68
Utilities	\$	2,095.00	2,194.51	2,298.75	2,407.94	2,522.32	2,642.13	2,767.63	2,899.09	3,036.80	3,181.05	3,332.15	3,490.43	3,656.22	3,829.89	4,011.81	4,202.37	4,401.98	4,611.08	4,830.11	5,059.54
Telephone	\$	838.00	877.81	919.50	963.18	1,008.93	1,056.85	1,107.05	1,159.64	1,214.72	1,272.42	1,332.86	1,396.17	1,462.49	1,531.96	1,604.72	1,680.95	1,760.79	1,844.43	1,932.04	2,023.81
Postage	\$	6,808.75	7,132.17	7,470.94	7,825.81	8,197.54	8,586.92	8,994.80	9,422.05	9,869.60	10,338.41	10,829.48	11,343.88	11							

APPENDIX K

Impact Fee Certification

CERTIFICATION OF IMPACT FEE ANALYSIS BY CONSULTANT

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

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

1. Includes only the costs of public facilities that are:
 - a. Allowed under the Impact Fees Act; and
 - b. Actually incurred; or
 - c. Projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. Does not include:
 - a. costs of operation and maintenance of public facilities;
 - b. costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents; or
 - c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and that methodological standards set forth by the Federal Office of Management and Budget for federal grant reimbursement;
3. Offsets costs with grants or other alternate sources of payment; and
4. Complies in each and every relevant respect with the Impact Fees Act.

Brittany Darnell, P.E., makes this certification with the following qualifications:

1. All of the recommendations for implementation of the Impact Fee Facilities Plan ("IFFP") made in the IFFP documents or in the Impact Fee Analysis documents are followed in their entirety by the Enoch City, Utah, staff, and elected officials.
2. If all or a portion of the IFFP or Impact Fee Analyses are modified or amended, this certification is no longer valid.
3. All information provided to Sunrise Engineering, LLC, its contractors or suppliers, is assumed to be correct, complete and accurate. This includes information provided by Enoch City, Utah, and outside sources.

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

Sunrise Engineering, LLC

By: _____

Dated: _____