**2007 Sewer I/I Inspection Project**

The purpose of the project was to complete internal television inspection of all sewer mains not previously inspected in anticipation of a major rehabilitation project. In addition, topside inspections of 871 manholes were also included in the project. Bids for the project were received on December 20, 2006, and the contract was awarded to National Water Main Cleaning Company on January 11, 2007 with a total bid price of $202,812.30.

All resident inspection and contract administration was handled by the Town of Dedham Engineering Department. In addition to the planned cleaning and inspection there were many instances where additional heavy cleaning was necessary to make it possible to inspect sections of sewer mains located in remote easements or to inspect sewers plagued by heavy sediment and/or severe grease problems.

Table 1 lists the total length of sewer main inspected by pipe diameter. Table 2 lists the length of sewer mains cleaned and inspected as a percentage of the total length within Town by pipe diameter. Figure 1 and Figure 2 are graphical representations of Table 1 and the total linear feet of sewers inspected by year respectively.

Table 1

| **Pipe Diameter** | **Length Cleaned and Inspected (feet)** |
|---|---|
| 6” | 6,692 |
| 8” | 107,002 |
| 10” | 9,035 |
| 12” | 14,732 |
| 15” | 5,133 |
| 18” | 1,061 |
| 21” | 2,268 |
| 22” | 40 |
| 24” | 5,352 |
| *Total* | 151,315 |

Table 2

| Pipe Diameter | Percent Cleaned and Inspected (%) |
|---|---|
| 6” | 56 |
| 8” | 25 |
| 10” | 28 |
| 12” | 34 |
| 15” | 45 |
| 18” | 21 |
| 21” | 100 |
| 22” | 100 |
| 24” | 54 |
| *Total* | 28 |

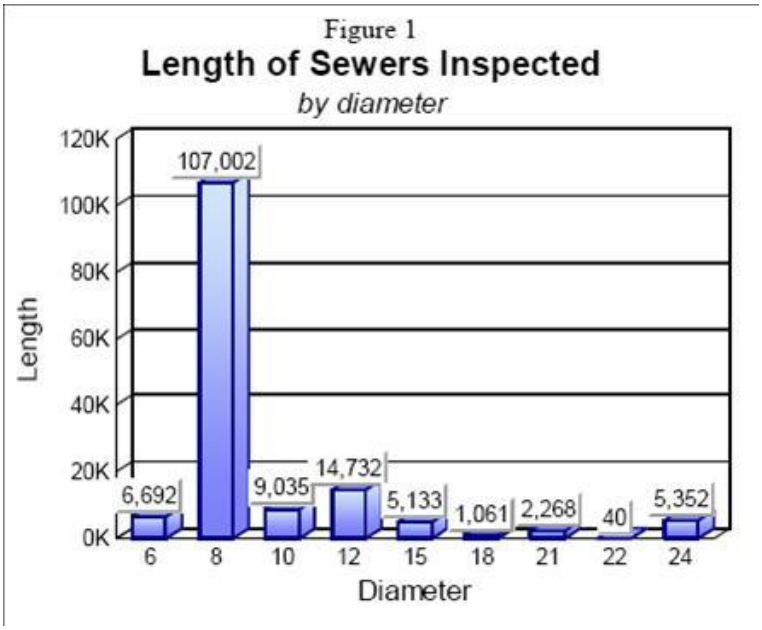
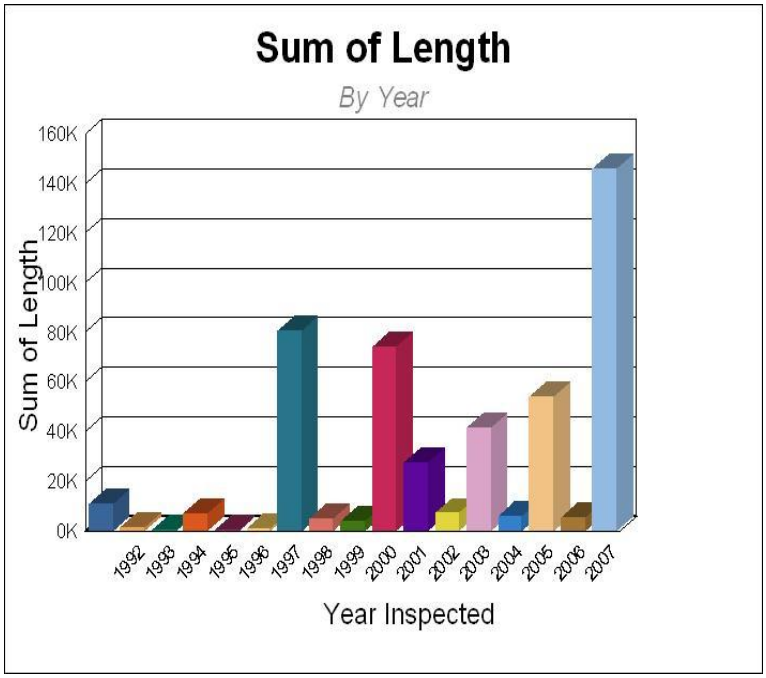


Figure 2




In addition to the cleaning and inspection of 151,315 linear feet of sanitary sewer, the project also included the following notable accomplishments:

- During routine inspection, we discovered a long standing maintenance issue relating to the Paradise Lane Sewer Siphon. Based on observations and discussions with abutters this site has historically been the site of numerous sanitary sewer overflows relating to a blocked main barrel and partially blocked emergency barrel. The Town immediately authorized heavy cleaning of the twin 10" siphon to clear both barrels and return the siphon to normal operation. Due to the remote location the contractor had to utilize a small boat to access the downstream chamber. After two (2) weeks of heavy cleaning this long standing maintenance issue was resolved. The cost of this effort was approximately $30,080 paid under a time and materials change order.

- Throughout the project it was necessary to gain access to and clean and inspect several cross country sewer easements, which in some instances may not have been inspected or cleaned since their original installation due to steep grades and/or the proximity to wetland areas. The Town and Contractor worked cooperatively to try and inspect and clean these remote areas utilizing multiple points of access and gaining permission from private property owners when applicable. In each instance the Town was able to remove significant sediment, roots, and other debris which significantly improved flow hydraulics and allowed for internal inspection.

- In an attempt to inspect the Wigwam Brook Line, a cross country sewer interceptor which runs between Village Avenue and Highland Street it was necessary to gain access from a private property owner (Ursuline Academy) and seek Conservation Commission approval to create a temporary access road through a wetland area and cross a small stream. As a result of the inspection made possible by the temporary road it was discovered that this line was subject to significant infiltration even during an extremely dry period in which most of the wetland area was dry. In order to take advantage of the access roadway, a change order was approved for the immediate CIPP lining of 1,997 linear feet of 12" and 15" vitrified clay pipe. Within hours of the installation of the CIPP liner, the wetlands elevation rose approximately 1-2 feet. The total cost of the lining as negotiated with the contractor was $100,417.20.

- During the course of the inspections several areas with evidence of significant grease deposits were discovered. Upon further investigation the source of the grease deposits were traced back restaurants without grease traps, with malfunctioning traps, or with traps that were not being properly maintained. In each case the Engineering Department worked closely with the Board of Health to remedy the situation and prevent grease from being discharged into the sanitary sewer system.

In conclusion, the total cost of the project including change orders was $357,375.04 and in addition to the items previously mentioned we identified approximately 2.5 MGD of observed infiltration. The results of this inspection project will be combined with previous television inspection data and a contract to remove the most cost effective inflow and infiltration is planned to be put out for construction in the spring of 2008.