



WATER INFRASTRUCTURE ANALYSIS

OVERVIEW

The city has conducted an in-depth inventory and analysis of its infrastructure, revealing critical issues in the water distribution system. Over half of the water distribution system is over 50 years old, with significant deficiencies affecting water quality and fire protection capabilities.

PROJECT SCOPE

The project focuses on addressing deficiencies in the water distribution system, primarily targeting mains in the Hendrickson/Holmes area, which range from 64 to 74 years old. The average useful life of water lines is 50 years. These mains include 4-inch and 6-inch cast iron (CI) and asbestos cement (AC) pipes.

POPULATION IMPACT

Approximately 17% of the city's population (180 out of 1068) will benefit directly from this project. This represents roughly 1/5 of the mains identified for improvement, allowing us to estimate that about 20% of the identified mains will be addressed.

DEFICIENCIES TO BE ADDRESSED

Unaccountable Water

Due to aging pipes, unaccountable water has been as high as 50%, resulting in approximately \$250,000 in lost revenue for the city. This loss also hampers the city's ability to operate an enterprise fund and allocate funds for replacement projects.

Fire Protection Limitations

Over half of the intersections in the project area do not meet the standard 2-hour, 1000 gallons per minute (gpm) fire flow requirement, limiting the city's ability to protect homes in case of fire emergencies.

Sewer Main Separation

Ten of the 23 blocks in the project area do not meet the standard 10-foot separation from the water main to the sewer main, posing a risk of contamination and threatening the community's health.

System Reliability

The water distribution system is structurally fragile, leading to bursts in water mains when the water tank is at full capacity. To mitigate this, the city intentionally maintains the water tank at five feet below capacity, reducing storage by 13% and impacting daily water usage and fire suppression capabilities.

CONCLUSION

Addressing these deficiencies is crucial for maintaining the integrity and functionality of the city's water distribution system. This project aims to improve water quality, enhance fire protection capabilities, and ensure the health and safety of the community.