

# The Town of Lincoln

## HOW LINCOLN USED AMP GRANT FUNDS TO BUILD A COMPREHENSIVE INVENTORY OF DRINKING WATER ASSETS

### Community Profile

#### Utility

Lincoln Department of Public Works

#### Systems

Drinking Water

#### Total Project Cost

\$111,250

#### 2022 AMP Grant

\$66,750

### Utility Profile

- Serves approximately **5,500** people
- **1,969** service connections
- **16** water pump stations and **37** sewer lift stations
- **63** miles of water mains
- **One** surface water source and **two** groundwater sources
- **One** water treatment plant and one pumping station

The Lincoln Water Department, which is responsible for providing drinking water to over **5,500** Town residents, experienced significant turnover and lacked institutional knowledge of the drinking water system. Complicating the process of improving the system was that the Town did not know the condition of many of its drinking water assets. This made efficiently prioritizing repair and maintenance work a serious challenge. Seeking to solve these issues, Lincoln applied for an Asset Management Planning (AMP) Grant from the Massachusetts Clean Water Trust in 2022.

### Activity Summary

- Created a Geographic Information System (**GIS**) database for the Town to use to catalogue the condition of assets throughout the drinking water system
- Completed **assessment** of the conditions of assets within the system
- Performed a **criticality analysis** on drinking water assets

### Case Study - Lincoln

#### Building an Asset Management System from Scratch

While the Town was able to operate and maintain its drinking water system, many of its assets were approaching the end of their useful lives and needed to be replaced. The lack of an existing asset management system also meant that a new system would have to be built from scratch.

#### Addressing the Risk of Failing Assets

The Town's AMP Grant helped fund the development of an asset management plan and asset management system, through which the Town catalogued the conditions of vertical assets, such as the Water Treatment Plant and pumping station. Through direct observation, performance, and other factors, vertical assets were measured to determine their probability of failure. Assets were then classified according to risk of failure along with the costs of restoring the assets to full working order. Horizontal assets, particularly water mains, were classified according to their ages and materials and were evaluated using hydrant flow tests that measure the drops in pressure in different areas of the system. These tests helped inform the Town of which water mains were in the most urgent need of replacement. All of the data was incorporated into the new asset management system.

#### Using Unexpected Results to Develop Recommendation

Some of the findings of the report were unexpected, according to Lincoln's Water Superintendent, Darin LaFalam, who said "I thought our AC [Asbestos Cement] pipes were going to be our priority for replacement, but after collecting data for this project...it changed our whole focus from AC pipe replacement to cast iron [pipe replacement.]" In addition to new data, the asset management plan also included a financial plan that provided recommendations on how the Town could adjust its budget to provide necessary maintenance as soon as possible.

#### A Comprehensive Inventory of Drinking Water Assets

Lincoln plans to maintain the asset management system implemented during this process in the years to come. Mr. LaFalam said the Water Department is optimistic about the impact this will have. "I think that's the biggest benefit," he said, "we have a serious lack of historical data from poor record-keeping over the past 100 years. Now we're putting everything into this informational database that we're going to be handing to future generations."