

TYRONE WATER & WASTEWATER ASSOCIATION
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Tyrone townsite has been awarded grants/loans for the following projects: Colonias Infrastructure Fund (CIF), New Mexico Financial Administration (NMFA)

1. CIF-6443 \$5,697,115 for the replacement of all the waterlines in the townsite. This project includes new fire hydrants and subgrade valves. A new vault at the base of the water tower will contain pressure reduction valves and isolation valves which will let our operator isolate the water tower from the water system as repairs are undertaken.
2. CIF-6444 \$848,958 for rehabilitation of the 200,000-gallon elevated water tank. The exterior will be resurfaced after the removal of lead-based paint. The concrete foundations for the towers will also be stabilized. Freeport McMoRan Foundation has donated \$212,000 to this project. Initial phases of this project involved an interior inspection of the tank and cleaning of sediment at the bottom of the tank. Metal thickness testing was also performed to determine the remaining life of the tank.
3. CIF-6739 \$503,124 for the preparation of construction drawings and specifications for new wastewater lines within the Tyrone townsite. A recent video survey of the existing vitreous clay wastewater lines revealed significant deterioration of the lines. Bohannon Huston Inc. (BHI), our consulting engineering firm, recommended replacing the 60-year-old wastewater lines.
4. CIF-5799 Design project for new waterlines, hydrants, pressure reduction valves, and altitude valves. \$383,320. This project is complete and resulted in CIF-6443.
5. RIP-00056-video investigation of wastewater lines within the townsite. This technical report results in the funding of CIF-6739. \$50,000 grant from the State of New Mexico Environment Department funded this task. (100% grant, no loan component)
6. PPRF-6659 Loan from New Mexico Financial Administration for \$574,539 of which \$35,739.28 is a reserve account maintained by TWWA. Repayment of this loan began in July 2025 and will be paid off in 2053.
7. Grants totaling \$212,000 from Freeport Community Foundation in 2023 and 2024 for water tower rehabilitation and related engineering costs. (100% grant, no loan component)

8. Completed project: \$1,915,022-100% grant from the State Board of Finance for the construction of the new lift station. Stantec Engineering, and File Construction were contracted by the Southwest New Mexico Council of Governments acting as the fiscal agent for the project. Project completed on July 3, 2024 and one year warranty period ended July 3, 2025.
9. 2025 Legislative session (Junior Bill) \$100,000 grant for a TWWA service truck, tools, and equipment. TV camera, rooter, tools, and supplies. Funds for truck should be available in July 2025.
10. The USDA/RD loan for \$661,000 was paid off on May 30, 2025. The loan was initiated on March 12, 2023, and was scheduled to be paid off on February 12, 2053. The interest rate was 3.125%.
11. The Engineer's estimate for the wastewater replacement project is: \$11,161,362. The memorandum from BHI is attached.

TECHNICAL MEMORANDUM

DATE: March 6, 2025

TO: Alan Berg, President
Tyrone Water and Wastewater Association

FROM: Tyler Hopkins, PE
Brittany Trejo, EI

SUBJECT: Tyrone Wastewater Collection System Condition Assessment

1 PURPOSE OF MEMORANDUM

The purpose of this technical memorandum is to evaluate the existing wastewater collection system to determine what components, if any, can be rehabbed or in need of replacement. The evaluation includes a camera inspection of the entire collection system. The camera inspection report is attached for reference to this memo (pending final edits).

2 EXISTING WASTEWATER SYSTEM

The Tyrone wastewater collection system is a gravity-based system that drains to a lift station where it is then pumped via a forcemain to the Silver City collection system and treated at the Silver City WWTP. Tyrone has approximately 321 sewer connections with 318 of them being residential. The three non-residential consist of a post office, fire station, and community center.

The collection system was originally installed in the 1960s by Phelps Dodge and consists of vitrified clay pipe and brick manholes. There is a total of about 19,000 linear feet of 6-in, 8-in, and 10-in collection lines with over 100 manholes. This system has been in service for over 60 years. There has been no major capital improvement projects completed on the collection system, only general repair and maintenance work when necessary.

Bohannon Huston, Inc. contracted with Southwest Envirotec to video each of the sewer lines to determine the current condition of the sewer lines. Based on the video of the sewer system root intrusion, pipe deformity, and pipe settling is a consistent issue throughout the collection system. Brick manholes show signs of deterioration.

3 NEED FOR PROJECT

3.1 HEALTH AND PUBLIC SAFETY ISSUES

Vitrified clay pipes are prone to leaks due to pipe joints not sealed like in modern day PVC pipe joints and can lead to root intrusion and sewage leaking into the nearby soil. While the videos do not specifically show gaps at the pipe joints, the presence of root intrusion, including at service lateral

locations, indicates leaks are occurring throughout the system. The mortar within the manholes also show signs of deterioration. How extensive this deterioration was unable to be determined from the camera inspection videos. The compromises within the piping and the manhole degradation leads to both leaks of raw wastewater into the surrounding soil and groundwater infiltration during rain events.

4 RECOMMENDATIONS AND CONCLUSIONS

4.1 PROJECT DESCRIPTION

Based on the materials and current conditions of the pipelines and manholes, both should be replaced throughout the collection system. The Association should remove approximately 18,680-feet of existing 6-inch, 8-inch, and 10-inch VCP wastewater collection pipes and approximately 103 sewer manholes. Then install approximately 16,160-feet of 8-inch SDR 35 PVC pipe, approximately 2,520-feet of 10-inch SDR 35 PCC pipe, and approximately 103 new concrete manholes. The new wastewater collection system would be installed in the same location where the existing wastewater collection system.

The Association additionally would need to install approximately 7,600-feet of wastewater collection PVC service piping and reconnect all residents back into the new wastewater collection system.

4.2 COST ESTIMATE

A preliminary cost estimate is shown in Table 4-1.

Table 4-1. Alternate 1 Cost Estimate

Item	Description	Unit	Quantity	Unit Price	Extension
1	Mobilization/Demobilization	LS	1	\$ 361,990	\$ 361,990
2	Field Surveying and Staking	LS	1	\$ 80,000	\$ 80,000
3	Storm Water Pollution Prevention Plan	LS	1	\$ 30,000	\$ 30,000
4	Traffic Control Plan	LS	1	\$ 67,500	\$ 67,500
5	Material Testing	ALW	1	\$ 20,000	\$ 20,000
6	Bypass Pumping	LS	1	\$ 300,000	\$ 300,000
7	Pavement Removal, Complete-in-Place	SY	69,700	\$ 3	\$ 174,250
8	2-inch Pavement Replacement	SY	69,700	\$ 45	\$ 3,136,500
9	Curb and Gutter Removal and Replacement	LF	2,250	\$ 65	\$ 146,250
10	4-in Sidewalk Removal and Replacement	SF	8,530	\$ 20	\$ 170,600
11	Vitrified Clay Pipe (VCP) Removal	LF	18,680	\$ 5	\$ 93,400
12	Sanitary Sewer Manhole Removal	EA	103	\$ 1,500	\$ 154,500
13	8-in SDR 35 PVC Pipe	LF	16,160	\$ 25	\$ 404,000
14	10-in SDR 35 PVC Pipe	LF	2,520	\$ 30	\$ 75,600
15	Trenching (≤8-ft)	LF	12,520	\$ 50	\$ 626,000
16	Trenching (≥8-ft, ≤12-ft)	LF	6,240	\$ 80	\$ 499,200
17	4-ft Diameter Manholes (≤8-ft)	EA	61	\$ 8,500	\$ 518,500
18	4-ft Diameter Manholes (≥8-ft, ≤12-ft)	EA	37	\$ 12,000	\$ 444,000
19	4-ft Diameter Manholes (≥12-ft)	EA	5	\$ 16,000	\$ 80,000
20	4-in Service Connection	EA	326	\$ 1,500	\$ 489,000
21	4-in Sewer Service Piping - Collection Side	LF	7,600	\$ 30	\$ 228,000
SUBTOTAL OF ITEMS 1 - 21					\$ 8,099,290
CONSTRUCTION					
Construction					\$ 8,099,290
Contingencies (20%)					\$ 1,619,858
Construction NMGR (6.3125%)					\$ 613,521
CONSTRUCTION TOTAL					\$ 10,332,669
PROFESSIONAL SERVICES					
Engineering Design Services ¹					\$ 424,900
Additional Engineering Services ²					\$ 48,350
Construction Engineering Services ³					\$ 121,000
Engineering RPR Services					\$ 307,560
Professional Services NMGR (6.3125%)					\$ 47,883
PROFESSIONAL SERVICES TOTAL					\$ 828,693
TOTAL PROJECT COST					
Professional services					\$ 828,693
Construction w/ Contingencies					\$ 10,332,669
TOTAL PROJECT COST w/ NMGR					\$ 11,161,362

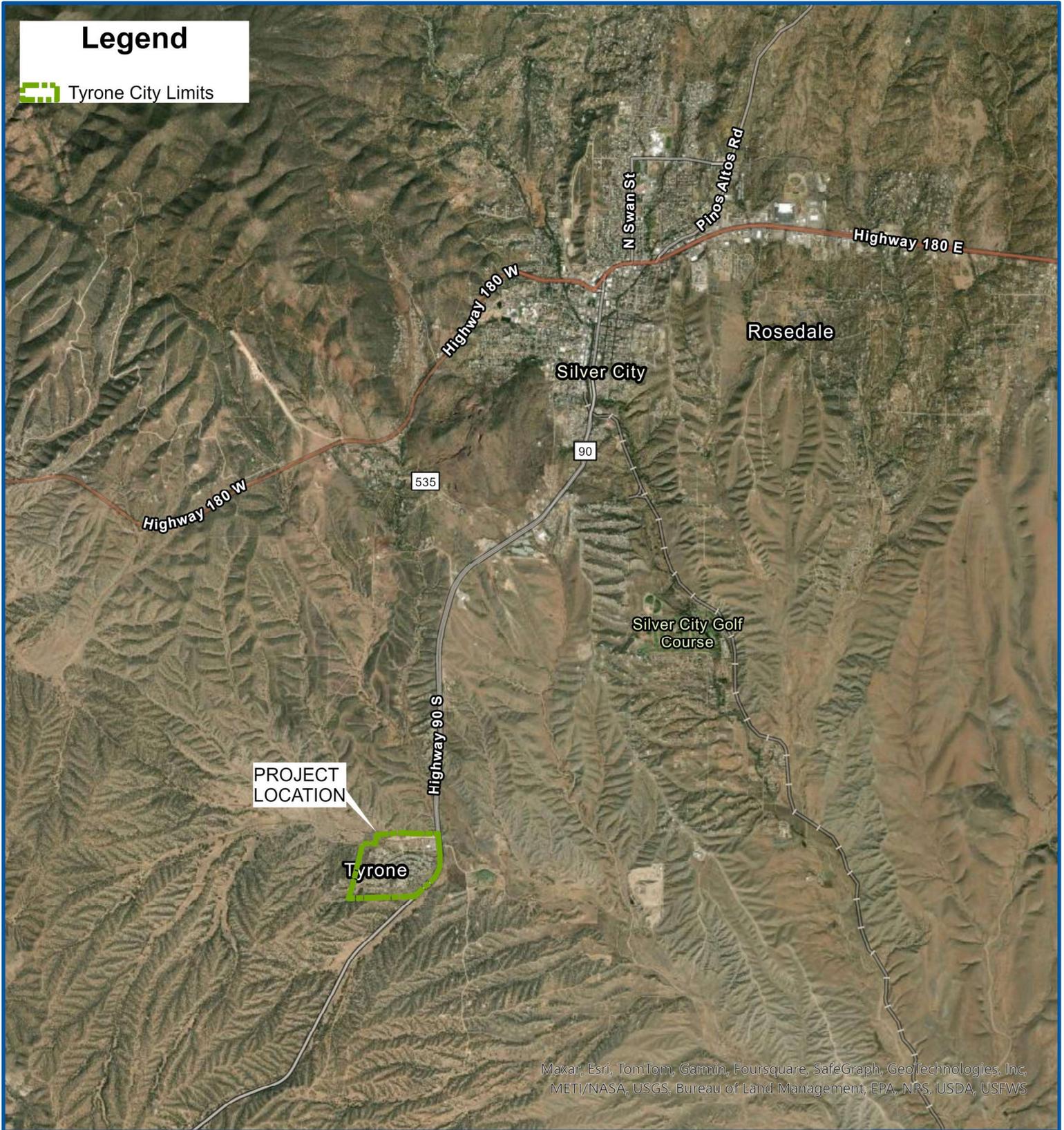
¹Includes project management, preliminary design, and final design

²Includes design survey and geotechnical investigation

³Includes bidding administration and construction administration

Legend

 Tyrone City Limits



Maxar, Esri, TomTom, Garmin, Foursquare, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management, EPA, NRS, USDA, USFWS



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Feet

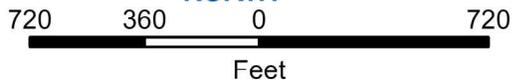
Bohannon  **Huston**
www.bhinc.com 800.877.5332

Tyrone Water and Wastewater Association Wastewater Collection System Technical Memorandum

Figure 1: Site Vicinity Map

Legend

-  City Limits
-  Sewer Manhole
-  Ex. Sewer Pipe



Tyrone Water and Wastewater Association Wastewater Collection System Technical Memorandum

**Figure 2: Existing Wastewater
Collection System**