

AUDIT REPORT



CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
BUREAU OF FINANCIAL AUDIT
WILLIAM C. THOMPSON, JR., COMPTROLLER

Audit Report on Department Of Environmental Protection Compliance with Procedures For Issuing Three-Day Notices

EW03-061A

May 12, 2003



THE CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
1 CENTRE STREET
NEW YORK, N.Y. 10007-2341

WILLIAM C. THOMPSON, JR.
COMPTROLLER

To the Citizens of the City of New York

Ladies and Gentlemen:

Pursuant to Chapter 5, Section 93 of the New York City Charter, we have examined whether the Department of Environmental Protection is following its procedures for identifying leaks in service lines and issuing three-day notices to property owners. The results of our audit, which are presented in this report, have been discussed with agency officials, and their comments have been considered in preparing this report.

Audits such as this provide a means of ensuring that City agencies are providing services that are efficient, effective, and in the best interest of the public.

I trust that this report contains information that is of interest to you. If you have any questions concerning this report, please contact my audit bureau at 212-669-3747 or e-mail us at audit@Comptroller.nyc.gov.

Very truly yours,

A handwritten signature in cursive script that reads "William C. Thompson, Jr.".

William C. Thompson, Jr.

Report: EW03-061A
Filed: May 12, 2003

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***The City of New York
Office of the Comptroller
Bureau of Financial Audit***

**Audit Report on
Department of Environmental Protection
Compliance with Procedures
For Issuing Three-Day Notices**

EW03-061A

AUDIT REPORT IN BRIEF

We performed an audit of the Department of Environmental Protection's (the Department) procedures for identifying leaks in service lines and issuing three-day notices to property owners. If personnel of the Department's Bureau of Water and Sewer Operations find that a property's water service line is leaking, a "three-day notice to repair" is issued to the owner. A three-day notice requires that a property owner hire, at the owner's expense, a licensed plumber to repair or replace the defective water line within three calendar days. If a property owner does not comply with the notice, the Department has the authority to shut off the water service to the property.

When complying with a three-day notice, a property owner's plumber must test the service line to confirm whether it is indeed leaking before repairing or replacing it. If testing reveals that the service line is not leaking, the property owner is entitled to file a property tort claim with the Comptroller's Office to recover the cost of hiring the plumber. Reimbursement to the property owner is limited to the cost of the testing work required to confirm whether the service line was leaking.

According to the Department officials, in Fiscal Year 2001, the Department performed 10,300 leak investigations. The Department issued 3,218 three-day notices, 74 of which were issued in error.

Audit Findings and Conclusions

Although the error rate in issuing three-day notices is small compared with the number of leak investigations performed by the Department, we noted the following issues, which if addressed, would further enhance the program.

- The Department has no written procedures for conducting leak investigations.
- The aquaphone, one instrument that the Department uses to sound (listen to) a building's service line, does not always produce accurate results.

- The Department should improve its communication with the public in order to minimize the number of unproductive repeat visits to gain access to properties and to prevent the public from incurring unnecessary expenses.

Audit Recommendations

The Department should:

- Develop formal written procedures for conducting leak investigations.
- Provide appropriate training to Department staff on the formal procedures.
- Consider implementing a pilot program to evaluate whether it is cost effective to provide supervisory personnel with more sophisticated equipment for identifying leaks.
- Revise its notification forms to inform property owners of the reason(s) the Department needs to gain access to the premises and of the actions it wishes the owner to take in response to the notice.
- Revise the three-day notices to inform property owners of the procedures for investigating and confirming leaks in service lines.
- Print “missed you” and three-day notices in multiple languages.

INTRODUCTION

Background

The Department of Environmental Protection (the Department) is responsible for operating the City’s water supply system and for carrying out programs to conserve water. The water supply system consists of large trunk mains that transport water to smaller distribution mains that supply water to customers. Individual service lines bring water from the distribution mains into a property owner’s building. The individual service lines are not owned or maintained by the Department. The maintenance of these service lines is the responsibility of each property owner.

The Department’s Bureau of Water and Sewer Operations has a Maintenance Division and a Repair Division. If Maintenance Division (Division) personnel find that a property’s water service line is leaking, a “three-day notice to repair” is issued to the owner. When issued, a three-day notice requires that a property owner hire, at the owner’s expense, a licensed plumber to repair or replace the defective water line within three calendar days. If a property owner does not comply with the notice, the Department has the authority to shut off the water service to the property.

When complying with a three-day notice, a property owner’s plumber must test the service line to confirm whether it is indeed leaking before repairing or replacing it. If testing reveals that the service line is not leaking, the property owner is entitled to file a property tort claim with the Comptroller’s Office to recover the cost of hiring the plumber. Reimbursement to

the property owner is limited to the cost of the testing work required to confirm whether the service line was leaking.

In Fiscal Year 2001, the Department issued 3,218 three-day notices, 74 of which were issued in error. Property owners filed tort claims for 43 of the 74 notices, of which 36 were settled for a total of \$73,581, or an average of \$2,044 per claim.¹

Division personnel carry out leak investigations in each borough. Personnel generally investigate leaks by checking an area for signs of a visible leak and, after shutting the house valve, by using an “aquaphone” to “sound” (listen to) service lines, fire hydrants, and valves for noise of water still running that may indicate a leak.

Leaks that Division personnel cannot trace are referred to the Department’s Leak Detection Unit, which uses amplified listening devices and other equipment that are more accurate than aquaphones. The Leak Detection Unit’s main responsibility is to survey every water main in the city on a scheduled basis to minimize water leaks in the City.

Objective

The objective of this audit was to determine whether the Department is following its procedures for identifying leaks in service lines and issuing three-day notices to property owners.

Scope and Methodology

The scope of this audit covers three-day notices issued in Fiscal Year 2001 (July 1, 2000, through June 30, 2001). As part of the audit, we reviewed Department policies and procedures, examined records, and interviewed Department officials. We also reviewed tort claims pertaining to erroneously issued three-day notices on file at the Comptroller’s Office. To determine whether the Department is in compliance with its policies and procedures for issuing three-day notices, we interviewed each borough supervisor. The supervisors explained the procedures that Division personnel are supposed to follow in investigating water leaks. As part of our fieldwork, we accompanied and observed Division personnel in each borough as they conducted leak investigations in response to complaints and as they re-checked properties for which three-day notices had already been issued. In addition, we met with and accompanied personnel of the Leak Detection Unit to obtain an understanding of their procedures.

We obtained documentation for 74 erroneously issued three-day notices from Department borough maintenance yards and from the Department’s “Hansen” computer system.² Specifically, we reviewed the Department’s “Customer Service Requests,” forms on which

¹The other seven claims were disallowed, because the claimants failed either to file timely claims or to provide additional requested information. Claims were not filed for 31 erroneously issued notices.

² The 74 erroneously issued three-day notices were identified based on information provided by the Department and the Tort Claim Section of the Comptroller’s Office Bureau of Engineering.

customer complaints about leaks are recorded and which initiate a leak investigation, and the Department's "Work Orders," used by Division personnel to record their actions when investigating leaks.

Interviews with Department officials, field visits, and data reviews also enabled us to determine whether the Department has adequate controls in place to prevent the erroneous issuance of three-day notices. Additionally, we contacted manufacturers of amplified listening devices to determine whether the Department could benefit from such technologies.

This audit was conducted in accordance with Generally Accepted Government Auditing Standards (GAGAS) and included tests of the records and other auditing procedures considered necessary. This audit was performed in accordance with the audit responsibilities of the City Comptroller as set forth in Chapter 5, § 93, of the New York City Charter.

Discussion of Audit Results

The matters covered in this report were discussed with officials from Department during and at the conclusion of this audit. A preliminary draft report was sent to Department officials and discussed at an exit conference held on April 3, 2003. On April 11, 2003, we submitted a draft report to Department officials with a request for comments. We received written comments from the Department on May 2, 2003.

In its response, Department officials generally agreed with the report's recommendations to: develop formal written procedures for conducting leak investigations; provide appropriate training to Department staff; revise its notification forms and three-day notices to more adequately inform property owners; and print "missed you" and three-day notices in multiple languages. The Department disagreed with the report's recommendation to consider implementing a pilot program to evaluate the use of more sophisticated equipment for identifying leaks. However, the Department stated that it would survey other electronic equipment at the agency to determine whether it is functioning properly and can be used for difficult leak investigations.

The full text of the Department's comments is included as an addendum to this report.

FINDINGS AND RECOMMENDATIONS

The Department has no written procedures for conducting leak investigations. Although the records reviewed indicate that only 74 three-day notices were issued in error, it is important that written procedures be developed to ensure that investigations are carried out properly and that the number of three-day notices issued in error is minimized. In addition, the aquaphone, which the Department uses to sound a building's service line, does not always produce accurate results. Moreover, the Department should improve its communication with the public in order to minimize the number of unproductive repeat visits to gain access to properties and to prevent the public from incurring unnecessary expenses. These issues are discussed in the following sections of this report.

No Written Procedures for Conducting Leak Investigations

The Department has no written procedures for conducting leak investigations. Although records maintained by the Department and the Comptroller's Office indicate that only 74 three-day notices were issued in error of the 3,218 three-day notices issued, it is important that written procedures be developed. Such procedures would help to ensure that investigations are carried out uniformly and would further reduce errors.

Interviews with Department officials revealed that Division personnel throughout the five boroughs are instructed to follow similar procedures. These procedures include shutting the house water valve and draining the property's pipes prior to sounding the water service line, sounding the service lines of adjacent properties, and obtaining supervisory confirmation of the findings made by Division personnel.

Although Division personnel followed these procedures when we accompanied them on their investigations, the documentation pertaining to the 74 notices reviewed indicated that procedures were not always followed. The documentation indicated that in 23 cases, none of the three above-stated procedures were followed; in 43 cases one or two procedures were not followed; and in only eight cases were all procedures followed. Specifically, we found:

- 36 cases in which Division personnel did not shut the house water valve and drain the property's pipes prior to sounding the water line.
- 40 cases in which not all adjacent properties were sounded.
- 60 cases that lacked evidence of supervisory review.

We believe that the failure to follow these procedures contributes to the Department's erroneous issuance of three-day notices. The most glaring example of this can be seen in two cases in which three-day notices were issued erroneously to different property owners for the same reported leak. For example, on January 2, 2001, the Department issued a three-day notice to the owner of a property on East 59th Street in Brooklyn (Customer Service Request 251889). A plumber determined that the leak was not on the owner's property. Based on that finding, the

Department again investigated the reported leak, and on January 11, 2001, it issued a three-day notice to another property owner on the block. Unfortunately, this notice was also issued in error. A review of the documents concerning the case revealed that a supervisory review was not performed prior to issuing the three-day notices, and in the first instance, not all adjacent properties were sounded. Both property owners filed claims against the City, which were settled for a total of \$3,575.

As another example, on May 23, 2001, the Department issued a three-day notice to the owner of a property on 51st Street in Brooklyn (Customer Service Request 306122). A review of the documents concerning this case revealed that none of the Department's procedures were followed prior to issuing the three-day notice. However, three days after issuing the notice, a Department supervisor shut and drained the property's service lines and determined that the leak was on another property.

If Department had written procedures for conducting leak investigations, some of the problems described above might have been avoided. This, in turn, might reduce the costs associated with tort claims filed against the City.

Recommendations

The Department should:

1. Develop formal written procedures for conducting leak investigations. As part of the procedures, the Department should develop a checklist whereby personnel can document the steps performed during each inspection. The checklist should be reviewed and approved by a supervisor before a three-day notice is issued.
2. Provide appropriate training to Department staff on the formal procedures.

Department Response: "Although Department personnel have been thoroughly trained in an extensive apprenticeship program in all aspects of sewer and water maintenance and repair (including leak investigation), we agree that a written procedure for leak investigation would help to reinforce this training and ensure uniformity. A leak investigation procedure is currently being prepared."

The Use of Advanced Technology Could Reduce The Number of Notices Issued in Error

The Department may reduce the number of three-day notices issued in error by providing supervisory personnel with more up-to-date equipment for confirming the results of soundings. At present, the aquaphone, a low cost, low technology device, is used to sound a building's service line to determine whether it is leaking. However, as indicated by the fact that notices were erroneously issued in 74 cases, the use of the aquaphone does not always produce accurate results. In fact, as mentioned previously, in eight of the 74 cases reviewed, notices were issued in error despite Department personnel following all of the required procedures. Obviously, if the aquaphone was always accurate, leaks would not be detected where they do not exist.

We found that currently available listening devices are equipped with meters, amplification features, and sound filtering capabilities that would help pinpoint the location of leaks and would provide more precise results in investigations of complaints. More accurate soundings would reduce the number of three-day notices issued in error, resulting in a reduced number of claims filed against and paid for by the City.

Recommendation

3. The Department should consider implementing a pilot program to evaluate whether it is cost effective to provide supervisory personnel with more sophisticated equipment for identifying leaks.

Department Response: “The most frequently utilized piece of equipment in leak investigation is an aquaphone, which amplifies the sound of a leak. We have found this tool to be dependable in locating leaks. However, in the rare instance where a leak is difficult to pinpoint, each water maintenance yard has its own electronic leak detection equipment, which can be utilized to complete the investigation. (It is our intent to survey this equipment to determine that it is functioning properly and emphasize in the written procedure that it is be used in difficult investigations.) Therefore, it is not necessary to initiate a pilot program utilizing more sophisticated equipment in that this equipment is currently available to DEP [Department] personnel.”

Auditor Comment: Although the Department considers the aquaphone to be dependable in locating leaks, we found that it does not always produce accurate results. Nevertheless, we are pleased that the Department will determine whether other electronic leak detection equipment at the agency is functioning properly and can be used in difficult leak investigations. However, if the Department finds that its own electronic leak equipment does not provide precise results, it should reconsider our recommendation and implement a pilot program to evaluate more sophisticated equipment.

Better Communication with the Public Needed

Unclear "Missed You" Notices May Lead To Unproductive Visits by Division Personnel

To investigate reported leaks, Division personnel must gain access to the complainant's property as well as to adjacent properties. When Division personnel are unable to gain entry to a property, they typically leave a “missed-you” notice at the premises. The missed you notice states in part, “No one was home when we checked your complaint.” However, owners of properties where missed-you notices are left are frequently not the actual complainants. Accordingly, the owners may ignore the notices, which ask them to contact the Department to arrange for an inspection of the premises. Consequently, Department personnel may make unproductive repeat visits to gain entry to the properties.

In 30 of the 74 cases reviewed, we found that Division personnel made multiple visits to gain access to properties to be inspected. In fact, in seven of these cases Department personnel made five or more visits to the premises. Certainly, the number of visits to these properties

could have been reduced had the Department scheduled inspections with the property owners in advance rather than making repeated attempts to gain access to the premises.

In addition, we noticed that missed you notices are printed only in English. Given the diversity of residents in the City, we believe that the Department would benefit from printing these notices in multiple languages. This in turn could also reduce the number of multiple unproductive visits.

Lack of Instructions for Recipients of Three-Day Notices May Lead to Unnecessary Costs to the Public

According to Department officials, after a three-day notice is issued, property owners must hire a plumber who will dig a test pit to determine whether the service line is actually leaking prior to replacing the line. This contradicts the information contained on the three-day notice, which states that “the pipe through which water is conveyed to the . . . premises is defective and leaking. You are hereby notified that the pipe must be repaired within three days (3) days from the date hereof.” Consequently, owners are arranging repairs to service lines without knowing whether their service line is actually leaking. The importance of such confirmation is evident since we found that unnecessary plumbing work was performed in 13 of the 36 claims that were settled in Fiscal Year 2001. We should note that the property owners were not reimbursed for the unnecessary work, which totaled \$8,796.

As in the above finding for missed you notices, the three-day notices are printed only in English. Once again, we believe that the Department would benefit from printing these notices in multiple languages.

Recommendations

The Department should:

4. Revise its notification forms to inform property owners of the reason(s) the Department needs to gain access to the premises and of the actions it wishes the owner to take in response to the notice. The Department should also include detailed information about how and when to contact the Department. In addition, the Department should print the notices in multiple languages to help ensure that it gains access to all premises required to locate reported leaks.
5. Revise the three-day notices to inform property owners of the procedures for investigating and confirming leaks in service lines. The notice should advise property owners to have the services lines inspected by a plumber to confirm that the lines are actually leaking before approving repairs.
6. Print “missed you” and three-day notices in multiple languages.

Agency Response: “The “Missed You” notice is being revised. It will state ‘a complaint’ rather than ‘your complaint.’ Furthermore, the existing notice does state the reason for

our visit, which is indicated on the Complaint line and the action to be taken is indicated in the checked box 'Please Call _____.'

“The Three-Day Notice has been revised (see attached) to state, ‘**The plumber is required to prove that the water leak is on your service prior to replacing it**’ [emphasis in original]. In addition, both the Three-Day and Missed You notices will be printed in Spanish and English. To further assist in a leak investigation, supervisory personnel will be instructed to utilize a reverse telephone directory. This will enable DEP personnel to find a phone number for a particular address.”

May 2, 2003

Greg Brooks
Deputy Comptroller for Policy, Audits
Accountancy & Contracts
The City of New York Office of The Comptroller
1 Centre Street, Executive Offices
New York, NY 10007-2341

Re: Audit Number EW03-061A Audit of the Department of Environmental Protection's Compliance with Procedures For Issuing Three-Day Notices

Louis J. Tazzi
Deputy Commissioner
Bureau of Management
And Budget

Tel (718) 595-3403
Fax (718) 595-3437

Dear Mr. Brooks:

We would like to thank you for the opportunity to comment on the above referenced audit recently conducted at DEP. We appreciate the opportunity to respond to the draft report and our comments on each recommendation are attached.

Sincerely,

Louis J. Tazzi

Dist: Christopher Ward
David Tweedy
Shauna Grob
Mark Hoffer
Douglas Greeley

Mike Krysko
Naomi Hamer
Charles Sturcken
John Lento
Peggy Rose Viera (Operations)

DEPARTMENT OF ENVIRONMENTAL PROTECTION AUDIT RESPONSE
Audit Number EW03-061A Audit of the Department of Environmental Protection's
Compliance with Procedures For Issuing Three-Day Notices

Recommendation 1 - Develop formal written procedures for conducting leak investigations. As part of the procedures, the Department should develop a checklist whereby personnel can document the steps performed during each inspection. The checklist should be reviewed and approved by a supervisor before a three-day notice is issued.

Recommendation 2 – Provide appropriate training to Department staff on the formal procedures.

DEP Response: Although Department personnel have been thoroughly trained in an extensive apprenticeship program in all aspects of sewer and water maintenance and repair (including leak investigation), we agree that a written procedure for leak investigation would help to reinforce this training and ensure uniformity. A leak investigation procedure is currently being prepared.

Recommendation 3 – The Department should consider implementing a pilot program to evaluate whether it is cost effective to provide supervisory personnel with more sophisticated equipment for identifying leaks.

DEP Response: The most frequently utilized piece of equipment in leak investigation is an aquaphone, which amplifies the sound of a leak. We have found this tool to be dependable in locating leaks. However, in the rare instance where a leak is difficult to pinpoint, each water maintenance yard has its own electronic leak detection equipment, which can be utilized to complete the investigation. (It is our intent to survey this equipment to determine that it is functioning properly and emphasize in the written procedure that it is be used in difficult investigations.) Therefore, it is not necessary to initiate a pilot program utilizing more sophisticated equipment in that this equipment is currently available to DEP personnel.

Recommendation 4 – Revise its notification forms to inform property owners of the reason(s) the Department needs to gain access to the premises and of the actions it wishes the owner to take in response to the notice. The Department should also include detailed information about how and when to contact the Department. In addition, the Department should print the notices in multiple languages to help ensure that it gains access to all premises required to locate reported leaks.

Recommendation 5 – Revise the three-day notices to inform property owners of the procedures for investigating and confirming leaks in service lines. The notice should advise property owners to have the service lines inspected by a plumber to confirm that the lines are actually leaking before approving repairs.

DEPARTMENT OF ENVIRONMENTAL PROTECTION AUDIT RESPONSE
Audit Number EW03-061A Audit of the Department of Environmental Protection's
Compliance with Procedures For Issuing Three-Day Notices

Recommendation 6 – Print “missed you” and three-day notices in multiple languages.

DEP Response: The “Missed You” notice is being revised. It will state “a complaint” rather than “your complaint.” Furthermore, the existing notice does state the reason for our visit, which is indicated on the Complaint line and the action to be taken is indicated in the checked box “Please Call _____.”

The Three-Day Notice has been revised (see attached) to state, **“The plumber is required to prove that the water leak is on your service prior to replacing it”**. In addition, both the Three-Day and Missed You notices will be printed in Spanish and English. To further assist in a leak investigation, supervisory personnel will be instructed to utilize a reverse telephone directory. This will enable DEP personnel to find a phone number for a particular address.