

MEMORANDUM

TO: Robert Gregory – Devon Revitalization Committee
Bob Brinton, City Engineer – City of Milford

FROM: Nicolle Burnham, P.E. – Milone & MacBroom, Inc.

DATE: June 14, 2007

RE: Naugatuck Drainage Analysis
Milford, Connecticut
MMI #2625-10

The following is a brief status report of the project and a summary of the work done to date.

The drainage analysis process is still in the data collection phase. MMI has been to the site three times throughout May to field locate the drainage and visually assess both watershed characteristics and evidence of flooded areas. There are two areas that have been identified as having flooding problems which have consequently spurred the need for this study. The parking lot at Saint Ann's Church has shown substantial ponding during storm events, as has the area of Naugatuck Avenue just south of the Route 1 intersection.

Both of these areas ultimately drain to a 24" RCP trunk line running underneath the eastern sidewalk of Naugatuck Avenue. As such, this pipe is the subject of the most scrutiny during the analysis. All structures within the upstream contributing watershed to this pipe and the area downstream have been located by GPS. At each structure, the location was recorded, and the depth/size of each pipe inside the structure and the maintenance condition of each inlet was recorded. This information, along with digital GIS data provided by the town, has been compiled into base mapping to begin the analysis.

A closed circuit television inspection of nearly 1,000 linear feet of the 24" RCP in question was completed on May 29, 2007 by The New England Pipe Company, Watertown Connecticut. The pipe was found to be in good condition, especially considering its age (drawings provided by the Town Engineer dated 1930). Approximately 375 feet south of the Church Street/Naugatuck Avenue intersection, roots from a nearby tree had grown into the pipe to about 1" diameter. However, this root system did not seem to pose any significant hydraulic obstruction, unlike some smaller, more clustered roots sometimes found to be problematic in storm sewer pipes. Other than this obstruction, the run of pipe from 165 feet south of the Route 1/Naugatuck Avenue intersection south to the Ridge Street/Naugatuck Avenue intersection was clear of debris and obstruction.

MMI has been in contact with Town Engineer Bob Brinton throughout these activities. Mr. Brinton was on site for a portion of the CCTV inspection. He has also coordinated with the Town of Milford Public Works Director Bruce Kolwicz to perform maintenance on those

structures in the system requiring it. MMI supplied Bob Brinton with a map delineating, in our opinion, those structures requiring maintenance, but it is our understanding that the work was performed without these recommendations in hand.

Hydraulic modeling of the entire system will be prepared as part of the analysis. The watershed will be analyzed, as will the existing stormwater system, with particular attention paid to the run of pipe under Naugatuck Avenue. Because the CCTV inspection showed the 24" trunk line to be free of debris, the next factors to investigate are the slope and size of existing piping. A capacity issue on a downstream pipe may have been exacerbated over time through any number of factors including further upstream development, inadequate maintenance, and an increase in impervious area. The effects of this could easily propagate upstream to the problem areas. Modeling will begin after the MMI Survey Department has field located the structures in the detailed study area (more accurately horizontally and vertically than GPS), and accurate invert information is obtained.

Based upon recent discussions, survey is expected to be complete by June 22, 2007. The system analysis is expected to take two weeks to complete, and a draft report is expected to be complete and submitted to the town by July 22, 2007.