

# Acoustic Condition Assessment of Water Mains in Newark Delaware

How did we get here? How do we get out of here?

# Introduction

- ▶ Tim Filasky, PE – Acting Director of Public Works and Water Resources
- ▶ Newark, Delaware
- ▶ Population: 34,000 includes approximately 23,000 students
- ▶ Home of the University of Delaware Fighting Blue Hens
- ▶ Great American Main Street Award Winner
- ▶ League of American Bicyclists - Bicycle Friendly Community since 2013

# Water Distribution System Highlights

- ▶ Close enough to Philly to have both water mains and wooder mains
- ▶ Oldest Water Main still in service is 10 inch Cast Iron from 1890.
- ▶ We still dig up wooden mains that are not in service
- ▶ 140 miles of City owned water main from 4" to 24"
  - ▶ Ductile and Cast (Spun and Pit) Iron, Asbestos Cement, some PVC
- ▶ Both surface water treatment plant and groundwater treatment plant
- ▶ Approximately 10,000 metered services ranging from 5/8" to 8"
- ▶ Implemented Honeywell Smart Meter program in 2013



# Water Main Replacement Program Details

- ▶ 2017 Costs for replacement is roughly \$1,000,000 per mile all in
- ▶ Program began in 2012 with a combination of emergency lining and replacement
  - ▶ Some upgrades in in late 1970's and Early 1980's
- ▶ We are trending toward one mile per year with fluctuations based on other Capital Improvement Projects
- ▶ No prevailing wage requirement



# How we've always done it!

- ▶ Main Break history – Database started in 1970's
- ▶ Water Quality complaints
- ▶ Upgrades for service needs (New Development)
- ▶ Moon Phases



# A New Approach

- ▶ GIS Mapping Effort underway since 2013
  - ▶ Maps and data for accurate system model
  - ▶ Installation Dates help determine pipe type and condition
- ▶ Echologics Acoustic Testing (Listen to your pipe?)
  - ▶ Invited to demonstration at neighboring city using innovation grant from State of Delaware
  - ▶ Analyzed 11,600 feet in 2016, including the following:
    - ▶ Railroad, Bridge, and Stream Crossings
    - ▶ Main Roads with potential for rehabilitation
    - ▶ Representative neighborhoods and install dates

# Echologics Details

- ▶ ePulse Technology
- ▶ Leak Detection built in to project area
- ▶ No leaks detected in Newark work area
- ▶ Very little disruption, no holes necessary
- ▶ Detailed report provided
- ▶ Helps to know what your pipes are made of or when they were installed. The more you know, the more they can tell you.



# Acoustic Testing Photos

