

Information Brief

Seattle Study Shows Clay Pipe Lasts Longer

A Study of Seattle Sewers Found:

- Their oldest pipe, clay pipe, lasting the longest.
- Clay pipe was an order of magnitude less likely to fail than other pipe products.
- Extrapolating the Weibull curves from this study, for a 2.75% likelihood of failure (per 250 feet of pipe), the data predicts a service life of 1,000 years.



Several years ago the city of Seattle was operating under an EPA mandate to address the health of their sewer system. Community leaders feared that they would be required to invest hundreds of millions of dollars they didn't have to replace old pipes. An initial step was to video 1.8 million feet of clay pipe in the ground to assess its health. And to the surprise of many, the oldest pipes, made of clay, were in the best shape of any in the system.

ASSET MANAGEMENT APPROACH SPOTLIGHTS LONGER SERVICE LIFE

A key element of the Seattle study was the team's utilization of an Asset Management approach, and supporting software tools, to collect data on and analyze the state of their pipes in the ground. Leaders of other jurisdictions using Asset Management tools should see similar results showing clay pipe needing fewer repairs and lasting longer than other sewer pipe materials.

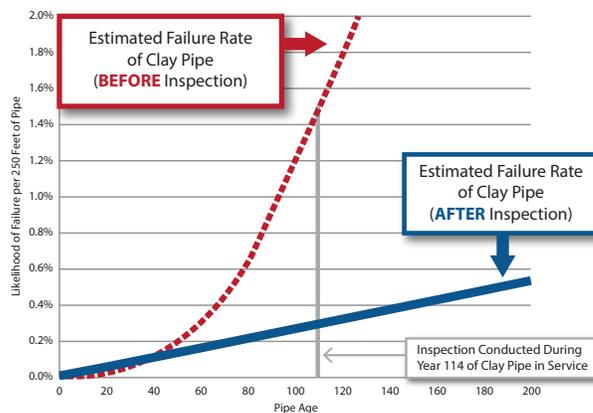
LONGER SERVICE LIFE SAVES TAXPAYERS MONEY

The longer sewer pipes stay in the ground, and the less you have to touch and replace them... the more you save. The math is quite straightforward. NCPI has a software toolkit to help you conduct the economic analysis. If that's something you'd like to learn more about, please let us know, we'll be glad to provide it, and give you a quick briefing on how you can put it to work.

Verified Longer Service Life
"Forty percent of our system is clay, installed between the time of the fire (1885) and 1940. Based on the way these pipes look, they could easily last 200, 300 or 400 years."

Terry Martin, PE
 Acting Director,
 Asset Management & Economic Services

Weibull Curve Data Predicts Service Life of 1,000 Years



FOR FURTHER INFORMATION

To review additional data supporting the information provided here, please see or ask us for copies of these sources:

- "Seattle Study" - Using Historical Repair Data to Create Customized Predictive Failure Curves for Sewer Pipe Risk Modeling. T. Martin, D. Johnson, & S. Ansell. White Paper, International Water Association, LESAM 2007.
- "Designing for Permanence, Material Choices for Real Sustainability" - M. Van Dine, J. Parker, T. Martin. NCPI Webinar, 9/15/2011
- Clay Pipe Paper showing pipe thousands of years old still in service. <- Need help from Tom to cite specific reference.>



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