

**PERFORMANCE AUDIT OF THE INFILTRATION AND
INFLOW MINIMIZATION PLAN PROJECT**

Findings

As is true for many other cities and towns, significant quantities of rainfall and other extraneous water enter the City's sewer system. This intrusion of extraneous water, known as infiltration and inflow (I&I), may overload sewer lines, pump stations, and treatment plants during storms. Those overloads could then result in spills, bypasses, increased costs of wastewater treatment, and premature wear of sewer machinery.

On November 22, 1991, after numerous spills and bypasses from the City's sewer system had occurred, the U.S. Environmental Protection Agency (EPA) issued a Finding of Violation and Order for Compliance against the City. The order required the City to take immediate action to reduce spills and bypasses and to take sufficient corrective measures to reduce I&I. The City negotiated with EPA and obtained what it felt was a more constructive approach in the form of a 1994 final consent decree. The City's project to produce a Long Term Sewer Rehabilitation and Infiltration and Inflow Minimization Plan (I&I project) represents one of several requirements of the consent decree. The project is to provide better information on what the City needs to do to expand and maintain its sewer system, and avoid spills and bypasses.

We found that overall, the I&I project is on time and on budget. The positive results may be due to the explicit consent decree requirement that project management be provided at the project's inception. The training on project scheduling and cost estimation techniques that the Department of Wastewater Management (WWM)* provided

* On July 1, 1998, the department became the Department of Environmental Services under the City's adopted reorganization plan.

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for its project staff may have also contributed. In addition, we understand that planning projects and studies, such as the I&I project, typically are at less risk of cost overruns and schedule delays than are construction projects. We also found that I&I project monitoring is generally adequate, and that project contracts were awarded in accordance with the procurement code.

We did identify a few areas in WWM's management of the project that could be improved:

- (1) Although WWM's initial cost estimates for this project were accurate, we found that at the time the I&I project was initiated, WWM had no written policy or procedure for its engineers to follow to estimate project costs. As a result, the I&I project engineer made the initial cost estimate based on personal experience and knowledge, and on any historical data available. While such estimates are reviewed by the department, cost estimates cannot be consistent without written policies.
- (2) We found that there was no apparent order or method in how I&I project documents were filed. We also found that there is no written WWM policy or procedure to specify how project managers should organize their files, what project supporting documents should be in the files, or in what order or format the documents should be. As a result, each project manager in WWM determines how the files for their projects are organized.
- (3) We found that while WWM closely monitored the expenditures made under each contract for the I&I project, it has difficulty gathering the information on cumulative appropriations and expenditures for the I&I project. Such information has to be collected

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from separate computer databases, often manually, and is in a form that does not lend itself to providing a consolidated view of a project's appropriations and expenditure history.

Recommendations and Response

The department should develop and implement formal written policies specifying how project costs are to be estimated, reviewed, and approved, and specifying how contract files should be organized. It should also work with the City Administration to obtain access to the computerized information necessary for the department to easily generate periodic project reports that display the cumulative history of appropriations and expenditures.

The Department of Wastewater Management generally agreed with the recommendations made in this report and scheduled their implementation by the end of the year. We made a few clarifications to the draft report in response to the department's comments.