

NASSCO REPORT: LATERALS

THE TOWN OF NORWOOD, MASSACHUSETTS

Sees the Benefits of a “Total Solution” Approach to its Rehab Project

BY NASSCO'S LATERAL COMMITTEE

IN 1996, during routine inspections, the EPA began to find abnormally high levels of bacteria within Norwood, Massachusetts' storm water collection system and outfalls. The source of the elevated bacteria levels was suspected to be from a network of “under drains” that travel directly beneath the sanitary sewer system, which were installed to control high ground water. The sewer mains, which consist primarily of VCP, have deteriorated since their installation in the early 1990s, resulting in the ability of the sewage to exfiltrate into the under drains system. Regardless of the source, the elevated bacteria levels were an indicator that unwanted exfiltration and infiltration were occurring in the system, and the pipes were in need of repair.

Norwood public works director and town engineer Mark Ryan recognized the need for corrective action, but getting approval to spend a large amount of money on something that otherwise would go unseen by Norwood residents would be a challenge. “It's a lot easier for residents to understand the spending when it's something they can see such as roads or parks,” said Ryan. “It's a whole other matter when millions of dollars are spent on something that they'll never see.”

Fortunately, John Carroll, town manager for Norwood since 1978, began his career as a civil engineer and recognized the importance of the infrastructure and what happens when excessive infiltration is entering the collection system. “I knew our wastewater infrastructure was old and extensive work needed to be done,” shared Carroll. “We had to do something to address the high levels of bacteria, but funding a project to do the work of the magnitude required would be a challenge.”

Over the years, many small rehabilitation and replacement projects were performed with limited success. CDM Smith recommended a “total solution” vs. the “shotgun” approach which is frequently used for rehabilitation projects. The team recognized that addressing only part of the collection system corrects only part of the problem. Norwood didn't want to keep coming back to fix something else; they wanted to fully resolve the problem once. “Addressing the entire system at once minimizes the disruption to homeowners and is much more conducive to contractors, which we've found ultimately reduces the cost to the Town”, Carroll said.

The decision to take a comprehensive approach to rehab all the components within the basin, including the



Norwood, Massachusetts, has used a number of trenchless methods over the years to address its lateral and pipe relining needs.

manholes, mainlines, and service laterals, was accomplished by relining the mains using the cured-in-place pipe (CIPP) process, spraying the manholes with cement mortar, and using CIPP to also line the service laterals from the main to the homeowners' residences.

Rehabilitation of the laterals included a CIPP section that covered the entire inside diameter of the sewer main (i.e. full-wrap) extending a short distance on either side of the connection, with a lateral liner integrally connected to the main line section of CIPP. The CIPP lateral extended through the lateral and terminated within 3 ft of the pipe transition from VCP to cast iron, or within 10 ft of the residence foundation.

BLD Services, headquartered in Kenner, Louisiana, with a regional office in Massachusetts, was contracted to complete the system rehabilitation. Testing was done after rehabilitating the manholes and laterals, and bacteria levels went to virtually zero. Ryan expected that the lateral and manhole rehabilitation would have an impact on their exfiltration, but even he was surprised at the effectiveness. “I knew we'd get a significant reduction in I/I and improved bacteria readings, but I was pleasantly surprised how effective adding the manholes and laterals to the scope of the project would be. Our decision to address the basin with a total solution was definitely the right way to go,” he said.

This article was submitted by the Lateral Committee of NASSCO.