2.0 THAMES STREET INTERCEPTOR TELEVISION INSPECTION

Based on the age and importance of the Thames Street Interceptor, the Phase I Part I CSO Control Plan included a recommendation that preparatory sewer line cleaning and internal television inspection be performed on the sewer. Television inspection allows the location of individual flow sources within these segments to be pinpointed, viewed and assessed. Television inspection was performed by ADS Environmental Services (ADS) (formerly Severn Trent Pipeline Services) under subcontract to Earth Tech, between March 14, 2006 and March 18, 2006.

Television Inspection Results

- The Thames Street Interceptor is generally in good condition.
- The dimensions of the interceptor as observed during the inspection are as follows:
    - The interceptor measured 38-inches in width by 49-inches in height between the downstream outfall near Touro Street and Dixon Street,
    - 38-inches in width by 39-inches in height between Dixon Street and Webster Street where the top of the brick sewer was removed to facilitate lowering Thames Street, and
    - 36-inches in width by 42-inches in height between Webster Street and Morton Avenue.
- Isolated locations were observed with leaking bricks, missing mortar, and joints between the interceptor and the service connection in disrepair. Service connections and sewer main pipes from tributary side streets were observed running clear water.
- Approximately 185,000 gallons per day (gpd) of infiltration was estimated visually by ADS entering the Interceptor at the side streets and service connections.

Rehabilitation Recommendations

Based on the results of the CCTV inspection, the Thames Street Interceptor is generally in good condition and currently does not require major rehabilitation work. Remediation recommendations for the defects observed were organized into two categories.

- Short Term Remediation
- Long Term Remediation

Short Term Rehabilitation Recommendations

Earth Tech recommends that the City of Newport perform the following short-term investigation and rehabilitation tasks for the Thames Street Interceptor and Sewer Catchment Area 6:

- Perform a sewer system evaluation study (SSES) in Catchment Area 6 to identify infiltration sources observed in the Thames Street Interceptor Television inspection and inflow sources as observed in other priority inflow areas. The SSES of Catchment Area 6 is outlined in further detail in Chapter 8 – Catchment Area 6 Flow Metering.
- Replace all perforated manhole covers on the Thames Street Interceptor to prevent surface flow from entering the sanitary sewer system. The estimated unit cost of the cover replacement is $200 per cover.
- Identification of the type and status (active or abandoned) of utility lines crossing through the interceptor in order to facilitate future planning to ascertain the feasibility of removing or relocating some or all of the lines outside of the interceptor.

Long Term Remediation

The long-term rehabilitation of the Thames Street Interceptor would include the following minor rehabilitation tasks:

- Repair of leaking service connections/poor connections between service connections and mainline sewers, including missing bricks and mortar, protruding services, and joint repair.
- Repair of broken and/or cracked pipes observed in service connections.
- Removal of mineral deposits in service connections and within the Interceptor.
- Removal of roots and joint sealing.
- Repair of leaking bricks within the interceptor.

In addition to the minor rehabilitation above, Earth Tech recommends that a structural pipe liner, such as a cured-in-place liner or an embedded sheet liner, be considered throughout the 6,200 LF of the Thames Street Interceptor. This liner would prevent additional degradation of the brick pipeline caused by constant contact with the flow and abrasives and reinforce the brick sewer structurally. The estimated cost of performing maintenance and lining the interceptor is $4,500,000.

Conclusions

Given its age, the Thames Street Interceptor is in good condition with a number of defects that require attention in the long-term.

At the request of the City, Earth Tech received a contract amendment in December 2006 to perform the SSES investigation of Catchment Area 6 and the replacement of perforated manhole covers identified in the CCTV inspection of the Thames Street Interceptor as part of Phase 1 Part 3. The SSES investigation of Catchment Area 6 is already underway and scheduled to be completed by July 2007. Also, the City has begun investigating the pipes crossing the interceptor to determine the feasibility of removing or relocating the lines outside of the interceptor, to increase its capacity and to facilitate possible future lining of the interceptor.

A detailed description of the Thames Street Interceptor Television Inspection including procedures and results categorized by defect and by priority catchment area are presented in the following Technical Memorandum. The Technical Memorandum also presents short- and long-term recommendations and conclusions for rehabilitating the Thames Street Interceptor.