

**PROVIDENCE, RHODE ISLAND COMBINED SEWER OVERFLOW ABATEMENT STUDY**

**Client:** Narragansett Bay Commission, Providence, RI

**Project Manager:**  
**Daniel J. Coughlin, P.E.**

The project involved the development of an field analysis program to assess the flow and pollution impacts of Combined Sewer Overflows (CSO's) within the downtown section of the City of Providence sewer system referenced as CSO Area "D". Field monitoring, sampling and data analysis efforts were coordinated by Mr. Coughlin as Lead Engineer and included rain gauge monitoring at two (2) stations and sampling and flow monitoring of thirteen (13) combined sewer overflow locations over several months as well as during wet weather events.

Field coordination efforts included the installation of flow monitoring and metering equipment, installation of portable and grab sampling equipment and the continuous retrieval of monitoring data. Divers were also used to set and maintain equipment in some of the larger interceptor sewers measuring greater than ten (10) feet in diameter. Mr. Coughlin coordinated field crews and laboratory sub-consultants on a 24 hour call basis to facilitate the capturing of the "first flush" pollution loads of CSO's in conjunction with suitable rainfall events and precedent dry weather periods. Coordination efforts were also provided to ensure suitable traffic control, NBC notification and associated structural inspections of the sewer system.

Flow monitoring analyses included the development of velocity area relationships for egg, oval and elliptical brick sewer pipes. Field and laboratory data were compiled, proofed, verified and analyzed to quantify CSO impacts and enable refined cost/benefit abatement analyses.

The value of proposed abatements was over \$4,000,000.



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